

July 28, 2000

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

SUBJECT: NRC'S CALVERT CLIFFS INSPECTION REPORT NO. 05000317/2000-006
AND 05000318/2000-006

Dear Mr. Cruse:

On July 1, 2000, the NRC completed an inspection of your Calvert Cliffs Nuclear Power Plant Units 1 & 2. The enclosed report presents the results of that inspection. Preliminary results were discussed with Mr. Katz and other members of your staff on July 13, 2000.

NRC inspectors examined numerous activities as they related to reactor safety, compliance with the Commission's rules and regulations, and the conditions of your operating licenses. The inspection consisted of selective reviews of procedures and representative records, observations of activities, and interviews with personnel. Specifically, the inspection involved seven weeks of resident inspections and a region-based inspection in the areas of public radiation safety and effluent releases.

The inspectors evaluated two issues under the risk significance determination process and determined the issues to be of very low safety significance (Green). These issues have been entered into your corrective action program and are discussed in the summary of findings and the body of the attached inspection report. These two issues were also determined to involve violations of NRC requirements, but because of their very low safety significance the violations are not cited. If you contest these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 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.

Mr. Charles H. Cruse

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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

Enclosure: NRC's Calvert Cliffs Integrated Inspection Report 05000317/2000-006
and 05000318/2000-006

cc w/encl:

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Mr. Charles H. Cruse

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**U.S. NUCLEAR REGULATORY COMMISSION
Region I**

License Nos.: DPR-53
DPR-69

Docket Nos.: 05000317
05000318

Report Nos.: 05000317/2000-006
05000318/2000-006

Licensee: Calvert Cliffs Nuclear Power Plant, Inc.
Post Office Box 1475
Baltimore, Maryland 21203

Facility: Calvert Cliffs Nuclear Power Plant
Units 1 and 2

Location: Lusby, MD

Dates: May 14, 2000 to July 1, 2000

Inspectors: Scott Stewart, Senior Resident Inspector
Fred Bower, Resident Inspector
Tim Hoeg, Resident Inspector
Steven Dennis, Operations Engineer
Lois James, Reactor Inspector
Jason Jang, Senior Radiation Specialist

Approved by: Michele G. Evans, Chief
Projects Branch 1
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Summary of Findings

IR 05000317-00-06, 05000318-00-06; on 05/14 - 07/01/2000; Calvert Cliffs Nuclear Power Plant, Inc.; Calvert Cliffs Nuclear Plant; Units 1 & 2. Barrier Integrity, Other Activities.

This report covers a seven-week period of resident inspection and region based inspection by a radiation specialist, conducted per the NRC's Reactor Oversight Process (Attachment 1). The inspections identified two green issues, which were non-cited violations. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process (SDP).

Cornerstone: Barrier Integrity

- GREEN. Licensee Event Report (LER) 05000317/2000-04-00 identified that one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification (TS) 3.3.7. CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. Since the finding did not represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atmospheric pressure control function of the reactor containment, this item was determined to be of very low safety significance. Having a containment radiation sensor bypassed for more than four hours during core alterations was considered a Non-Cited Violation. (Section 1R14).

Crosscutting Issues: Human Performance

- GREEN. LER 05000317/98-011-00 identified a 1998 event where a Technical Specification required fire watch was released before the TS penetration fire barrier was restored to an operable condition. Calvert Cliffs personnel did not question the lack of specific cure time requirements for operability in either the procedure or maintenance order. While there was a degradation of a fire barrier, the plant was in cold shutdown with the fuel removed. Therefore, this item was determined to be of very low safety significance. Failure to maintain a fire watch for an inoperable TS fire barrier penetration was considered a Non-Cited Violation. (Section 40A4)

Report Details

Summary of Plant Status

Units 1 and 2 operated at 100 percent power during the inspection period except for small reductions in power for main turbine valve testing and main condenser maintenance.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems and Barrier Integrity

1R05 Fire Protection - 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 areas inspected included:

- Auxiliary Feedwater (AFW) Pump Room - Unit 1
- Cable Spreading Room - Unit 1
- 45 Foot Elevation Switchgear Room - Unit 1

b. Issues and Findings

No findings were identified.

1R12 Maintenance Rule Implementation

.1 480 Volt Alternating Current (AC) Breaker System

a. Inspection Scope

The inspector reviewed the 480 volt AC breaker system to assess CCNPPI's implementation of procedure MN-1-112, "Managing System Performance," and compliance with the NRC maintenance rule regulations. System performance was discussed with the CCNPPI system manager. The inspectors reviewed the functional failures, associated corrective actions, and a goal setting plan (IR3-024-961). The inspectors also reviewed a casual analysis for the functional failure of the 11 switchgear room air conditioning compressor breaker (52-1110).

b. Issues and Findings

No findings were identified.

.2 125 Volt Direct Current (DC) System

a. Inspection Scope

The inspector reviewed the system report card, functional failures and system level indicators for the 125 volt DC system with the system manager to assess CCNPPI's implementation of procedure MN-1-112, "Managing System Performance," and compliance with the NRC maintenance rule. The inspector reviewed an issue report (IR3-052-486) that was initiated by the system manager to place the system into maintenance rule (a)(1) status due to exceeding the unavailability performance criteria in the maintenance rule scoping document for the battery chargers.

b. Issues and Findings

No findings were identified.

.3 22 Saltwater Pump Discharge Check Valve Failed to Close

a. Inspection Scope

While performing routine surveillance test procedure STP-O-073A-2, "Saltwater Pump Operability Test," operators found that the 22 saltwater (SW) pump discharge check valve (2CKVSW-107) would not meet its seat leakage criteria when the 22 SW pump rotated backwards with the 23 SW pump running (IR3-042-554). The inspector reviewed the completed maintenance order (MO2200001636) that replaced 2CKVSW-107. The inspector discussed this issue with the system manager and verified that the issue was classified as a functional failure. The inspector reviewed the saltwater system report card, saltwater system list of functional failures for the last two years, and maintenance rule documentation to verify that the functional failure did not place the saltwater system in maintenance rule category (a)(1).

b. Issues and Findings

No findings were identified.

1R13 Maintenance Work Prioritization and Control

a. Inspection Scope

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

- MO0200000580 Fuel Reconstitution Inspection
- MO1199904048 13 AFW Pump Outboard Bearing
- MO1199904550 13 AFW Pump Coupling Preventive Maintenance

b. Issues and Findings

No findings were identified.

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

(Closed) Licensee Event Report 05000317/2000-04-00: Containment Radiation Signal Bypassed During Core Alterations. On March 31, 2000, one of four containment radiation sensors was in bypass during Unit 1 core alterations, a condition prohibited by Technical Specification 3.3.7. CCNPPI immediately halted core alterations and restored the bypassed sensor to normal. CCNPPI determined that human error was the cause of the event. The causal analysis also identified seven contributing factors. The causal analysis determined that several different operators were involved in the completion of the core alteration checklist. This resulted in the loss of detailed knowledge pertaining to the bypassed containment radiation sensor. The inspector reviewed the corrective actions and enhancements resulting from the LER and the causal analysis which included: (1) training, (2) reinforcement of the use of "Event Free Tools," and (3) revision of procedures to preclude the reoccurrence of a similar issue.

This issue was considered more than minor and was evaluated using the significance determination process since a Technical Specification allowed outage time limit was exceeded and the integrity of the reactor containment barrier could have been affected. Since the finding did not represent an actual open pathway in the physical integrity of the reactor containment or an actual reduction of the atmospheric pressure control function of the reactor containment, this item was determined to be of very low safety significance (Green).

Having a containment radiation sensor bypassed for more than four hours during core alterations is a violation of TS 3.3.7. However, this issue is being treated as a Non-Cited Violation (NCV) (**NCV 05000317/2000-006-01**), consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25368). This violation is in the licensee's corrective action program under issue report (IR) No. IR3-057-944. LER 05000317/2000-04 is closed.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed selected operability evaluations affecting risk significant mitigating systems, to assess: (1) the technical adequacy of the evaluations, (2) whether continued system operability was warranted, and (3) whether other existing degraded conditions were considered as compensating measures.

- Operability Determination No. 98-028: Unit 2 Wide Range Noble Gas Monitor (2RIC5415) uses a substitute value for process (main vent) flow vice actual flow under isokenetic conditions.
- Operability Determination No. 99-008: Evaluation of design specification testing criteria for 480 volt AC motor control cabinet (MCC) breaker replacement hardware.

b. Issues and Findings

No findings were identified.

1R16 Operator Workarounds

.1 Quarterly Operator Workaround Report

a. Inspection Scope

The inspectors reviewed the Operations Quarterly Operator Workaround Report issued in May 2000. The inspector compared the report against Operations Administrative Policy 94-7, "Reduction Program for Operator Workarounds," to verify that CCNPPI had effectively evaluated: (1) the aggregate affect of operator workarounds on individual workstations, (2) the aggregate affect of operator workarounds on specific blocks of equipment, and (3) the aggregate affect of operator workarounds as they relate to response to plant transients and plant trips, the implementation of abnormal and emergency procedures, reactivity management, and personnel safety. The inspectors also verified that CCNPPI manages operator workarounds through the use of a tracking and trending program and the corrective action program.

b. Issues and Findings

No findings were identified.

.2 11 Steam Generator Feedwater Valves Seat Leakage

a. Inspection Scope

During feedwater system valve testing, seat leakage was identified for the 11 steam generator feed regulating valve (FRV), the FRV bypass valve, and isolation valve (1FW-4516) as evidenced by rising steam generator level with the condensate and condensate booster pumps running while in mode 5. Issue Report No. IR3-041-760 was initiated to enter this condition into the corrective action program and maintenance order (MO) No. 1200001700 was performed to correct the valves' seat leakage. The inspectors discussed this issue with operations and systems engineering personnel to determine if the emergency operating procedures (EOP) were affected.

b. Issues and Findings

No findings were identified.

1R17 Permanent Plant Modifications

The inspector reviewed a permanent plant modification (ES200000648) and associated installation maintenance order (MO1200002947) that replaced a failed reactor vessel level monitoring system (RVLMS) heated thermocouple heater device with a resistor. The modification maintains the operation of the other three heaters in the series. The inspector observed the responsible engineer present the modification to the plant operations safety committee for their approval. The inspector walked down the installed modification with the system engineer. The Updated Final Safety Analysis Report (UFSAR) and the Technical Specifications were used as references.

b. Issues and Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

Through direct observation or the review of test results, the inspectors verified the post-maintenance testing (PMT) activities for the following maintenance orders satisfied applicable requirements:

- MO1199802146 Overhaul of the 11 Salt Water pump. PMT per STP-0-073A-1.
- MO1199904491 Replacement of the valve actuator diaphragm for, 1CV4550, the isolation valve in the AFW cross connect header between Units 1 and 2. PMT per STP-O-51-2.
- MO1200000147 11 Charging Pump Coupling Alignment and Oil Samples

b. Issues and Findings

No findings were identified.

1R22 Surveillance Testing

.1 Unit 2 Station Battery Weekly Checks

a. Inspection Scope

The inspectors observed the performance of the surveillance testing conducted to demonstrate that the 21 and 22 station batteries met the operating DC power source and battery cell parameter requirements of Technical Specification surveillance requirements 3.8.4.1 and 3.8.6.1. The results of surveillance test procedure (STP) M-150-2, "22 Station Battery Weekly Check," and STP M-152-2, "21 Station Battery Weekly Check" were reviewed.

b. Issues and Findings

No findings were identified.

.2 High Pressure Safety Injection and Reactor Trip Breaker

a. Inspection Scope

The inspectors observed selected portions of, reviewed the results of, and verified the adequacy of the following surveillance and inservice testing activities:

- STP-0-73I-1 High Pressure Safety Injection Pump and Valve Operability Test
- STP-M-200-1 Reactor Trip Circuit Breaker Functional Testing

The Technical Specifications and Updated Final Safety Analysis Report were used as references.

b. Issues and Findings

No findings were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

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

- Temporary Alteration No. 1-00-038: Three in-core instrumentation (ICI) detectors were left uninserted and electrically jumpered out following the last refueling outage on Unit 1, cycle 15, due to an obstructed guide tube.

- Temporary Alteration No. 1-00-046: Allows installation of thermocouples and associated wiring to be installed on Unit 1 pressurizer power-operated relief valves (PORV) and code safety valves for monitoring purposes.
- Temporary Alteration No. 1-00-053: Allows a temporary power supply cable to feed outdoor lighting on the north end of the site protected area.

b. Issues and Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS1 Gaseous and Liquid Effluents

a. Inspection Scope

The inspector reviewed the following documents to ensure the licensee met the requirements specified in the Improved Technical Specifications/Offsite Dose Calculation Manual (ITS/ODCM): (1) the 1998 and 1999 Radiological Annual Effluent Release Reports; (2) the most recent Offsite Dose Calculation Manual (ODCM, Revision 4, February 17, 2000) and safety evaluations including technical justifications for ODCM changes; (3) monthly, quarterly, and annual projected doses to the public required by Sections 4.11.1.2 and 4.11.2.2 of the ODCM; (4) analytical results for turbine building sump water, charcoal cartridge, particulate filter, and noble gas samples; (5) implementation of the compensatory sampling and analysis program when the effluent radiation monitoring system (RMS) is out of service; (6) radioactive liquid and gaseous release permits; (7) calibration records for laboratory measurements equipment; (8) quality control (QC) programs for the measurement laboratory; (9) self-assessments; (10) quality assurance (QA) audit for the radiological effluents technical specifications (RETS) and ODCM implementations; (11) corrective actions for the Special Report "Inoperability of the Unit 1 wide range noble gas effluent radiation monitor for a period in excess of seven days"; and (12) the response to the NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal."

The inspector also reviewed the most recent channel calibration and functional testing results for the following effluent radiation monitoring systems and the associated flow rate measurement devices listed in Tables 4.3-11 and 4.3-12 of the ODCM: (1) liquid radwaste effluent line radiation monitor and its flow rate monitor (common); (2) steam generator blowdown effluent line radiation monitor and its flow rate monitor (Units 1 and 2); (3) main vent noble gas monitor (Units 1 and 2); and (4) waste gas holdup system noble gas monitor and its flow rate monitor (common).

The inspector reviewed the most recent surveillance test results for the following air cleaning systems for both units: (1) containment iodine removal system; (2) penetration room exhaust air filtration system; (3) control room emergency ventilation system; (4) emergency core cooling system pump room exhaust air filtration system; and (5) spent fuel pool ventilation system.

The inspector toured the facilities to determine the operability of the following systems: (1) sampling devices for the plant vent and radioactive liquid releases; (2) air cleaning systems; and (3) radioactive liquid and gaseous effluent radiation monitoring systems.

b. Issues and Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verifications
Cornerstone: Initiating Events

a. Inspection Scope

The inspectors verified the following first quarter 2000 performance indicators (PI) for the initiating events cornerstone for Units 1 and 2:

- Unplanned Scrams per 7000 Critical Hours
- Scrams with Loss of Normal Heat Removal
- Transients per 7000 Critical Hours

The inspectors reviewed the monthly Operating Data Reports applicable to the four quarters of operation beginning with the second quarter of 1999 and ending with the first quarter of 2000 to determine the number of reactor critical hours. The inspectors reviewed licensee event reports, a sample of NRC inspection reports, and a sample of licensee quarterly power history reports to verify the number of reactor trips and unplanned transients that had occurred. The inspectors also independently calculated the reported values to verify their accuracy.

b. Issues and Findings

No findings were identified.

40A3 Event Follow-upHuman Performance Problems

(Closed) Licensee Event Report (LER) 05000317/98-011-00: Prematurely Released Fire Watch Due to Inadequate Cure Time Communications. This LER identified a 1998 event where the Technical Specification (TS) required fire watch was released before the TS penetration fire barrier was restored to an operable condition on Unit 1. Specifically, a 1998 modification implemented April 28, 1998, required a penetration between the Cable Spreading Room and the Main Steam Penetration Room to be breached. The penetration was resealed with Dow Corning 3-6548 silicone RTV foam which required a 24-hour cure time. Neither the maintenance order nor the engineering documentation for the modification required a cure time prior to declaring the penetration operable. As a result, the TS fire watch was discontinued prior to the foam cure time. The maximum exposure time with the uncured fire barrier was 24 hours.

The root cause described in the LER was inadequate communication of cure time specifications to maintenance personnel. Plant procedures were followed; however, personnel did not question the lack of specific cure time requirements for operability in either the procedure or the maintenance order. Corrective actions included revising the maintenance procedures to require specific cure times prior to declaring a penetration operable.

Since the TS allowed outage time for an inoperable fire barrier without a fire watch was exceeded, this issue was considered more than minor. The degraded fire barrier affected the fire protection cornerstone and was evaluated using the NRC Fire Protection Significance Determination Process. A fire barrier was degraded; however, the plant was in cold shutdown with the fuel removed. Therefore, the evaluation concluded that the finding was of very low safety significance (Green).

Failure to maintain a fire watch for an inoperable TS fire barrier penetration was a violation of TS 3.7.12, Amendment No. 216, (the TS requirements on the date of the event). However, this issue is being treated as a Non-Cited Violation **(NCV 05000317/2000-006-02)**, consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25368). This violation is in the licensee's corrective action program under issue report No. IR3-008-256. LER 05000317/98-011 is closed.

(Closed) Licensee Event Report 05000317/2000-02-00: Emergency Core Cooling Pump Room Ventilation Surveillance Test Failure on Unit 1. The Emergency Core Cooling System (ECCS) Pump Room Exhaust Filtration System (PREFS) system failed the penetration and system bypass surveillance test on January 28, 2000. At the time of discovery, CCNPPI immediately declared the PREFS inoperable and began an investigation into the cause. The licensee attributed the failure to loose nuts holding the charcoal trays in place. Maintenance personnel tightened the nuts and the ECCS PREFS system passed the surveillance test later that same day and within the TS allowed outage time. Based on the determination that loose nuts caused the ECCS PREFS to fail its surveillance, CCNPPI performed an engineering analysis to evaluate the use of locknuts in the ECCS PREFS banks to preclude recurrence and initiated maintenance orders to install the new locknuts.

This issue did not have a color and was determined to be of very low safety significance because the failure of the ECCS PREFS system did not affect a cornerstone and the

SDP was not used. This issue is in the licensee's corrective action program under issue report number IR3-049-347. LER 50-317/2000-02 is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Katz and other members of licensee management at the conclusion of the inspection on July 13, 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.

.2 Public Plant Performance Review Meeting Summary

A public meeting was held on June 1, 2000, in the Education Center at the Calvert Cliffs Nuclear Power Plant, to discuss the Plant Performance Review (PPR). The NRC had previously communicated the PPR results to CCNPPI in a letter dated March 31, 2000.

PARTIAL LIST OF PERSONS CONTACTEDCCNPPI

C. Cruse, Vice President, Nuclear Energy Division
 P. Katz, Plant General Manager
 T. Pritchett, Manager, Nuclear Engineering
 L. Wechbaugh, Superintendent, Nuclear Maintenance
 D. Holm, Superintendent, Nuclear Operations
 B. Montgomery, Director, Nuclear Regulatory Matters
 S. Sanders, General Supervisor, Radiation Safety
 T. Sydnor, General Supervisor, Plant Engineering
 K. Mills, General Supervisor, Plant Operations
 M. Navin, Superintendent, Technical Support
 C. Earls, General Supervisor, Chemistry
 T. Forgette, Director, Emergency Planning
 G. Detter, General Supervisor, Nuclear Engineering
 J. Spina, Superintendent, Work Management

NRC

J. Crlenjak, Acting Director, DRP, RI
 A. Dromerick, Project Manager, NRR
 M. Evans, Branch Chief, DRP, RI

ITEMS OPENED AND CLOSED

Opened/Closed

05000317/2000-006-01	NCV	Violation of TS 3.3.7 for containment radiation sensor bypassed for more then four hours during core alterations.
05000317/2000-006-02	NCV	Violation of TS 3.7.12 for failure to maintain a fire watch for an inoperable TS fire barrier penetration.

Closed

05000317/2000-004	LER	Containment radiation signal bypassed during core alterations.
05000317/2000-002	LER	Emergency core cooling pump room ventilation surveillance test failure on unit 1.
05000317/1998-011	LER	Prematurely released fire watch due to inadequate cure time communications

LIST OF ACRONYMS USED

AC	Alternating Current
AFW	Auxiliary Feedwater
BGE	Baltimore Gas and Electric
CCNPPI	Calvert Cliffs Nuclear Power Plant Incorporated
DC	Direct Current
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EOP	Emergency Operating Procedure
FRV	Feed Regulating Valve
IR	Issue Report
ICI	In-core Instrumentation
ITS/ODCM	Improved Technical Specifications/Offsite Dose Calculation Manual
ITS	Improved Technical Specifications
LER	Licensee Event Report
MCC	Motor Control Cabinet
MO	Maintenance Order
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publically Available Records
PI	Performance Indicator
PMT	Post Maintenance Testing
PORV	Power Operated Relief Valves
PPR	Plant Performance Review
PREFS	Pump Room Exhaust Filtration System
ODCM	Offsite Dose Calculation Manual
QA	Quality Assurance
QC	Quality Control
RETS	Radiological Effluents Technical Specification
RI	Region I
RMS	Radiation Monitoring System
RVLMS	Reactor Vessel Level Monitoring System
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
STP	Surveillance Test Procedure
SW	Salt Water
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT A

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

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

Radiation Safety

- Occupational
- Public

Safeguards

- Physical Protection

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

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

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