

November 6, 2002

Mr. Peter E. Katz  
Vice President - Calvert Cliffs Nuclear Power Plant  
Constellation Generation Group  
Calvert Cliffs Nuclear Power Plant, Inc.  
1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT - NRC INTEGRATED  
INSPECTION REPORT 50-317/02-05, 50-318/02-05

Dear Mr. Katz:

On September 28, 2002, the NRC completed an inspection at your Calvert Cliffs Nuclear Power Plant Units 1 & 2. The enclosed report documents the inspection findings which were discussed on October 30, 2002, with Mr. 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.

The NRC has increased the security requirements at Calvert Cliffs Nuclear Power Plant in response to terrorist acts on September 11, 2001. Although the NRC is not aware of any specific threat against nuclear facilities, the NRC has issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The NRC continues to inspect licensee's security controls and compliance with the Order and current security regulations.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a Non-Cited Violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this Non-Cited Violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at the Calvert Cliffs facility.

Peter E. Katz

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Sincerely,

/RA/

Michele G. Evans, Chief  
Projects Branch 1  
Division of Reactor Projects

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

Enclosures: Inspection Report 50-317/02-05 and 50-318/02-05

Attachment 1 - Supplementary Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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

Report Nos.: 50-317/02-05  
50-318/02-05

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: June 30, 2002 - September 28, 2002

Inspectors: David Beaulieu, Senior Resident Inspector  
Leonard Cline, Resident Inspector  
Ronald Nimitz, Senior Health Physicist  
Wayne Schmidt, Senior Reactor Engineer

Approved by: Michele G. Evans, Chief  
Projects Branch 1  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000317/2002-005, 05000318/2002-005, on 06/30 - 09/28/2002, Calvert Cliffs Nuclear Plant, Inc.; Calvert Cliffs Nuclear Power Plant, Units 1 & 2. Radioactive Material Processing and Transportation

The inspection was conducted by resident inspectors and a senior health physicist. One green finding of very low safety significance was identified during this inspection and was classified as a Non-Cited Violation. The significance of most findings is indicated by their color (green, white, yellow, red) using 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. Inspector Identified Findings

Cornerstone: Public Radiation Safety

Green. From an in-office review, the inspector identified a Non-Cited Violation of 10 CFR 71.5. On July 11, 2002, Constellation Generation's Calvert Cliffs Nuclear Power Plant failed to properly fill and limit the contents of a package of hazardous material (i.e., radioactive material) such that, under conditions normally incident to transportation, the effectiveness of the package would not be substantially reduced, as specified by the Department of Transportation's (DOT) regulation, 49 CFR 173.24(b)(2). On arrival at the processing facility on July 12, 2002, a piece of metal, from the shipment of radioactive material, was found to be protruding from the package.

Constellation Generation's failure to fill and limit the contents of the package to preclude a substantial reduction in the effectiveness of the package to ensure conformance with the requirements of 49 CFR 173.24(b)(2) was determined to have very low safety significance, using the Public Radiation Safety Significance Determination Process. The finding involved a breach of a package containing less than a Type A quantity of radioactive material during transit but did not involve a loss of containment of the radioactive material. Although the package was breached and contained contaminated material, the piece of metal protruding from the package was not contaminated with radioactive material. (Section 2PS2).

## Report Details

Units 1 and 2 operated at or near 100 percent power for the entire inspection period.

### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather Protection

##### a. Inspection Scope

The inspector verified the operability of structures, systems, and components that are required to ensure safe operation of the plant during severe weather conditions such as a hurricane or the probable maximum precipitation event. The inspectors reviewed the Updated Final Safety Analysis Report, the Individual Plant Examination of External Events, the Technical Specifications, Emergency Response Plan Implementation Procedure 3.0, Attachment 20, "Severe Weather," and Operations Administrative Policy 00-01, "Severe Weather Operations." The inspector verified by walkdown that equipment used for emergency ventilation of the safety-related switchgear rooms was properly staged in accordance with licensee procedures, and that the condition of the Auxiliary building roof drains was such that they were capable of preventing an accumulation of water on the Auxiliary Building roof sufficient to cause it to collapse into the emergency diesel generator rooms.

##### b. Findings

No findings of significance were identified.

#### 1R04 Equipment Alignment

##### .1 Partial Walkdown

##### a. Inspection Scope

The inspectors conducted an equipment alignment partial walkdown to evaluate the operability of a selected redundant train while the affected train was inoperable. The walkdown included a review of system operating instructions to determine correct system lineup and verification of critical components to identify any discrepancies that could affect operability of the redundant train or backup system. The inspectors performed partial system walkdowns on the following systems:

- 1A emergency diesel generator (EDG) while the 1B was out of service for planned maintenance on July 24, 2002.
- 22 switchgear ventilation while the 21 switchgear ventilation was out of service for planned maintenance on August 7, 2002.
- 21 saltwater system while the 22 saltwater system was out of service for planned maintenance on August 27, 2002.

The inspectors reviewed the following Calvert Cliffs Nuclear Power Plant documentation:

- Operating Instruction OI-21A-1, "1A Diesel Generator"
- Operating Instruction OI-22H, "Switchgear Ventilation and Air Conditioning"
- Operating Instruction OI-29-2, "Saltwater System"

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of the Unit 1 Chemical and Volume Control system, to identify any discrepancies between the existing equipment lineup and the required lineup. During the walkdown, the procedure OI-2A, "Chemical and Volume Control System," and Drawing No. 60730, "Chemical and Volume Control System," were used to verify that electrical power was available as required; major system components were correctly labeled, lubricated, cooled, and ventilated; hangers and supports were correctly installed and functional; essential support systems were operational; and ancillary equipment and debris did not interfere with system performance. Documentation associated with unresolved design issues such as temporary modifications, operator workarounds, and items tracked by plant engineering were also reviewed to assess their collective impact on system operation. The documentation reviewed included:

- IR3-001-751, 12 charging pump was gas bound.
- IR3-062-420, 12 charging pump discharge check valve leaks by its shut seat.
- IR3-063-433, A Unit 1 charging header low flow alarm was received during daily charging pump venting.
- IR3-063-402, After starting 12 charging pump, charging header flow dropped to approximately 25 gallons per minute.
- IR4-004-759, 12 Charging pump was gas bound.
- IR3-079-066, 13 Charging pump was started and a banging noise was noted.

b. 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 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:

- Unit 2 45 foot level switchgear room
- Unit 2 27 foot level switchgear room
- Unit 1 charging pump room
- Unit 2 charging pump room
- Unit 1 auxiliary feedwater pump room
- Unit 2 auxiliary feedwater pump room
- Unit 1 and 2 Intake Structure

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed licensed operator simulator training in order to assess operator performance. Areas of focus included high risk operator actions, operators' activities associated with the Emergency Plan, and previous lessons learned items. The inspectors also evaluated the clarity and formality of communications, the implementation of appropriate actions in response to alarms, the performance of timely control board operation and manipulation, and the oversight and direction provided by the shift supervisor. The following simulator training scenarios were reviewed:

- The inspectors observed a scenario involving a loss of main feedwater complicated by a loss of all auxiliary feedwater. The inspectors evaluated the performance of risk significant operator actions including emergency operating procedure, EOP-3, "Loss of all Feedwater," Step G, which directed operators to commence a natural circulation cooldown.
- The inspectors observed a scenario involving an anticipated transient without a scram complicated by a loss of all auxiliary feedwater. The inspectors evaluated the performance of risk significant operator actions including emergency operating procedure, EOP-0, "Post-trip Immediate Actions," step 2.1, which provided alternate actions for shutting down the reactor.

b. Findings

No findings of significance were identified.

## 1R12 Maintenance Effectiveness

### a. Inspection Scope

The inspectors reviewed performance-based problems involving an in-scope system to assess the effectiveness of the maintenance program. The review focused on: (1) characterization of failed components; (2) safety significance classification; (3) 10 CFR 50.65 (a)(1) and (a)(2) classification; and (4) the appropriateness of performance criteria for SSCs classified as (a)(2). The inspectors reviewed the most recent system health report and system functional failures of the last two years. The following system and components were reviewed:

- The inspector reviewed the licensee's maintenance rule classification, and corrective actions associated with recent failures experienced on the Unit 1 service water heat exchanger saltwater flushing valves.

The inspectors also reviewed the following Calvert Cliffs Nuclear Power Plant documentation:

- Station Procedure MN-1-112, Managing System Performance
- Maintenance Rule Scoping Document, Revision 18
- Maintenance Rule Indicator Report, July 2002

### b. Findings

No findings of significance were identified.

## 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

### a. Inspection Scope

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

- MO2200202101 The 22A and 22B service water heat exchangers were removed from service on July 31, 2002, to replace the saltwater strainer flush valves.
- MO1200200042 The 13 containment air cooler was removed from service on August 20, 2002, to replace its slow and fast speed starters.
- MO1200204485 The 12A and 12B service water heat exchangers were removed from service on September 15, 2002, to replace the saltwater strainer flush valves.
- MO1200103454 The 12 component cooling water pump was removed from service on July 10, 2002, to perform a feeder breaker inspection.

- MO1200103523 The 1B emergency diesel generator was removed from service on July 24, 2002, to perform a leak test of air receiver check valve 1B-DSA-106.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed operator performance during the July 24, 2002, event in which the Unit 1 reactor was manually tripped in response to a high thrust bearing temperature (195°F) on the 11A reactor coolant pump. All systems responded satisfactorily, with the exception of a turbine bypass valve, which closed slowly, causing Unit 1 steam generator pressure to approach the point of action to shut the main steam isolation valves. The inspectors examined the operator logs, equipment response, sequence of events recorder logs, and alarm response procedures to determine if operators performed the appropriate actions in accordance with their training and procedure EOP 00-01, "Post Trip Immediate Actions."

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems and reviewed design basis information in the Final Safety Analysis Report to assess: (1) 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 No. 02-004 - 11B reactor coolant pump bay fire detection
- Operability Determination No. 02-005 - Steam generator level condensing pots are higher than assumed in the instrument uncertainty calculation.
- Operability Determination No. 02-006 - The Unit 1 wide range noble gas monitor is inoperable due to a failed detector power supply, and a failed sample meter.

- Operability Determination No. 02-007 - While performing the daily vent of the 12 charging pump operators received a low charging header flow alarm.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors evaluated the aggregate effect of risk-significant 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; and (3) if operator workaround problems were captured in the licensee's corrective action program.

Inspectors also reviewed the licensee's monthly assessment of the aggregate effects of operator workarounds for September 2002. In particular, the inspector focused on the licensee's plans to address two component deficiencies at Unit 2 in the chemical and volume control system that affected makeup operations.

b. 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 following maintenance orders were reviewed:

- MO2200202780, 21 switchgear HVAC air handler fan pulley replacement, was satisfactorily retested by performing flow measurements in accordance with engineering test guidance provided by design engineering.
- MO2200102393, 22 charging pump gear reducer overhaul, was satisfactorily retested by performing a test run in accordance with surveillance procedure, STP O-73D-2, "Charging Pump Performance Test."

- MO1200200042, 13 containment air cooling fan slow and fast speed starter replacement, was satisfactorily retested by a 15-minute test run in both slow and fast speeds in accordance with operating instruction OI-5A, "Containment Cooling System Operation."
- MO2200104290, 22B service water heat exchanger cleaning, was satisfactorily retested by performing flow verification testing in accordance with Operating Instruction OI-29-2, "Saltwater System Operation."
- MO2200104294, service water pressure control valve 2PCV1589B was satisfactorily retested by performing a timed stroke test in accordance with surveillance procedure, STP O-65C-2, "22 Service Water Subsystem Valve Quarterly Operability Test."
- MO1200200096, perform sub component inspections of the 1B emergency diesel generator, was satisfactorily retested by performing a fast speed start and load in accordance with surveillance procedure STP O-8B-1, "Test of 1B Diesel Generator 14 4KV Bus Sequencer."

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed performance of surveillance test procedures and reviewed test data of selected risk-significant systems, structures, and components (SSCs) to assess whether the SSCs satisfied Technical Specifications, Updated Final Safety Analysis Report, Technical Requirements Manual, and licensee procedure requirements. The inspectors assessed whether the testing appropriately demonstrated that the SSCs were operationally ready and capable of performing their intended safety functions. The following tests were reviewed:

- STP M-213-2 "Calibration of Power Range Nuclear Instrumentation by Comparison with In-core Nuclear Instrumentation"
- STP O-27-1 "Reactor Coolant System Leakage Evaluation"
- STP O-090-1 "AC Sources and Onsite Power Distribution Systems 7 Day Operability Verification"
- STP O-087-1 "Borated Water Source 7 Day Operability Verification"

b. Findings

No findings of significance were identified.

## 1R23 Temporary Plant Modifications

### a. Inspection Scope

The inspectors reviewed temporary alteration 2-02-0016, which installed a cap on the drain line for one of the 2B emergency diesel generator air start system moisture separators, to assess: (1) the adequacy of the 10 CFR 50.59 evaluation; (2) that the installation was consistent with the modification documentation; (3) that drawings and procedures were updated as applicable; and (4) the adequacy of the post installation testing.

### b. Findings

No findings of significance were identified.

## 2. **RADIATION SAFETY**

Cornerstones: Occupational Radiation Safety

## 2PS2 Radioactive Material Processing and Transportation

### a. Inspection Scope

The inspector conducted an in-office review of the circumstances involving a shipment containing radioactive materials made on July 11, 2002, (Shipment No. 02-065) from Constellation Generation's Calvert Cliffs Nuclear Power Plant, to a waste processing vendor facility in Oak Ridge, Tennessee. The review included examination of the Constellation Generation's performance relative to the preparation of the shipment. The following documents were reviewed:

- Condition Report IR3-065-680
- Low Level Waste Manifest - Shipment No. 02-065
- Shipper outgoing radiation surveys - Initial (shipment 02-065)
- Vendor incoming receipt full vehicle survey - 02-2000, dated July 12, 2002
- Empty Sealand container survey - (DTKU 300144), dated July 17, 2002
- Vendor Report to Constellation Nuclear dated July 12, 2002, Subject: Manifest No. 02-065 from Calvert Cliffs Nuclear Power Plant

The review was against applicable requirements contained in 10 CFR 71, "Packaging and transportation of radioactive material," and 49 CFR 170-189, "Transportation," as applicable.

### b. Findings

#### Introduction

Green. Based on an in-office review, the inspector identified a finding having very low safety significance that resulted in a non-cited violation of 10 CFR 71.5, "Transportation of licensed material," which requires compliance with the applicable requirements of

Department of Transportation regulations 49 CFR, parts 170 through 189. Specifically, on July 11, 2002, Constellation Generation (Calvert Cliffs Nuclear Power Station) shipped a container of radioactive materials that was not prepared in accordance with 49 CFR 173.24, "General requirements for and packages," sufficient to preclude a substantial reduction in the effectiveness of the package, under conditions normally incident to transportation. Consequently, when received at the intended destination on July 12, 2002, a small hole (about 1 inch by 2 inches) was found in the side of the container, with a small portion of a metal object protruding through the hole.

### Description

On July 11, 2002, Constellation Generation shipped a Sealand box trailer (package) containing radioactive waste materials from its Calvert Cliffs facility to a vendor facility in Oak Ridge Tennessee for processing. The shipment (02-065) consisted primarily of structural steel with some bagged waste filters, and was shipped as exclusive use, low specific activity (LSA). The total weight of the package including its contents was 31,650 pounds. The maximum design weight for the package and contents is 44,800 pounds. The total activity was 5.9 millicuries of solid/metal mixed oxides. The material was to be braced during filling, however, the package was shipped from Calvert Cliffs Nuclear Power Station without bracing of the contents. A radiation and contamination survey, and inspection of the exterior of the package was performed by Constellation Generation prior to shipping.

On arrival at the vendor's processing facility on July 12, 2002, the shipment was inspected, and a receipt radiation and contamination survey was performed by the vendor (radiation survey no. 02-2000, dated July 12, 2002). The inspection identified an approximately one inch by two inch breach (hole) in the 20 foot Sealand container near the top of the right upper side of the container. A portion of a steel object was protruding about one-half inch through the side of the package. The receipt radiation and contamination surveys did not identify any elevated radiation levels or contamination on the exposed portion of the protruding metal, or on the exterior or interior of the package. There was no evidence that any of the contents of the package were lost. The vendor informed Constellation Generation of this condition on July 12, 2002.

### Analysis

Constellation Generation's failure to fill and limit the contents of a package of radioactive material to preclude a reduction in the effectiveness of the package, under conditions normally incident to transportation, in accordance with Department of Transportation requirement 49 CFR 173.24 (b)(2) is a performance deficiency since compliance with the requirement was reasonable and within Constellation Generation's ability to achieve. However, the occurrence did not represent an immediate safety concern since: (1) the package did not contain greater than a Type A quantity of radioactive material; (2) no detectable radiation or contamination was identified on the piece of metal protruding from the package, or on the exterior or interior of the package; (3) the condition existed for about a day while the package was in transport; and (4) the specific area of the breach was essentially inaccessible to members of the public. Further, the package weight was within its design specifications.

Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function; and was not the result of any willful violation of NRC requirements or Constellation Generation's procedures. This finding is more than minor in that the issue was associated with the Transportation Packaging attribute of the Public Radiation Safety cornerstone; and affected the objective of this cornerstone since failure to properly package radioactive materials for transportation in the public domain may compromise public health and safety relative to exposure to radioactive materials resulting from routine civilian nuclear reactor operation.

Constellation Generation's failure to prepare the contents of a package of radioactive material to preclude a substantial reduction in the effectiveness of the package, under conditions normally incident to transportation, was determined to have very low safety significance (Green) using the Public Radiation Safety Significance Determination Process. The finding involved radioactive material control relative to the transportation of radioactive materials. In this case, a package of radioactive material was breached during transit, but the package did not contain greater than a Type A quantity of radioactive material, and the breach did not result in the loss of any contents.

#### Enforcement

10 CFR 71.5 requires each licensee who transports licensed materials on public highways to comply with the requirements of the DOT regulations in 49 CFR Parts 170 through 189. 49 CFR 173.24(b)(2) requires the licensee to fill and limit the contents of a package of hazardous material such that, under conditions normally incident to transportation, there would be no substantial reduction in the effectiveness of the package.

On July 11, 2002, Constellation Generation's Calvert Cliff Nuclear Power Plant shipped radioactive waste material to a vendor processing facility in Oak Ridge, Tennessee; but failed to prepare the shipment (fill and limit the contents) as required by 49 CFR 173.24(b)(2) so that, under conditions normally incident to transportation, a reduction in the effectiveness if the packaging would not occur that could release hazardous material. Consequently, on arrival at the processing facility on July 12, 2002, it was determined that a piece of metal from inside the container of radioactive material, shifted during conditions normally incident to transportation, and created a breach that reduced the effectiveness of the package.

Constellation Generation documented this issue in its corrective action program as Issue Report IR3-065-680. They also initiated immediate actions to preclude recurrence, including stopping all radioactive material shipments from the station until corrective actions could be put into place. Since this violation of 10 CFR 71.5 is of very low safety significance and Constellation Generation entered the finding into its corrective action program, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the NRC Enforcement Policy issued May 1, 2000. (65FR25368). **(NCV 50-317; 50-318/02-05-01)**

The Office of Homeland Security (OHS) developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. NRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "NRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

a. Inspection Scope

On September 10, 2002, the NRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal Government declaration of threat level "orange." Subsequently, on September 24, 2002, the OHS downgraded the national security threat condition to "yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspector interviewed licensee personnel and security staff, observed the conduct of security operations and assessed licensee implementation of the threat level "orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

#### 4 OTHER ACTIVITIES

##### 40A1 Performance Indicator Verification

a. Inspection Scope

The inspectors reviewed performance indicator (PI) data for the below listed cornerstones and used NEI 99-02, "Regulatory Assessment Performance Indicator Guidance," to evaluate and verify individual PI accuracy and completeness. This inspection examined data and plant records from the second quarter of 2001 through the second quarter of 2002. The records reviewed included PI Data Summary Reports, Licensee Event Reports, operator narrative logs, and maintenance rule records.

- Emergency AC Power Unavailability, Units 1 and 2
- Residual Heat Removal Unavailability, Units 1 and 2
- Safety System Functional Failures, Units 1 and 2

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

.1 Elevated Reactor Vessel Internal Thimble Support Plate

a. Inspection Scope

The inspector reviewed the actions taken by the licensee during and subsequent to the 2002 Unit 1 Refueling outage relative to the reactor vessel internal thimble support plate (TSP). The TSP supports the thimbles for the in-core flux detectors. During the 2001 refueling outage, the Unit 2 TSP was unexpectedly found in an elevated position in that it was not resting on the upper guide structure. Prior to the Unit 2 restart in 2001, the licensee reviewed the issue and determined that it did not represent a condition that prevented restart. The inspector reviewed the licensee's root cause analysis, as documented in PD200100004, relative to the possible reason for the Unit 2 issue and the actions planned for and taken during the Unit 1 outage to determine if the same condition existed or if any additional information could be gained during the Unit 1 outage.

The inspector concluded that PD200100004 provided an appropriate root cause of elongation of the thimbles such that they were supporting the weight of the TSP. Further the inspector found that the actions taken to investigate the possibility of this situation at Unit 1 were appropriate, including inspection of the TSP during reactor disassembly and reassembly. The Unit 1 TSP was found to be cocked such that one side was not seated on the TSP. Measurement of the length of two thimbles determined that the thimbles had grown but not to the point that they were supporting the TSP. The testing also confirmed that the thimbles were not binding in the guide tubes as the TSP was lowered. The Unit 1 condition was believed to be due to TSP distortion that would be compensated for during vessel reassembly. Based on the information gained during the Unit 1 outage the root cause analysis was updated. PD200100004 remained open with action items to evaluate the Unit 2 TSP during the 2003 refueling outage to confirm the cause of the Unit 2 TSP elevation and repair the condition as necessary.

b. Findings

No findings of significance were identified.

.2 Air Operator Valve Program Implementation

a. Inspection Scope

The inspector reviewed the licensee's actions to address Issue Report IR3-041-465 which described a finding from a self-assessment that evaluated the status of the implementation of an air operated valve (AOV) program. In March 2000, the NRC issued Regulatory Issue Summary 2003, "Resolution of Generic Safety Issue 158: Performance of Safety-Related Power-Operated Valves Under Design Basis Conditions"

that described the NRC's decision to allow the industry to address design and performance concerns with AOVs. The specific concern documented in Issue Report IR3-041-465 was that although Calvert Cliffs was initially proactive in determining the requirements for an AOV program, they had made little progress in developing and implementing a site specific AOV program to determine whether risk significant AOVs would operate under design conditions.

The inspector found that the issue report served to provide additional management focus on the AOV program. As part of their scoping effort, the licensee reviewed 1400 AOVs on site and determined that 77 valves were Category I (risk-significant) and 188 were Category II (safety-related, non-risk significant). The licensee prioritized the valves according to risk and completed their design basis reviews of 46 of the 77 most risk-significant valves. The inspector reviewed a sample of the completed design basis reviews including the auxiliary feedwater system block valves and flow control valves. Diagnostic testing has been performed on 26 AOVs. The design basis reviews and testing of valves that has been completed thus far has show that each valve has sufficient design margin. No operability concerns have been identified.

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on October 30, 2002. The licensee acknowledged the findings presented. No proprietary information was identified.

Attachment 1

Supplementary Information

a. Key Points of Contact

- P. Katz, Vice President
- K. Neitmann, Plant General Manager
- M. Geckle, Director, Nuclear Regulatory Matters
- G. Gwiazdowski, Director, Nuclear Security/Emergency Planning
- D. Holm, Manager, Nuclear Operations
- M. Korsnick, Manager, Work Management
- J. Spina, Manager, Nuclear Maintenance
- R. Szocho, General Supervisor, Plant Engineering
- E. Roach, Radiation Safety Supervisor, Material Processing

b. List of Items Opened, Closed, and Discussed

Opened and Closed

50-317&318/02-05-01	NCV	Failure to fill and limit the contents of a shipment of radioactive material to a waste processing facility on July 11, 2002, in accordance with the requirements of DOT regulation, 49 CFR 173.24(b)(2), as specified by 10 CFR 71.5, "Transportation of Licensed Material."
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