December 20, 2000

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

SUBJECT: NRC's CALVERT CLIFFS NUCLEAR POWER PLANT INSPECTION REPORT 05000317/2000-009, 05000318/2000-009

Dear Mr. Cruse:

On November 11, 2000, 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 November 21, 2000, 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 it's 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 Enforcement Policy, issued on May 1, 2000 (65 FR 25368). 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.: 05000317 and 05000318
License Nos.: DPR-53 and DPR-69

Enclosures: Inspection Report 05000317/2000-009, 05000318/2000-009

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REGION I

Docket Nos:	05000317, 05000318
License Nos.:	DPR-53, DPR-69
Report No:	05000317/2000-009, 05000318/2000-009
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:	October 1 - November 11, 2000
Inspectors:	David Beaulieu, Senior Resident Inspector Fred Bower, Resident Inspector Tim Hoeg, Resident Inspector Ronald Nimitz, Senior Health Physicist Jason Jang, Senior Radiation Specialist
Approved by:	Michele G. Evans, Chief Projects Branch 1 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000317-00-09, IR05000318-00-09, on 10/01-11/11/2000, Calvert Cliffs Nuclear Plant, Inc.; Calvert Cliffs Nuclear Power Plant, Units 1 & 2. Event follow up.

The inspection was conducted by resident inspectors, a regional radiation specialist, and a regional senior health physicist. The inspection identified one Green finding which was a non-cited violation. The significance of most/ all findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609 “Significance Determination Process” (See Attachment 1). Findings for which the Significance Determination Process (SDP) does not apply are indicated by “no color” or by the severity level of the applicable violation.

Cornerstone: Occupational Radiation Safety

> Green. The inspector identified a Non-Cited Violation for failure to implement procedures during transfer of externally contaminated bags of waste from the Unit 1 reactor cavity to the 45' elevation of the spent fuel building. Additionally, routine surveys were not properly documented.
>
> This finding was of very low safety significance because the evolution 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. (Section 4OA3)

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ATTACHMENT

Report Details

SUMMARY OF PLANT STATUS

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

1. REACTOR SAFETY

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

1R04 Equipment Alignment

.1 Partial Walkdown

a. Inspection Scope

The inspectors conducted equipment alignment and partial system walkdowns to evaluate the operability of selected redundant trains or backup systems, while the other redundant train or system was inoperable or out of service. Walkdowns were conducted on equipment recently realigned following surveillance testing activities. The walkdowns included reviews of system operating instructions and piping and instrumentation diagrams to verify correct system and component lineups in order to identify discrepancies which could affect operability of the system. The inspectors performed partial system walkdowns on the following systems:

- Unit 1 Component Cooling Water System
- 1A Emergency Diesel Generator

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

- OI-16, Component Cooling System
- OI-21A, 1A Emergency Diesel Generator

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of a risk-important mitigating system to identify any discrepancies between the existing equipment lineup and the required lineup. During the walkdown, the procedures and drawings 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. Unresolved maintenance work requests on the system were reviewed for any deficiency that could affect the ability of the system to perform its function. Unresolved design issues, including temporary

modifications, operator workarounds, and items tracked by plant engineering were also reviewed. The inspectors performed a complete system walkdown on the following systems:

- Unit 1 Closed Cooling Water System
- Unit 2 Auxiliary Feedwater System

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 Component Cooling Water Room
- Unit 2 27' Switchgear Room
- Unit 2 Cable Spreading Room
- 1A Emergency Diesel Generator

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspector observed the performance of data collection activities for selected Unit 1 service water (SRW) heat exchangers under engineering test procedure 98-041R, “12A and 12B SRW Heat Exchangers Thermal Performance Test.” The inspector reviewed the statistical evaluation of the data collected and engineering service package (ESP) No. ES200000865 that documented the calculation of flow resistance due to heat exchanger fouling. ESP No. ES200000865 concluded that both heat exchangers were capable of performing their design accident functions at saltwater inlet temperatures up to and including 90°F; therefore, the acceptance criteria were satisfied with consideration for instrument inaccuracies and measurement uncertainties.

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

- 120 Volt Vital AC
- Electrical 4 kV Transformers and Buses
- Reactor Coolant System Pressurizer Safety Valves

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

- Station Procedure MN-1-112, Managing System Performance
- Maintenance Rule Scoping Document, Revision 15
- Maintenance Rule Indicator Report, October 2000

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

For the selected maintenance orders (MOs) listed below, the inspectors verified: (1) risk assessments were performed in accordance with 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.

- MO No. 1199705100, 12 Salt Water Pump Breaker Replacement.
- MO No. 1199805475, 12 Boric Acid Storage Gravity Feed Valve (1-MOV-508) Motor Operator Repairs.
- MO No. 0199900141, OC Emergency Diesel Generator Preventive Maintenance.

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 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 2000-05, Temperature Differences Between RCS Cold Legs.
- Operability Determination 2000-06, Replacement 4KV Breakers for 23 AFW Pump and 23 Service Water Pump.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors evaluated selected 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. The following operator workaround was reviewed:

- MO 1200002446 Valve 1-CVC-201P-CV Back Pressure Regulating Valve Indicates Full Shut with 37 gpm Letdown Flow

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed Engineering Service Package No. 199600580 associated with the removal and replacement of the 12 Salt Water Pump 4KV breaker. Calvert Cliffs Nuclear Plant Inc. was undergoing a 4KV breaker upgrade program in which existing GE magna-blast type breakers were replaced with newly designed ABB vacuum type breakers. The modification was being implemented to extend breaker life and improve breaker reliability. The inspector reviewed the following attributes associated with the modification: (1) the design bases, licensing bases, and performance capability of the component to ensure that it had not been degraded as a result of the modification; (2) the modification installation methodology to ensure that it did not place the reactor plant in any unsafe conditions; and (3) the adequacy of post-installation testing to verify the modification functioned, as expected.

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 order (MO) activities were reviewed:

MO No. 1199705100, 12 Salt Water Pump Breaker Control Circuit Maintenance.
MO No. 1200004264, 12 Containment Spray Pump Breaker Inspection.
MO No. 1200003859, Steam Generator Isolation Signal “A” Actuation Module.

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-1, Auxiliary Feed Water System Quarterly Operability Test.
STP-M-212C-1, Unit 1, Channel "C" Reactor Protective System Functional Test.
STP-O-07B, 12 Containment Spray Pump Operability Test.

b. Findings

No findings of significance were identified.

1EP1 Exercise Evaluation

a. Inspection Scope

The inspectors observed simulator activities during an emergency planning drill conducted on October 6, 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 licensee's corrective action system for the drill identified deficiencies.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety and Public 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, as appropriate.

- Access controls to licensee defined Very High Radiation Areas were reviewed to evaluate their adequacy.
- The inspector made independent radiation measurements in radiologically controlled areas (RCAs) to verify that areas expected to exhibit radiation levels in excess of 100 mR/hr, were posted and controlled as High Radiation Areas or locked, as appropriate.
- Procedure NO-1-110, Rev. 4, "Calvert Cliffs Key and Lock Control," was reviewed to determine if defined controls were properly implemented.

The inspector reviewed the following issue reports to verify proper implementation of the problem identification and resolution program.

- Issue Report IR3-052-561
- Issue Report IR3-057-791 (RCAR PD200000001)
- Issue Report No. RCAR IR 199901310
- Issue Report IR3-011-089
- Issue Report IR3-006-285

The inspector reviewed documentation associated with an October 5, 2000, personnel entry into the Unit 2 reactor containment, a locked High Radiation Area, to repair the 21B safety injection tank (SIT) level transmitter. The inspector reviewed conformance with applicable High Radiation Area access controls and radiation work permit requirements. Radiological surveys, briefing forms, and electronic dosimeter exposure results (for two individuals) were reviewed. Neutron and noble gas exposure estimates were also reviewed. Electronic dosimeter calibration sheets were reviewed to ensure proper use of calibrated electronic dosimetry.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning and Controls

a. Inspection Scope

The inspector selectively reviewed the adequacy and the effectiveness of the licensee's program to reduce occupational radiation exposure to as low as is reasonably achievable (ALARA). The following matters were reviewed:

- The inspector reviewed plant collective exposure history, current exposure trends, ongoing and planned activities, and three-year rolling average collective exposures to assess current performance and exposure challenges.
- The inspector reviewed specific source term measurements and historical trends, and current status of tracked source terms to assess current trends.
- The inspector reviewed the licensee's understanding of plant source terms, its source term control strategy, and prioritization and implementation of source term reduction initiatives to evaluate exposure reduction initiatives.
- The inspector reviewed the assumptions and bases for the dose estimates used by the licensee for the 2000 Unit 1 outage. The inspector reviewed estimated

versus actual doses to determine the adequacy and effectiveness of dose estimation methods.

- The inspector reviewed the licensee's exposure tracking system to determine whether the level of exposure tracking detail was sufficient to support ongoing monitoring and intervention, if the rate of exposure accumulation unexpectedly increases.

The inspector reviewed the following documents:

- First Quarter 2000 ALARA Self-Assessment
- Second Quarter 2000 ALARA Self-Assessment
- Assessment of Unit 1 2000 Refueling Outage Primary Chemistry Shut Down and Start Up Issues
- 1999 Annual ALARA Report
- Unit 1 Radiation Safety Outage Plan, Pre-outage Report, and Outage Report
- Year 2000 Dose Reduction Initiatives
- Departmental Dose Reduction Initiatives
- Source Term Tracking and Trending data
- Unit 1 2000 Outage Specific Work Permit Dose Status

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

The inspector selectively reviewed elements of the radiation monitoring instrumentation calibration program to evaluate the adequacy and effectiveness of the program. The following associated activities were reviewed:

- calibration, checking, and operation of the standup whole body counter.
- calibration of lapel air samplers.
- calibration of the spent fuel pool area radiation monitor No. 0-RI-7024, performed on May 31, 2000.

The following documentation was reviewed.

- Procedure ITEC 656, Calibration of the Buck Sample Pump, Rev.0
- Procedure ITEC-607, Calibration of the Eberline EC4-X Portable Area Monitor
- Procedure ITEC -689, Calibration of SAIC RADECO Variable Flow Grab Air Samplers H-809VI and H-809C, Rev.1
- Procedure ITEC -360, Calibration Check of F&J Speciality Products, Inc. Digital Flow Calibrator Model D 812, Rev. 0
- Procedure RSP-3-214, Canberra Whole Body Counter Operation, Rev.0
- Whole body Counter Calibration Report dated March 7, 2000
- Updated Final Safety Analysis Report Section 11.2, Radiation Protection and Monitoring

- Procedure FTI-114, Functional Test Radiation Monitoring Drawer Calibration/Calibration Check, Rev.10 (May 31, 2000 and Master calibration data sheets)
- Standard HPS N13.42-1997, Internal Dosimetry fort Mixed Fission Products
- Standard HPS N13.30-1996, Performance Criteria for Radiobioassay
- ANSI N323A, 1997, "American National Standard Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments"
- Audit 99-03, Measuring and Test Equipment Program, dated March 17, 1999

b. Findings

No findings of significance were identified.

2PS2 Radioactive Material Processing and Transportation

a. Inspection Scope

The inspector reviewed documentation to ensure that the licensee met the requirements specified in their program for the unrestricted release of material from the Radiologically Controlled Area (RCA). The review compared the licensee's existing program against criteria contained in 10CFR20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, and Health Position Data Base Positions 221 and 250. The following information was reviewed:

- Methods used for control, survey, and release of material from the RCA.
- Most recent calibration results for radiation monitoring instrumentation, including the alarm setting, response to the alarm, and the sensitivity.
- Licensee criteria for the survey and release of potentially contaminated material; and associated procedures and records to verify for the lower limits of detection.

b. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program

a. Inspection Scope

The inspector reviewed the following documents and performed the following activities to verify that the licensee met the requirements specified in their Improved Technical Specification/Offsite Dose Calculation Manual (ITS/ODCM):

- 1999 Annual Radiological Environmental Operating Report, required by Section 5.6.2 of the ITS, including projected public doses (required by 40CFR190) around the interim spent resin storage area.

- Most recent ODCM (Revision 4, February 7, 2000) for the Radiological Environmental Monitoring Program (REMP) portion and technical justifications for ODCM (REMP portion) changes, including sampling locations.

- Semi-Annual calibration results (the second half of 1999 and the first half of 2000) of the meteorological monitoring instruments for wind direction, wind speed, and temperature.

- Operability of the meteorological monitoring instruments.

- Calibration results for all ITS/ODCM required air samplers

- Implementation of the Quality Assurance/Quality Control Program of the contract laboratories, including the inter-laboratory comparison program, required by Section 3/4.12.3 of the ODCM and the corrective actions for any deficiencies.

- Implementation of the routine environmental thermoluminescent dosimeters (TLDs) program.

- Issue Report (IR) Nos. IR3-005-407, IR3-023-032, IR2-021-115, and IR3-054-972.

- IR-055-419, including (1) investigation results; (2) radiological measurement results; and (3) projected public dose calculation results.

- Most recent Quality Assurance audit for the REMP/ODCM implementation.

- Land Use Census procedure and the 1999 results required by Section 3/4.12.2 of the ODCM.

- Walk-down for the Independent Spent Fuel Storage Installation sampling stations (TLDs, air samplers, and pressurized ion chambers) to determine the equipment material condition.

- Walk-down of the interim resin storage area to review the radiological controls for the public and TLD stations.

- Walkdowns to determine whether air samplers, composite water samplers, and TLDs were located as described in the ODCM, to determine the adequacy of equipment material condition; and to ensure the adequacy of the associated REMP procedures, including analytical laboratory procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

RETS/ODCM Radiological Effluent Occurrences

a. Inspection Scope

The inspector reviewed the following documents to ensure the licensee met all requirements of the performance indicator from the third quarter 1999 to the second quarter 2000 (four quarters):

- Monthly projected dose assessment results due to radioactive liquid and gaseous effluent releases.

- Quarterly projected dose assessment results due to radioactive liquid and gaseous effluent releases.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up

a. Inspection Scope

The inspector reviewed the circumstances and licensee evaluations associated with an April 8, 2000, event involving improper removal and transfer of externally contaminated bags of radioactive contaminated material from the Unit 1 reactor containment, a posted contamination area, to the non-contaminated spent fuel pool area. The transfer resulted in contamination of portions of the 69' elevation Spent Fuel Building and its Unit 1 airlock area and low level contamination of three individuals. The inspector had conducted, during a previous NRC inspection, a review of the licensee's implementation of its corrective action system for this event. The following aspects of the event were reviewed during the current inspection:

- 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 the work, relative to guidance contained in applicable radiation work permits.
- conduct and documentation of applicable radiological surveys (e.g., contamination, radiation, airborne radioactivity) during and following the event.

The review of the event was against requirements contained in 10 CFR 20 and applicable station procedures including:

- Procedure RP1-100, Rev. 3, Radiation Protection.
- Procedure RP 1-102, Rev. 7, Control of Radiation Protection Risk Significant Work.
- Procedure RP-2-100, Rev. 2, Radioactive Materials Management.
- Procedure RSP 1-101, Rev. 19, Radiological Surveys.
- Procedure RSP 1-105, Rev. 7, Small Radioactive Particle Control.
- Procedure RSP 1-111, Rev. 8, Identification and Control of Radioactive Material.
- Procedure RSP 1-132, Rev. 2, Job Coverage in Radiologically Controlled Areas.
- Procedure RSP 1-200, Rev. 15, ALARA Planning and SWP Preparation.

Background

On April 8, 2000, at about 10:00 a.m., radiation protection personnel improperly transferred two of three externally contaminated bags of waste from the Unit 1 reactor cavity, a contaminated area, through the 69' foot elevation of the spent fuel building (SFB), a non-contaminated area, to a shielded process storage container on the 45' elevation of the SFB. As a result, several individuals sustained low level contamination and portions of the Unit 1 spent fuel pool floor area, and adjoining areas, were contaminated. The contamination levels on the exterior surfaces of the bags transferred was not determined, but believed to have exhibited levels similar to areas within the Unit 1 reactor cavity (approximately 100,000 disintegrations per minute per 100 square centimeters (dpm/100 cm2))(beta-gamma) where the bags were used. No significant alpha emitters or hot particles were identified in the reactor cavity.

The inspector's review identified that prior to the transfer, a pre-job briefing was conducted to discuss job plans, individual personnel assignments, expected radiological conditions, and access control to the areas of transfer. The outage management and the control room staffs were contacted to inform them of the transfer. The bags were directly lifted from the reactor cavity remotely by crane. The first bag transferred had a radiation level on contact of about 80 R/hr, was placed in a clean bag for transfer, and was handled with long handled tools and by rope. Consequently, the work activity was not considered by the licensee to be a "high risk" activity or a potential cross-contamination concern. However, during transfer of the two remaining bags, radiation safety personnel did not re-bag the two bags (measuring up to 2 R/hr at contact) in clean outer bags or otherwise contain them to prevent the spread of contamination. These latter bags were placed in a cart and transferred out of the posted contamination area through the non-contaminated 69' elevation of the spent fuel pool area, placed on a crane by radiation safety personnel and lowered by crane into a shielded container for storage. Because of the lower radiation dose rates on these bags, and their handling with long handled tools, this work also was not considered by the licensee as "high risk." The inspector identified a number of procedural violations associated with this event, which are discussed in the following paragraphs.

b. Findings

The inspector noted that radiation protection procedure RSP 1-111, Rev. 8, Section 3.4.E, requires, in part, that radioactive material outside a posted contaminated area, with loose surface contamination, be contained to prevent the spread of contamination. The failure to properly contain the contaminated materials resulted in secondary problems. In particular, the workers receiving the material in the non-contaminated area at the Unit 1 airlock, were not informed or otherwise cautioned about the external surface contamination so that appropriate controls for handling the bags could be established. The failure to inform the personnel of the external contamination was contrary to procedure RSP 1-132, Section 6.2, which required that radiation safety personnel, providing job coverage, communicate and discuss with the work crew, radiological conditions and implementation of exposure controls. Further, the inspector identified that procedure RSP 1-113, Rev. 6., Section 6.2, required, in part, that the external surfaces of items or materials released from contaminated areas be externally surveyed for beta-gamma loose surface contamination. No external loose surface contamination surveys were made to confirm the absence of contamination prior to the removal from a posted contamination area to a non-contaminated area.

Once radiation protection personnel recognized that the two remaining bags had not been re-bagged, and that external surface contamination was likely present, they took actions to prevent the spread of contamination. These actions included surveys of floor areas, securing of personnel traffic through the area, and decontamination of floor areas. Notwithstanding, no documentation of the initial radiological surveys of the areas were available. The failure to document surveys was contrary to Procedure RSP 1-132, Section 6.1, which required that surveys be performed and documented when the work activity could change radiological conditions and when unknown conditions exist. The radiological contamination levels of affected surface areas were subsequently determined to not be risk significant.

The individual involved in the transfer of the externally contaminated bags of material outside the posted contaminated area did wear gloves, but sustained some low level contamination of the hands. Two other workers sustained some minor contamination. Contamination reports, associated with these personnel, indicated that the occurrences were minor in nature and did not pose a risk to the personnel. No breathing zone air samples were required to be collected by procedures during the activity or due to recognized contamination levels. However, routine daily air samples on the affected elevations (45' and 69') were collected and did not identify any significant airborne radioactivity. The inspector noted that the documentation for these samples did not indicate the collection period. The failure to identify the time these samples were performed was contrary to procedure RSP1-101, Section 6.2 B, which requires that such information be included on survey records. Notwithstanding, no facial contamination or other indications of potential internal contamination of personnel, attributable to airborne radioactivity, were identified. In addition, because of the closing of the main radiological controlled area (RCA) access/egress point, several individuals exited an alternate RCA egress point from the 45' area, to the outdoor area outside the RCA. These individuals performed personnel whole body contamination monitoring at three locations. They performed personnel contamination surveys prior to exiting the RCA at an operable frisking station on the 45' elevation and subsequently performed

whole body monitoring at two additional locations after exiting the RCA. No contamination was identified.

This issue was determined to have affected the Occupational Radiation Safety Cornerstone because the issue involved a failure of multiple radiation protection barriers. In this case, physical control of potentially high levels of contamination was not maintained, coordination and oversight by radiation protection technicians were not effective in preventing the transfer of non-contained radioactive contamination from a contaminated area, radiation protection personnel did not conduct and document surveys consistent with procedure requirements, and oversight by supervisors of the activity was not effective. This issue was screened via the Occupational Radiation Safety Significance Determination Process and determined to be of very low safety significance (Green) because: 1) there was no overexposure of workers; 2) there was no substantial potential for such an exposure; and 3) the licensee's ability to assess dose to the workers was not compromised.

The inspector determined that the failure to properly contain radioactive material, inform personnel of uncontained radioactive contamination, and to conduct and document radiological surveys, as required by radiation protection procedures RSP 1.111, RSP 1-101, RSP 1-113, and RSP-132, respectively, constitutes a violation of Technical Specification (TS) 5.4.1. The licensee incorporated this finding into the corrective action program under Issue Report Nos. IR3-054-967 and IR3-044-244. This violation of TS 5.4.1 is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A.1 of the Enforcement Policy, issued May 1, 2000, (65 FR 25368). **(NCV 05000317/2000-009-01)**

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 November 21, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

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R. Wyvill, ALARA Supervisor
S. Sanders, General Supervisor, Radiation Safety
T. Sydnor, General Supervisor, Plant Engineering
T. Pritchett, Manager, Nuclear Engineering
W. Paulhardt, Radiation Protection Supervisor

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
ALARA	As Low As is Reasonably Achievable
CFR	Code of Federal Regulations
ESP	Engineering Service Package
HP	Health Physics
IR	Issue Report
ITS/ODCM	Improved Technical Specification/Offsite Dose Calculation Manual
MO	Maintenance Order
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
QA	Quality Assurance
QC	Quality Control
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
SDP	Significance Determination Process
SFB	Spent Fuel Building
SIT	Safety Injection Tank
SRW	Service Water
SSC	Structure, System and Component
TS	Technical Specification

ITEMS OPENED AND CLOSED

Opened

50-317/2000-009-001	NCV	Radiation protection personnel did not follow established radiation protection procedures as required by TS 5.4.1.

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 affect 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.