

May 7, 2001

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

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT - NRC INSPECTION REPORT  
05000317/2001-002, 05000318/2001-002

Dear Mr. Cruse:

On March 31, 2001, 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 April 12, 2001, with Mr. Katz 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.

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 in 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 Nuclear Power Plant.

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Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000317/2001-002 and 05000318/2001-002

Attachment (1) Supplemental Information

cc w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

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

Report No: 05000317/2001-002;  
05000318/2001-002

Licensee: Calvert Cliffs Nuclear Power Plant, Inc. (CCNPPI)

Facility: Calvert Cliffs Nuclear Power Plant, Units 1 and 2

Location: 1650 Calvert Cliffs Parkway  
Lusby, MD 20657-4702

Dates: February 11 - March 31, 2001

Inspectors: David Beaulieu, Senior Resident Inspector  
Fred Bower, Resident Inspector  
Keith Young, Reactor Engineer  
Ronald Nimitz, Senior Health Physicist

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

## SUMMARY OF FINDINGS

IR 05000317/2001-002, 05000318/2001-002, on 02/11 -03/31/2001, Calvert Cliffs Nuclear Power Plant, Inc.; Calvert Cliffs Nuclear Power Plant, Units 1 & 2. Occupational Radiation Safety.

The inspection was conducted by resident inspectors, a regional specialist inspector, and a regional senior health physicist. The inspection identified one Green finding which was 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 are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

### A. Inspector Identified Findings

Cornerstone: Occupational Radiation Safety

GREEN. The inspector identified a Non-cited Violation of the alternate access control requirements established in accordance with 10 CFR 20.1601(c). Specifically, the High Radiation Area access door on the 10-foot elevation of the Unit 2 Containment (providing access to the area under the reactor vessel) was chained, but not locked.

This finding was considered to be of very low safety significance because, although the door was not locked, this condition did not result in an over-exposure, did not create a substantial potential for such an exposure, and did not compromise the ability of the licensee to assess dose to its workers. The licensee determined that the root cause of this issue was human performance - inattention to detail. (Section 2OS1)

## Report Details

Unit 1 began the inspection period at 100 percent power where it remained until power was reduced to 85 percent on March 9, 2001, for main turbine valve testing and planned maintenance. Unit 1 was returned to full power on March 10 and operated at or near 100 percent power for the remainder of the inspection period.

Unit 2 operated at or near 100 percent power from the beginning of the inspection period until a coast down began on February 28, 2001. Unit 2 was shutdown for a refueling outage on March 16, 2001.

### **1. REACTOR SAFETY**

Cornerstones: Initiating Events, Mitigating Systems and Barrier Integrity

#### 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 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 performed partial system walkdowns on the following systems:

- 22 Saltwater System was inspected on March 21, 2001, while the 21 saltwater system was out of service for maintenance.

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

- Operating Instruction (OI) 29, Saltwater System

###### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### .1 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 1 and Unit 2 - Control Room
- Unit 1 and Unit 2 - Intake Structure
- Unit 1 and Unit 2 - Areas of the turbine building (45' and 27')
- Unit 1 27' Switchgear Room
- Unit 1 Containment Purge Fan Room
- 1A Emergency Diesel Generator (EDG) and 0C (Station Blackout) EDG Buildings

b. Findings

No findings of significance were identified.

.2 Fire Drill Observations

a. Inspection Scope

On February 15, 2001, the inspectors observed a fire brigade drill which simulated an electrical fire in the Unit 2, 27 foot elevation motor control center area. The inspectors observed the fire brigade's use of protective clothing and fire fighting equipment, verified that fire fighting pre-plan strategies were utilized, and verified that the fire brigade leader's directions were thorough, clear, and effective. Additionally, the inspectors assessed the fire brigade's timeliness in suppressing the simulated fire.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

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 system functional failures of the last two years. The following SSCs were reviewed:

- Primary Containment Heating and Ventilation: The licensee has classified the Unit 1 system as (a)(1) primarily due to unavailability hours incurred as a result of more frequent than expected cleaning of the Service Water Heat Exchangers.

The inspectors evaluated the acceptability of the licensee's (a)(1) - Evaluation, Corrective Action and Goal Setting Plan, associated with Issue Report No. IR3-026-604.

- Service Water: The unavailability hours for the 13 Service Water (SRW) Pump exceeded the established performance criteria. The inspectors evaluated the acceptability of the licensee's (a)(1) - Evaluation, Corrective Action and Goal Setting Plan, associated with Issue Report No. IR3-034-432. The system was initially placed in (a)(1) when the performance criterion was exceeded, but subsequently restored to (a)(2). System engineering personnel determined that the unavailability hours were primarily due to troubleshooting of a loose part found downstream of the 13 SRW pump discharge check valve. This troubleshooting revealed that the loose part was not from the 13 SRW pump or its discharge check valve. The inspectors evaluated the licensee's decision to not count the troubleshooting time against the performance criteria.
- Component Cooling Water: The unavailability hours for the 21 Component Cooling Water (CCW) header exceeded the established performance criteria. The inspectors evaluated the acceptability of the licensee's (a)(1) - Evaluation, Corrective Action and Goal Setting Plan, associated with Issue Report No. IR3-034-433. The system was initially placed in (a)(1) when the performance criterion was exceeded, but subsequently restored to (a)(2). System engineering personnel determined that the unavailability hours were primarily due to hours expended to replace a spool piece with a leaking branch connection and the heat exchanger being isolated in conjunction with the cleaning of the 21A SRW heat exchanger. The spool piece has been replaced with an improved design which is less likely to experience a leaking branch connection. The chemical treatment of the saltwater system has been changed to reduce the frequency of heat exchanger cleaning. The inspector evaluated the licensee's decision to establish an alternative unavailability hour goal and return the system to (a)(2) status.

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 17.
- Maintenance Rule System Level Indicator Summary, 4<sup>th</sup> Quarter 2000.
- Maintenance Rule Indicator Report - (a)(1) SSCs, February 2001.

b. Findings

No findings of significance were identified.



### 1R13 Maintenance Risk Assessments and Emergent Work Evaluation

#### a. Inspection Scope

For the selected maintenance activities, the inspectors verified: (1) risk assessments were performed in accordance with the Calvert Cliffs Maintenance Rule Risk Assessment Guideline; (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.

On February 13, 2001, the licensee risk assessed the following equipment being out of service simultaneously for a 24-hour period: 22 Closed Cooling Water heat exchanger, 22 Shutdown Cooling heat exchanger, 22 Containment Spray pump, 22 Saltwater Air Compressor, 23 High Pressure Safety Injection pump, and 22 Low Pressure Safety Injection pump. The inspectors evaluated the licensee's risk computer output which inaccurately showed a decrease in both core damage frequency and large early release frequency when all of the above listed equipment was removed from service. The inspectors addressed this observation with the responsible Calvert Cliffs staff and verified that this risk computer processing anomaly was appropriately documented in Issue Report IR3-052-270.

#### b. Findings

No findings of significance were identified.

### 1R14 Personnel Performance During Non-Routine Plant Evolutions and Events

#### a. Inspection Scope

The inspectors reviewed operator performance during the conduct of surveillance test procedure (STP) O-4A-2, "A" Train Integrated Engineered Safety Features Test, on March 18, 2001. Due to the complexity, plant impact, and infrequent performance of this test, it was controlled in accordance with administrative procedure NO-1-102, Conduct of Infrequent Tests or Evolutions (ITOE). The inspectors observed the pre-evolutionary brief conducted by the ITOE Activity Manager required by NO-1-102. The inspectors observed the integrated test briefing, communications checks, and dry-runs conducted in preparation for the test. The inspectors also observed the conduct of the test from the main control room.

#### b. Findings

No findings of significance were identified.

1R15 Operability Evaluationsa. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems 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:

- Issue Report (IR) 3-012-212      Nos. 12 and 22 High Pressure Safety Injection Pump Under-Voltage Load Shed Testing.
- PES Memo 0201\0212-300      Operability of No. 11 Containment Spray Header Isolation Valve, 1-SI-4150-CV (February 12, 2001).
- PDSU Memo DMLS DE05301      Operability of No. 11 Low Pressure Safety Injection (LPSI) 4160 Volt Motor Lead Splice Using 480 Volt Splice Materials.
- IR3-034-314      Operability Evaluation No. 99-011 did not consider the potential for Unit 1 and 2 containment tendons' wire breakage at the time of a loss of coolant accident.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testinga. 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) equipment was returned to the status required to perform its safety function. The following maintenance order (MO) activities were reviewed:

- MO2199802369      Replacement of Motor Control Center (MCC) 214R Breaker (2BKR53-21453) Bucket for Instrument Air Isolation Valve; Stroke timing of valve, 2-IA-2080-MOV, and indication verification in accordance with procedure STP-O-66G-2, Miscellaneous Cold Shutdown Valve Operability Test.

- MO2199901547 Replacement of 21 Saltwater Header Piping; Stroking of valve 2-CV-5178 and leakage tests conducted when returning the system to service in accordance with Operating Instruction OI-29, Saltwater System.
- MO2199800457 Replacement of 21 Steam Generator Pressure Engineered Safety Feature Actuation System (ESFAS) channel ZD sensor modules; Verification of operation of ESFAS ZD Steam Generator Isolation Signal (SGIS) 21 module in accordance with procedure STP-M-510DL-2.

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors reviewed the licensee's pre-outage planning to verify that risk, industry experience, and previous site specific problems were considered. Selected portions of the following procedures and documents were reviewed:

- Nuclear Operations (NO)-1-103, Conduct of Lower Mode Operations. This procedure provides instructions and guidance for: outage planning, scheduling, and control; contingency planning for higher risk evolutions; reduced inventory operations; and, electrical system reliability.
- NO-1-207, Nuclear Operations Shift Turnover. In conjunction with NO-1-103, this procedure provides controls for the minimum essential equipment during lower modes of operation.
- NO-1-117, Integrated Risk Management. This procedure provides instructions and guidance for assessing and classifying the risk significance of work considering the categories of: radiological safety; industrial safety; nuclear safety; environmental safety; and, corporate safety.
- Shutdown Safety Summary Schedule.
- Detailed Outage Schedule.
- Major Job Path Summary Schedules for Primary, Vital, and Secondary Systems.
- Lists of outage activities identified as high and medium risk work.
- 2000 Refueling Outage Performance Report. This report evaluated the performance during the 2000 outage and provided draft recommendations for improvement.

The inspectors observed the Unit 2 reactor shutdown on March 16, 2001. In addition, a detailed review of reactor coolant system (RCS) temperature data was performed to verify that the RCS cooldown rate did not exceed technical specification limits. The inspectors observed reduced inventory and mid-loop operations on March 22 and 23, 2001, and confirmed that the plant configuration was in accordance with commitments in response to Generic Letter 88-17, Loss of Decay Heat Removal.

The inspectors observed, via a station for the radiation protection (RP) technician's remote coverage (audio and video system capability), the installation of nozzle dams in the 22 steam generator and the removal of the reactor vessel head. The inspectors were able to observe and listen to coverage provided by the RP technicians, implementation of RP safety and ALARA practices, and general work practices.

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 witnessed:

- STP-O-5A-2 Auxiliary Feedwater System Quarterly Surveillance Test.
- STP-O-65L-1 11 and 12 Containment Spray Header Valve Quarterly Operability Test.
- STP-O-66M-2 Cold Shutdown Operability Test of Shutdown Cooling Return Isolation Valves 2-SI-651-MOV and 2-SI-652-MOV.
- STP-O-66D-2 Component Cooling Containment Isolation Valve Operability Test (Modes 5 & 6).

b. Findings

No findings of significance were identified.

## 2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety

### 2OS1 Access Control to Radiologically Significant Areas

#### a. Inspection Scope

The inspector reviewed the following documents and conducted the following activities to determine the effectiveness of access controls to radiologically significant areas:

- Five locked High Radiation Area access points were physically inspected to determine if access controls were sufficient to preclude unauthorized entry.
- Access controls to licensee defined Very High Radiation Areas were reviewed to evaluate their adequacy. In addition, one area posted as a Very High Radiation Area in the Unit 2 containment (10' elevation) was physically challenged.
- Independent radiation measurements were made to verify that areas expected to exhibit radiation levels in excess of 100 mR/hr, were posted and controlled as High Radiation Areas.
- The use of the Radiation Protection Central Monitoring Station, to oversee ongoing work activities in High Radiation Areas was reviewed.
- Procedure changes involving access to High and Very High Radiation Areas were reviewed to ensure no degradation in access controls had occurred.
- The following work activities, conducted in posted High Radiation Areas, were directly observed to verify the adequacy and proper implementation of procedural requirements and prescribed radiological controls:
  - Removal of the fuel transfer tube blank flange in the Unit 2 reactor cavity, Special Work Permit (SWP) No. 2001-2311.
  - Cutting of interferences in the Unit 2 reactor coolant pump bay, SWP No. 2001-2010.
  - Leak rate testing activities on the 45' elevation of the Unit 2 containment, SWP No. 2001-2001

For the above tasks, the conformance with applicable High Radiation Area access controls and radiation work permit requirements was reviewed, as were: proper classification of the work in terms of radiological risk significance; use of appropriate methodologies to control the spread of contamination; conduct of appropriate radiological briefings; control and oversight of work; and conduct and documentation of applicable radiological surveys (e.g., contamination, radiation, and airborne radioactivity).

- The installation of steam generator nozzle dams (SWP No. 2001-2408) was reviewed and discussed. Radiation doses determined by external and internal

radiation dosimetry were reviewed, including evaluations of potential radioactive material intakes, to determine the effectiveness of radiological controls.

- Radiation worker and radiation protection personnel performance during activities was reviewed to ascertain worker knowledge and appropriate implementation of radiological controls.
- Observations were made of management oversight board (MOB) review of planning and work controls for replacement of the Unit 2 reactor vessel incore instrument (ICI) flanges (SWP No. 2001-2306).
- Selected Issue Reports and self-assessments were reviewed to verify proper implementation of the problem identification and resolution program (e.g., IR3-030-911)

The activities reviewed were inspected against requirements contained in 10 CFR 20, Technical Specifications, applicable station procedures, and the following documents:

- 2001 Containment Coverage Plan
- Unit 2 2001 Refueling Outage (RFO) Radiation Safety Plan
- Unit 2 2001 Radiation Safety Section Outage Plan
- Steam Generator Primary Maintenance Coverage Plan

b. Findings

On March 20, 2001, the inspector identified an unlocked access point to a High Radiation Area on the 10-foot level of Unit 2 containment. The access led to an area under the Unit 2 reactor vessel, that exhibited whole body radiation dose rates greater than one rem per hour (1 rem/hr). To enter this area, personnel would need to pass through an outer unlocked shield door and a second (inner) door which was not locked. The shielded outer access door was chained, however, the door's lock was not properly attached to the chain. The outer door's chain was attached to itself by two tie-wraps which also secured a Very High Radiation Area warning sign to the chain. The inner door was secured by only a cotter pin in the door's handwheel. The tie-wraps and cotter pin were considered by the inspector of not capable of preventing unauthorized personnel access to the under vessel area. Upon identification, the licensee initiated immediate continuous direct surveillance of the outer access point, to prevent unauthorized entry and subsequently properly secured the access point with a lock. The licensee identified the root cause of this matter to inattention to detail by personnel when securing the lock and chain, and promptly initiated action to re-emphasize management expectations to personnel.

The failure to properly lock the access door to the High Radiation Area, which exhibits radiation dose rates greater than one rem/hr whole body, is contrary to procedure RSP1-104, Rev. 14, "Area Posting and Barricading," which requires, in Section 6.5, that a lock be installed and a physical barrier be provided to prevent unauthorized entrance to such an area. The inspector noted that the procedure provided alternative access controls to High Radiation Areas, previously contained in Technical Specifications, in lieu of the controls specified in 10 CFR 20.1601. These alternative controls were

relocated to plant procedures and approved by the NRC, in a letter dated August 26, 1996. Accordingly, the failure to adhere to Procedure RSP1-104 constitutes a violation of 10 CFR20.1601(c), in that, the licensee failed to adhere to its alternate methods for controlling access to High Radiation Areas. This violation is being treated as a Non-cited Violation (NCV), consistent with Section VI.A of the Enforcement Policy, issued May 1, 2000 (65 FR 25368). **(NCV 05000318/2001-002-001)** The licensee entered this finding into the Corrective Action Program under IR3-051-126.

No personnel were known to have entered the area during the time the area was unsecured. Consequently, no unplanned radiation exposures are known to have occurred. Notwithstanding the absence of any personnel entry or exposure, this issue is more than minor. If left uncorrected, the same issue could become a more significant safety concern. Specifically, the failure of radiation protection personnel to follow prescribed radiation protection procedures for access controls to High Radiation Areas could result in more severe adverse radiological consequences for workers. During power operations, this same area is posted as a Very High Radiation Area. However, no unauthorized access can be gained to the area during power operations due to continuous escort coverage by radiation protection personnel. Consequently, no violation of 10 CFR 20.1602 was identified.

This issue was determined to affect the Occupational Radiation Safety Cornerstone and was screened via the Occupational Radiation Safety Significance Determination Process and determined to be of very low safety significance (Green) because: 1) the issue was not an ALARA finding; 2) there was no overexposure of a worker; 3) there was no substantial potential for such an exposure since no known entry had occurred and personnel were provided with alarming dosimeters; and 4) the licensee's ability to assess dose to workers was not compromised.

The inspector also identified that this observation constitutes a Performance Indicator (PI) occurrence consistent with Nuclear Energy Institute (NEI) 99-02, Rev. 0, Section 2.5, Occupational Radiation Safety Cornerstone. Section 2.5 of NEI 99-02 identifies a failure to secure an area against unauthorized access as an example of an occurrence that would be counted against the Technical Specification High Radiation Area (>1 rem per hour) Occurrence data reporting element. The licensee confirmed that this condition will be included as a PI occurrence.

## 2OS2 ALARA Planning and Controls

### a. Inspection Scope

The inspector reviewed the adequacy and the effectiveness of the program to reduce occupational radiation exposure to as low as is reasonably achievable (ALARA). The following matters were reviewed against 10 CFR 20, applicable NRC Regulatory Guides, and licensee procedures:

- Plant collective exposure history, current exposure trends, two and three-year rolling average collective exposures to assess current performance and exposure challenges.

- The licensee's understanding of plant radiation source terms, its source term control strategy, and prioritization and implementation of source term reduction initiatives.
- The assumptions and bases for the dose estimates used by the licensee for the 2001 Unit 2 outage. The inspector compared estimated versus actual doses to determine the adequacy and effectiveness of its estimation methods and reviewed the exposure tracking system to determine whether the level of exposure tracking detail is sufficient to support ongoing monitoring and intervention, if the rate of exposure accumulation unexpectedly increases.
- The following work activities were reviewed, including ALARA plans and interventions to minimize worker radiation exposure:
  - Removal of the fuel transfer tube blank flange in the Unit 2 reactor cavity, SWP No. 2001-2311.
  - Cutting of interferences in the Unit 2 reactor coolant pump bay, SWP No. 2001-2010.
  - Leak rate testing activities on the 45' elevation of the Unit 2 containment, SWP No. 2001-2001.
  - Installation and removal of steam generator nozzle dams, SWP No 2001-2408.
  - Replacement of Unit 2 reactor vessel incore instrument (ICI) flanges, SWP No. 2001-2306.

The following documentation was reviewed:

- 2001 Water Level Plan.
- Unit 2 2001 RFO Refuel Path Radiation Safety Plan.
- March 7, 2001, ALARA Committee Meeting Minutes.
- Primary Systems Script - 2001.
- Radiation Safety Section 2000 ALARA Report.
- Radiation Safety Section 2001 ALARA Pre-Outage Report.
- 2001 Non-outage dose estimates.
- Daily Dose Status Reports.
- Unit 2 Radiation Safety Outage Plan.
- Source Term Tracking and Trending data.
- Radiation Safety Section Outage Plan.



b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspector reviewed elements of the radiation monitoring instrumentation calibration program to evaluate the adequacy and effectiveness of the program. Included in the review were licensee actions to evaluate previous radiological survey data for portable survey instruments failing source checks.

The calibration records, checking, and operation, as appropriate, of the following instrumentation were reviewed:

- Electronic dosimetry worn by personnel (Serial Nos. 6377, 6404, 6840, 6236, 6449, and 7363).
- EC-4 portable area monitor - Serial No. 718.
- AMS-4 SN. Nos. 7-31(1324) and 6087-32(6087-20).
- Proportional Counter No. 84-2660-15/15.
- Teletector Serial No. 37382.
- Containment High Range Radiation Monitor - Detectors 2RE-5317A and B Serial Nos. Y5211 and Y1917.

In addition, the inspector selectively verified that both staged and in-use portable radiation monitoring instrumentation was calibrated and source checked, as appropriate.

The review was against applicable licensee procedures and industry standards.

b. Findings

No findings of significance were identified.

**4 OTHER ACTIVITIES**

4OA1 Performance Indicator Verification

Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspector reviewed implementation of the licensee's Occupational Exposure Control Effectiveness Performance Indicator (PI) Program. Specifically, the inspector reviewed corrective action program records for occurrences involving high radiation areas, very high radiation areas, and unplanned personnel exposures since the last inspection in this area. The inspector reviewed the licensee's data against the applicable criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance

Indicator Guideline, Revision 0, to verify that all occurrences that met the NEI criteria were recognized and identified as Performance Indicators.

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 led by Mr. P. Katz at the conclusion of the inspection on April 12, 2001. The licensee acknowledged the findings presented.

ATTACHMENT 1PARTIAL LIST OF PERSONS CONTACTED

C. Cruse, Vice President  
 D. Holm, Superintendent, Nuclear Operations  
 P. Katz, Plant General Manager  
 B. Montgomery, General Supervisor, Plant Engineering  
 M. Navin, Superintendent, Technical Support  
 K. Nietmann, Manager, Nuclear Performance Assessment Department  
 T. Pritchett, Manager, Nuclear Engineering Department  
 J. Spina, Superintendent, Nuclear Maintenance  
 P. Furio, Director (Acting), Nuclear Regulatory Matters  
 J. Guidotti, Health Physicist  
 M. Haney, Radiation Protection Supervisor  
 S. Sanders, General Supervisor-Radiation Safety  
 L. Smialek, Radiation Protection Manager  
 J. York, Assistant General Radiation Supervisor  
 R. Wyvill, ALARA Supervisor

ITEMS OPENED AND CLOSEDOpened & Closed

|                       |     |  |
|-----------------------|-----|--|
| 05000318/2001-002-001 | NCV | Radiation protection personnel did not follow alternate NRC approved High Radiation Area access control requirements, in accordance with 10 CFR 20.1601(c) |
|-----------------------|-----|--|

LIST OF ACRONYMS USED

|        |  |
|--------|--|
| ALARA  | As Low As is Reasonably Achievable           |
| CCNPPI | Calvert Cliffs Nuclear Power Plant, Inc.     |
| CCW    | Component Cooling Water                      |
| CFR    | Code of Federal Regulations                  |
| EDG    | Emergency Diesel Generator                   |
| ESFAS  | Engineered Safety Feature Actuation System   |
| HRA    | High Radiation Area                          |
| HX     | Heat Exchanger                               |
| ICI    | In Core Instrument                           |
| IR     | NRC Inspection Report or CCNPPI Issue Report |
| ITOE   | Infrequent Tests or Evolutions               |
| LPSI   | Low Pressure Safety Injection                |
| MCC    | Motor Control Center                         |
| MO     | Maintenance Order                            |
| MOB    | Management Oversight Board                   |
| NCV    | Non-cited Violation                          |
| NEI    | Nuclear Energy Institute                     |

|      |                                    |
|------|------------------------------------|
| NO   | Nuclear Operations                 |
| NRC  | Nuclear Regulatory Commission      |
| OI   | Operating Instruction              |
| PARS | Publicly Available Records         |
| PI   | Performance Indicator              |
| RCS  | Reactor Coolant System             |
| RFO  | Refueling Outage                   |
| RP   | Radiation Protection               |
| RWP  | Radiation Work Permit              |
| SDP  | Significance Determination Process |
| SGIS | Steam Generator Isolation System   |
| SRW  | Service Water                      |
| SSC  | Structure, System and Component    |
| STP  | Surveillance Test Procedure        |
| SWP  | Special Work Permit                |
| TS   | Technical Specifications           |