January 18, 2002

Mr. J. Alan Price, Vice-President -
Nuclear Technical Services/Millstone
c/o Mr. D. A. Smith, Manager,
Regulatory Affairs
Dominion Nuclear Connecticut, Inc.
Rope Ferry Road
Waterford, CT 06385

SUBJECT: MILLSTONE UNITS 2 AND 3 - NRC INSPECTION REPORTS 50-336/01-09 AND 50-423/01-09

Dear Mr. Price:

On December 29, 2001, the NRC completed inspections at your Millstone Units 2 & 3 reactor facilities. The enclosed reports document the inspection findings which were discussed on January 16, 2002, with Mr. C. Schwarz and other members of your staff.

These inspections 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.

There was one finding of very low safety significance (Green) identified in the Unit 3 report.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). From these audits, the NRC has concluded that your security program is adequate at this time.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Curtis J. Cowgill, Chief
Projects Branch 6
Division of Reactor Projects

Docket Nos.: 50-336, 50-423
License Nos.: DPR-65, NPF-49

Enclosures:
(1) NRC Inspection Report 50-336/01-09
Attachment 1: Supplemental Information

(2) NRC Inspection Report 50-423/01-09
Attachment 1: Supplemental Information

cc w/encl:
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ENCLOSURE 1

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket No.:	50-336
License No.:	DPR-65
Report No.:	50-336/01-09
Licensee:	Dominion Nuclear Connecticut, Inc.
Facility:	Millstone Power Station, Unit 2
Location:	P. O. Box 128 Waterford, CT 06385
Dates:	November 11 - December 29, 2001
Inspectors:	B. E. Sienel, Acting Senior Resident Inspector, Unit 2 P. C. Cataldo, Resident Inspector, Unit 2 T. F. Burns, Reactor Inspector, Division of Reactor Safety (DRS) G. T. Dentel, Senior Resident Inspector, Seabrook T. A. Moslak, Health Physicist, DRS J. H. Williams, Senior Operations Engineer, DRS
Approved by:	Curtis J. Cowgill, Chief Projects Branch 6 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000336-01-09; on 11/11-12/29/01; Dominion Nuclear Connecticut, Inc., Millstone Power Station; Unit 2; Resident Inspection.

The inspection was conducted by resident and regional inspectors. No findings of significance were identified. 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/reactors/operating/oversight.html .

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Violations

No licensee violations were identified.

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Report Details

SUMMARY OF UNIT 2 STATUS

The plant operated at or near 99 percent power throughout most of the inspection period. The plant operated at reduced power on several occasions to address (1) main condenser waterbox fouling, (2) main condenser waterbox inspections and manway repairs, (3) plant process computer power supply issues, (4) "A" circulating water pump repairs, and (5) intake structure inspections.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity)

1R04 Equipment Alignment

a. Inspection Scope

The inspector performed a partial system alignment check on the motor-driven auxiliary feedwater (AFW) pumps, while the licensee performed preventive maintenance activities on the turbine-driven auxiliary feedwater (TDAFW) pump. The inspector verified that the "A" and "B" motor-driven AFW pumps were correctly aligned for operation in accordance with Surveillance Procedure (SP) 2604C, Ops Form 2604C-002, "Auxiliary Feedwater System Lineup Verification," and system piping and instrumentation diagram (P&ID) 25203-26005, Sheet 3.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspector selected the portions of the service water (SW) system contained in the intake structure, which includes the three service water pumps, to evaluate the licensee’s protection of this system from internal and external flooding conditions. The inspector reviewed the Final Safety Analysis Report, as well as various procedures including OP 2560, "Storms, Winds, and High Tides," to determine the efficacy and readiness of protection for these safety-related pumps. The inspector also reviewed SP 2665, "Building Flood Gate Inspections." The inspector performed a walkdown of the Unit 2 floodgates contained in SP 2665, verified the adequacy of the floodgates to perform their flood protection design function, and verified that various, identified deficiencies had been previously entered into the licensee's corrective action program for resolution.

Based on recent industry experience with water intrusion into manholes that contain safety-related instrument and power cables, the inspector also reviewed the licensee's efforts regarding the inspection of safety-related manholes at Unit 2. This inspector (1) reviewed the licensee's program for inspection and maintenance of safety-related manholes; (2) observed a safety-related manhole inspection; (3) observed water pump-out activities due to the presence of water in a small number of manholes; and (4) reviewed operability determination MP2-084-01, which addressed the operability of

applicable safety-related cables based on the effects of potential submergence of those cables due to the identified water.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

Refer to NRC Inspection Report 50-423/01-09, Section 1R11 for specific details.

1R12 Maintenance Rule Implementation

.1 Engineered Safeguards Actuation System (ESAS) and Containment Air Monitor

a. Inspection Scope

The inspector reviewed licensee actions taken in response to the following condition reports (CRs) with respect to the maintenance rule.

- CR-01-08248 ESAS Channel "B" 24C Indication Failed to 0 Volts
- CR-01-08352 "A" Containment Air Monitor Suction Control Valve 2-AC-12 Failed Stroke Open Time Surveillance

For each CR identified, the inspector reviewed the applicable system's maintenance rule scoping document, applicable quarterly system health report, corrective actions taken in response to the equipment problem, and maintenance rule functional failure determination. The inspector confirmed that the licensee appropriately tracked the occurrences against the systems' performance criteria, both for functional failures and unavailability time.

b. Findings

No findings of significance were identified.

.2 Main Steam, Boric Acid, and 4160 V Swing Bus

a. Inspection Scope

The inspector reviewed the licensee's implementation of the maintenance rule for the Boric Acid and Main Steam systems. The inspector verified that scoping tables associated with each system had appropriate performance criteria consistent with the plant configuration, and in accordance with Integrated Maintenance Program Instruction PI-3, "Performance Criteria". The inspector reviewed system health reports and associated CRs listed below to verify that the identified issues for these systems were correctly evaluated and classified in accordance with Functional Administrative Procedure 710, "Maintenance Rule Functional Failures and Evaluations". Also, the inspector reviewed the unavailability monitoring results for the 4160 Volt Electrical Bus 24E, for the previous twenty-four month period. The unavailability data recorded was discussed with the system engineer and CR-01-11317 was initiated to enter discrepancies into the corrective action program.

- M2-00-2780 "A" BAST level indicator failed high due to boric acid clogging in the wet leg
- CR-01-09220 "A" BAST level increased from 90% to over 100% without any additions to tank
- CR-01-10177 LT-206 "A" BAST level transmitter failed high again
- CR-01-09968 Level failed high 10 hours after weekly soak of LT-206
- CR-01-10123 Boric acid (1) maintenance rule action plan goal not met
- M2-99-3329 While operating at 100% power #2ADV 2-MS-190B opened
- M2-00-0113 The #2 S/G ADV (2-MS-190B) spuriously opened with the SG pressure less than setpoint of controller PIC 4224
- M2-00-3099 The #2 steam generator atmospheric dump valve failed open
- CR-01-11317 Under reporting of unavailability hours (4.16KV Bus 24E)

For each CR identified above, the inspector discussed the issues with the applicable system engineer and reviewed the applicable system's maintenance rule action plan, corrective actions taken in response to the equipment problem, and maintenance rule functional failure determination. The inspector confirmed that the licensee appropriately tracked the occurrences against the systems' performance criteria, both for functional failures and unavailability time.

b Findings

No findings of significance were identified.

.3 Service Water System Valve Performance Issues

a. Inspection Scope

The inspector evaluated the licensee's implementation of the maintenance rule, 10 CFR 50.65, as it pertained to identified performance issues with the following equipment:

- SW-231A, "A" emergency diesel generator SW supply bypass valve (CR-01-10141);
- SW-90C, "C" SW strainer backwash valve (CR-01-09931)

During this inspection, the inspector verified that the licensee-identified equipment failures were appropriately evaluated against applicable maintenance rule functional failure criteria. The inspector also discussed the two issues with the system engineer, verified that the issues were appropriately tracked against the system's performance criteria, and reviewed the following procedures:

- Engineering Department Instruction 30710, "Maintenance Rule Functional Failures;"
- Functional Administrative Procedure MP-24-MR-FAP700, "Maintenance Rule Unavailability Monitoring;"
- Guideline MP-24-MR-GDL700, "Determining Maintenance Rule, SSPI [Safety System Performance Indicators], NRC Performance Indicators, and PRA [Probabilistic Risk Assessment] Unavailability."

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

.1 "A" Circulating Water Pump High Amperage Troubleshooting

a. Inspection Scope

The inspector reviewed the licensee's control of integrated plant risk during troubleshooting activities following the identification of high amperage levels on the "A" circulating water pump on November 14, 2001. The inspector discussed the licensee's findings and corrective actions with the system engineer and the Millstone Unit 2 Maintenance Manager, regarding pump repairs due to failed lower bearing housing bolts. The inspector verified that the licensee managed risk at an acceptably low level during these on-going activities. The inspector verified that deficiencies identified during the troubleshooting activities were entered into the licensee's corrective action program for resolution.

b. Findings

No findings of significance were identified.

.2 "A" Charging Pump Discharge Check Valve Weld Failure

a. Inspection Scope

The inspector reviewed the licensee's control of integrated plant risk following an emergent weld failure that affected the operability of the "A" charging pump, coincident with on-going reduction gear modifications on the "C" charging pump. The inspector reviewed the licensee's guidance contained in procedure MP-20-WM-FAP02.1, "Conduct of On-Line Maintenance," which is used to implement the risk assessment requirements of the Maintenance Rule set forth in 10 CFR 50.65(a)(4). The inspector verified that the licensee managed risk at an acceptably low level during these on-going activities. The inspector verified that identified deficiencies were entered into the licensee's corrective action program for resolution as CR-01-11536.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

.1 "B" Auxiliary Feedwater Pump High Viscosity

a. Inspection Scope

The inspector evaluated the adequacy of operability determination (OD) MP2-087-01, which the licensee initiated following their identification of higher-than-required viscosity oil in the outboard bearing housing of the "B" motor-driven AFW pump. The inspector reviewed the OD to determine the acceptability of the licensee's conclusion that the "B" AFW pump was operable with the high viscosity oil present in the bearing housing. The inspector reviewed the adequacy of the licensee's immediate corrective actions following the discovery, which included, for example, a complete change-out of the oil in the affected bearing housing. The inspector verified that the licensee had entered this issue into the licensee's corrective action program for resolution as CR-01-11325.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

High Pressure Safety Injection (HPSI) Pump Bearing Modification

a. Inspection Scope

The inspector reviewed various aspects of the design, implementation, testing, and document update activities associated with design change DM2-00-0364-001, "HPSI Pump P41B Bearing Modifications," and DCR M2-00018, "HPSI Pump (P41A/B/C) Bearing Modifications." The inspector reviewed (1) design change package details, (2) surveillance test acceptance criteria, (3) post-modification acceptance criteria and test results (see Section 1R19.1), (4) work order M2-01-01106, and (5) on-line risk assessments to determine the relative impact the modification and testing had on overall plant operations. The inspector also verified that the licensee had initiated applicable changes to affected operating, maintenance, and surveillance procedures, including:

- OPS Form 2604A-5, "'B' HPSI Pump Operability Test, Mode 1,2,3 and 4, Facility 1;"
- OPS Form 2604A-7, "'B' HPSI Pump IST, Facility 1;"
- SP 2669A-002, "Unit 2 Aux Building Rounds;"
- MP 2703E2, "High Pressure Safety Injection Pump Overhaul;"
- MP 2701F-P41, "Lubrication Information Sheet - High Pressure Safety Injection Pumps P41A, B, & C;"
- CBM 103 U2-009, "P41, High Pressure Safety Injection Unit 2 Lube Oil Sampling Technique Sheet."

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

.1 Auxiliary Feedwater Valve and Charging Pump Maintenance

a. Inspection Scope

The inspector reviewed the completed documentation for post-maintenance testing (PMT) performed under the following automated work orders (AWOs).

- M2-00-04130 Replace Feedwater Control Valve 2-FW-43A open limit switch
- M2-01-07592 Replace "C" Charging Pump Reduction Gear Assembly

The inspector reviewed the scope of the work activities, including AWO description and related design change notices, and verified that the PMTs planned and performed were appropriate to restore the operability of the associated systems.

b. Findings

No findings of significance were identified.

.2 "A" Battery Charger Alarm Card Replacement

a. Inspection Scope

The inspector reviewed PMT results following replacement of an alarm card for the "A" battery charger. The inspector reviewed the adequacy of the test results detailed in work order M2-01-09498, and verified the acceptability of the acceptance criteria contained in SP 2736I, "Cyberex Battery Charger Alarm Card Alignment". The inspector also verified that the acceptance criteria was consistent with the vendor technical manual and the original factory tests. The inspector reviewed the function of the alarm card and the PMT results to ensure the "A" battery charger would continue to perform its required safety function.

b. Findings

No findings of significance were identified.

.3 "B" High Pressure Safety Injection (HPSI) Pump Bearing Replacement

a. Inspection Scope

The inspector observed maintenance activities during the installation of re-designed bearings for the "B" HPSI pump. The inspector reviewed work order M2-01-01106, and verified that the selected post-maintenance tests adequately demonstrated the "B" HPSI pump would continue to perform its required safety function. The inspector reviewed PMT results, and verified the acceptability of applicable acceptance criteria contained in SP 2604A: OPS Form 2604A-5, " 'B' HPSI Pump Operability Test, Mode 1,2,3 and 4, Facility 1," and OPS Form 2604A-7, " 'B' HPSI Pump IST, Facility 1." The inspector verified that identified deficiencies were entered into the licensee's corrective action program for resolution.

b. Findings

No findings of significance were identified.

.4 Refueling Water Storage Tank (RWST) Suction Valve Gearbox Repair

a. Inspection Scope

The inspector reviewed work order M2-98-06215, which detailed the gearbox repair of 2-CS-13B, RWST "B" header isolation valve. The inspector verified that the selected post-maintenance tests adequately demonstrated that 2-CS-13B would continue to perform its required safety function. The inspector reviewed control room logs and verified that the post-maintenance valve stroke was satisfactorily performed. The inspector verified that identified deficiencies were entered into the licensee's corrective action program for resolution.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

.1 Technical Specification Surveillances

a. Inspection Scope

The inspector reviewed licensee performance related to the following surveillance tests.

- SP 2401GA RPS Channel "A" Bistable Trip Test
- SP 2401GB RPS Channel "B" Bistable Trip Test
- SP 2604H Containment Sump and SDC Heat Exchanger RBCCW Outlet Valves Operability Tests, Facility 2

The pre-job briefing and conduct of the reactor protection system (RPS) testing was observed in the control room to confirm performance of the tests in accordance with approved procedures. The completed data sheets were reviewed for all tests to verify the equipment met procedural acceptance criteria and was operable, consistent with technical specification requirements.

b. Findings

No findings of significance were identified.

.2 Turbine Driven Auxiliary Feedwater Pump Steam Supply Check Valve Inservice Testing

a. Inspection Scope

On November 15, 2001, the inspector observed inservice testing on the steam admission check valves for the TDAFW pump that was conducted in accordance with SP 2610E, "Main Steam Isolation Valve Closure and Main Steam Valve Operational Readiness Testing". The inspector verified that test results for the inservice testing were within the test procedure acceptance criteria, and that performance of the test adequately demonstrated equipment operability. The inspector interviewed operations and engineering personnel and reviewed the completed test documentation and applicable portions of the inservice test program. Based on the inspector's questions, CR-01-11220 was generated for deficiencies in the performance of the inservice test.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Occupational Radiation Safety [OS]

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

During the period December 10 -14, 2001, the inspector conducted the following activities to evaluate the operability and accuracy of radiation monitoring instrumentation and the adequacy of the respiratory protection program. Implementation of these programs was reviewed against the criteria contained in 10CFR20, applicable industry standards, and the licensee's procedures.

- The inspector observed technicians performing source and functional checks on a variety of low range/high range portable survey instruments, electronic dosimeters, and contamination monitors used in Units 2 and 3. Instruments tested included a teletector (#59777), an E-130 (#8310), R0-20's (Nos. 1165, 1118), electronic dosimeters (Nos. 6570, 6230), BC-4 (Nos. 800 and 804), and a SAC-4 (No. 879).
- The inspector observed technicians performing an electronic calibration of an RM-14 contamination survey instrument (#3589), and a source calibration of the Unit 3 Service Water Effluent Radiation Monitor (3SWP*RE60A).
- The inspector reviewed the operating procedure and current calibration source activity/dose rate characterizations for the Shepard Model 89 (#9155) calibrator used for instrument calibrations and observed a technician perform safety interlock tests. Other records reviewed that related to the operation of the calibrator included recent weekly radiation survey results, monthly interlock tests, and monthly dose rate validation reports.
- The inspector reviewed the calibration records for electronic dosimeters, the three (3) onsite whole body counting systems, and selected Unit 2 and Unit 3 area radiation monitors. Discussions were held with the licensee's staff regarding the associated calibration procedures and instrument performance trends.

- The inspector evaluated the adequacy of the respiratory protection program regarding maintenance and issuance of self-contained breathing apparatus (SCBA). Training and qualification records for licensed operators, required to wear SCBA's in the event of an emergency, were reviewed. Six (6) SCBA's staged for use in the Unit 2 and Unit 3 control rooms were physically checked and the testing records for these and other selected SCBA's, staged in other plant areas, were reviewed.
- The inspector reviewed thirteen (13) CRs related to radiation instrumentation, SCBA's, and the monitoring of plant radiation levels to determine if problems were identified in a timely manner and appropriate corrective actions were taken to resolve the related issues. Additionally, the CR issues were evaluated against the criteria contained in 10CFR20, relevant Technical Specifications, and site procedures to determine the regulatory significance of the identified issue. Included in this review were CRs M3-00-1666 and CR-01-00595, 01-02661, 01-07799, 01-08154, 01-08858, 01-08881, 01-08952, 01-09056, 01-09079, 01-11064, 01-11310, and 01-11327.
- In evaluating the effectiveness of the licensee's problem identification and resolution program, the inspector reviewed the following Nuclear Oversight Departmental records and Radiation Protection Department self-assessments for issues regarding implementation of the radiation instrumentation and SCBA programs:

  - Nuclear Oversight Audit Report, MP-01-A17, Radiation Protection Program, November 20, 2001
  - Nuclear Oversight Verification Panel inputs for 10/01/01, 07/09/01, 03/28/01, and 01/14/01
  - Radiation Protection Department Self-Assessment, MP-SA-01-090, Unconditional Radiological Release of Liquids and Bulk Materials, 10/17/01
  - Radiation Protection Department Self-Assessment, Assessment of Compliance with NVLAP criteria, MP-SA-01-186, 08/29/01.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

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 CRs and associated documents for occurrences involving locked high radiation areas, very high radiation areas, and unplanned personnel exposures since the last inspection against the criteria specified in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 1, to verify that all occurrences that met the NEI criteria were identified and reported as PIs.

b Findings

No findings of significance were identified.

4OA3 Event Follow-up

(Closed) LER 50-336/2001-006-00/01: "Turbine Driven Auxiliary Feedwater Pump Enclosure Door Inoperable Without Compensatory Measures." On May 11, 2001, the licensee failed to implement compensatory measures to protect the motor-driven AFW pumps from the consequences of a high energy line break (HELB) event, while the turbine-driven AFW pump room HELB door was open during repair activities. Additionally, the licensee failed to enter technical specification action statements associated with the motor-driven AFW pumps while the HELB door was open. The underlying event detailed in the subject LERs was previously reviewed, assessed for significance, and documented in NRC Inspection Report 50-336/01-05, dated August 2, 2001. The licensee reported this event as an unanalyzed condition that significantly degraded plant safety in accordance with 10 CFR 50.73(a)(2)(ii)(B). However, the inspector reviewed the LERs, as well as the licensee's root cause evaluation and identified no violation of NRC requirements. These LERs are closed.

4OA6 Meetings, including Exit

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. Schwarz and other members of licensee management at the conclusion of the inspection. The licensee acknowledged the findings presented.

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

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. List of Items Opened, Closed and Discussed

Previous Items Closed

50-336/2001-006-00	LER	Turbine Driven Auxiliary Feedwater Pump Enclosure Door Inoperable Without Compensatory Measures (4OA3)
50-336/2001-006-01	LER	Turbine Driven Auxiliary Feedwater Pump Enclosure Door Inoperable Without Compensatory Measures (4OA3)

b. Partial List of Documents Reviewed

Procedures & Associated Records:

RPM 4.1.11 AMS-4 Air Monitoring System Calibration
RPM 4.2.4 RM-14 Count Rate Meter Calibration
RPM 4.8.2 J. L. Shepard Calibrator Operation
-Weekly radiation survey records for Shepard Model 89 Calibrator (#9155)
-Monthly Shepard Model 89 Calibrator (#9155) Interlock tests
-Monthly Shepard Model 89 Calibrator (#9155) Validation tests
RPM 4.8.9 Source Checking of Health Physics Instruments
RPM 4.8.14 Instrumentation Quality Assurance Program
CP 801/2801/3801 ABACOS PLUS Whole Body Counting System Maintenance
- Energy/ Efficiency Calibration Records for FastScans and AccuScan Whole Body Counting Systems
SFP 24 Inspection and Inventory of Self Contained Breathing Apparatus

Reports:

Gamma 10 Portal Monitor Sensitivity Evaluation
Oversight Audit Report (MP-01-A17), Radiation Protection Program
Nuclear Oversight Verification Panel Quarterly Status Reports dated 10/11/01, 7/9/01, and 3/28/01.
Electronic Personnel Dosimeter Calibration Records for 2001
National Voluntary Laboratory Accredition Program Report (7/25-27/01) Lab Code 100540-0

c. List of Acronyms Used

AFW	auxiliary feedwater
AWOs	automated work orders
CRs	condition reports
ESAS	engineered safeguards actuation system
HELB	high energy line break
HPSI	high pressure safety injection
LER	Licensee Event Report
NEI	Nuclear Energy Institute
OD	operability determination

P&ID	piping and instrumentation diagram
PI	performance indicator
PMT	post maintenance testing
RPS	reactor protection system
RWST	refueling water storage tank
SCBA	self-contained breathing apparatus
SP	surveillance procedure
SW	service water
TDAFW	turbine driven auxiliary feedwater

ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket No.: 50-423

License No.: NPF-49

Report No.: 50-423/01-09

Licensee: Dominion Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Unit 3

Location: P. O. Box 128
Waterford, CT 06385

Dates: November 11 - December 29, 2001

Inspectors: A. C. Cerne, Senior Resident Inspector, Unit 3
L. S. Cheung, Senior Reactor Inspector, Division of Reactor Safety (DRS)
G. T. Dentel, Senior Resident Inspector, Seabrook
T. A. Moslak, Health Physicist, DRS
J. H. Williams, Senior Operations Engineer, DRS

Approved by: Curtis J. Cowgill, Chief
Projects Branch 6
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000423-01-09; on 11/11-12/29/01; Dominion Nuclear Connecticut, Inc., Millstone Power Station; Unit 3; Licensed Operator Requalification.

The inspection was conducted by resident and regional inspectors. This inspection identified one Green finding. 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/reactors/operating/oversight.html .

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

Green. Two of ten Unit 3 crews failed the dynamic simulator portion of a licensed operator requalification exam. The crew failures are more than minor (credible effect on safety) because the rate is 20% and the deficiencies reflected the potential inability of the crews to take appropriate safety related actions in response to actual emergency conditions. Based on the percentage of crew failures (20% - 2 of 10 crews examined failed), the finding was characterized by the SDP as having very low risk significance. The crews failed to successfully complete a "crew critical task," which measured each crew's ability to place and maintain the reactor in a safe operational or shutdown condition. (Section 1R11)

B. Licensee Identified Violations

No licensee violations were identified.

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Report Details

SUMMARY OF UNIT 3 STATUS

The plant operated at approximately 100 percent power throughout the inspection period.

1. REACTOR SAFETY
(Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity)

1R05 Fire Protection

a. Inspection Scope

The inspector performed a complete area walkdown of all elevations of the fuel building (Fire Area FB-1) and partial walkdowns of the fuel building fire area housing the spent fuel pool cooling pumps and heat exchangers (FB-2), as well as the lower elevation of the hydrogen recombiner building (Fire Area HR-1). The inspector verified that the fire detection and suppression equipment in these areas was as specified in the Millstone 3 Fire Protection Evaluation Report. The areas were also checked for degraded component conditions, transient combustible material, and any configuration details that would adversely affect the ability of the fire brigade to respond to potential fire scenarios.

The inspector discussed certain building design features (e.g., floor drains for the fire protection water) and specific operational controls (e.g., potential use of the fire protection water to refill the spent fuel pool) with the cognizant licensee system engineering and operations staff personnel. The piping and instrumentation drawings and procedures relevant to the fire protection system and affected safety-related equipment were reviewed to confirm both the design requirements and adequate configuration control. The inspector verified the licensee's implementation of corrective actions (e.g., condition report, (CR)-01-11918) to address the proper lineup and status of the subject fire protection equipment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

An in-office review was conducted of licensee requalification exam results for the biennial testing cycle. The inspection assessed whether pass rates were consistent with the guidance of NUREG-1021, Revision 8, "Operator Licensing Examination Standards for Power Reactors" and NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)".

The inspector verified that:

- Crew pass rate was greater than 80%. (Pass rate was 90% for Unit 2 and 80% for Unit 3.)
- Individual pass rate on the dynamic simulator exam was greater than or equal to 80%. (Pass rate was 100% for both units.)
- Individual pass rate on the walk-through was greater than or equal to 80%. (Pass rate was 100% for both units.)
- Individual pass rate on the written exam was greater than or equal to 80%. (No written exam was given this year.)
- Overall pass rate among individuals for all portions of the exam was greater than or equal to 75%. (100% of the individuals passed all portions of the exam at each unit.)

b. Findings

Two Unit 3 crews failed the dynamic simulator portion of the exam. This resulted in a Green finding (MC 609, Appendix I, page 8). The crew failures are more than minor (credible effect on safety) because the rate is 20% and the deficiencies reflected the potential inability of the crews to take appropriate safety related actions in response to actual emergency conditions. Based on the percentage of crew failures (20% - 2 of 10 crews examined failed), the finding was characterized by the SDP as having very low risk significance. The crews failed to successfully complete a "crew critical task," which measured each crew's ability to place and maintain the reactor in a safe operational or shutdown condition. No violation of NRC requirements was identified. **(FIN 50-423/01-09-01)**

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspector assessed the maintenance risk associated with the planned corrective maintenance activities involving the replacement of two relief valves, one in each of the redundant spent fuel pool cooling (SFC) train heat exchangers. Because of the interconnection of the down stream piping, both SFC trains were required to be removed from service to accomplish the repairs. The inspector evaluated the spent fuel pool heat-up rate calculations and assessed operator controls and procedural requirements for spent fuel pool temperature monitoring and the termination temperature for the work activities.

The inspector observed the control room briefing, conducted by the lead maintenance personnel, and confirmed that the discussed sequence of operations was consistent with the documented work plan, which included input from the responsible system engineer. Contingency plans were checked to ensure allowance for the restoration of one SFC heat exchanger upon short notice or for completing the work on only one train, and to confirm pre-staging of flange material to close a loop for emergency restoration of the SFC function. The inspector interviewed the cognizant engineering personnel regarding post maintenance, hydrostatic test requirements and controls for the SFC system refill and return to operation. After completion of this maintenance activity and the restoration of SFC, the inspector verified that the duration of the work was within the planned time and the final spent fuel pool temperature rise was well below the highest heat-up estimate.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspector reviewed the following Operability Determinations (ODs):

- MP3-056-01 The accident flow rates documented in calculation 98IST-01641-M3 are not correct for several safety injection and reactor coolant system check valves. These flow rates were used in the IST program to verify the open function of the check valves.
- MP3-057-01 The most limiting main steam line break (MSLB) used for qualification of the electrical equipment qualification (EEQ) components in the main steam valve building (MSVB) may no longer be bounding due to an error in break mass and energy release calculation by Westinghouse.

For OD MP3-056-01, the inspector verified that the engineering justification for operability was sound by interviewing the system engineer responsible for preparing the OD and reviewing certain supporting documentation provided by the nuclear steam system supplier (Westinghouse reference: NSD-SAE-ESI-99-326) for the accumulator check valve testing. The inspector also reviewed the results of surveillance testing for some of the subject check valves, conducted with the reactor core off loaded during the last refueling outage (3R07) in February 2001. By examining the relevant piping and instrumentation drawings, the inspector confirmed that the flows established by the full-flow, safety injection tests conducted during 3R07 provided evidence of the open function, and therefore of an operable status, for all the check valves affected by this OD.

With respect to OD MP3-057-01, which was prepared to show that the EEQ components in the MSVB were operable under updated environmental criteria, the licensee assumed a break size of 0.5 ft² to be the worst case steam line break. However, the inspector's review of the mass and energy release data provided in two Westinghouse letters, NEU-01-053 dated October 1, 2001, and NEU-01-059 dated November 26, 2001, indicated that a break of 0.3 or 0.4 ft² would result in a higher temperature in the MSVB because a break of these sizes would not cause automatic isolation of the main steam isolation valves, resulting in a longer heat-up time in the MSVB.

The licensee subsequently revised their OD documented in Memorandum NE-01-F-351 dated December 27, 2001. The inspector reviewed this document and questioned the licensee's use of the ambient temperature documented in the qualification test to justify the post-MSLB equipment surface temperature. During the transient, the ambient temperature would be higher than the equipment surface temperature. The inspector reviewed the final version of NE-01-F-351, dated January 10, 2002, which included credit for procedurally-driven operator actions to close the atmospheric dump isolation valves. In this final document, the licensee provided adequate justification for the

equipment whose qualified temperatures did not envelope the newly calculated post-MSLB temperature.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspector reviewed the in-progress work controls, the field documentation, and the post maintenance testing (PMT) associated with two automated work orders (AWOs M3-01-08639 & 10364), both involving on-line corrective maintenance on the "B" feedwater loop containment isolation valve, 3FWS*CTV41B. The inspector verified that each AWO, involving separate component valve and valve assembly replacements, could be worked in series and addressed by the same PMT provision. The inspector discussed the ongoing work with the maintenance supervisor and witnessed the completion of valve restoration activities, including coordination with the control room operators for manipulating the valve controls to facilitate proper PMT verification.

Additionally, the inspector observed the conduct of a surveillance test (discussed in Section 1R22 of this inspection report), which also served as the PMT for restoration of the Train "A" charging pump cooling (CCE) pump to an operable status after the conduct of corrective maintenance to repair a bearing oil leak.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspector reviewed licensee performance related to the following surveillance tests:

- SP 3443D21 Protective Set Cabinet IV Operational Test
- SP 3626-6 Service Water Pump 3SWP*P1C Operational Readiness Test
- SP 3630D.1 Charging Pump Cooling 3CCE*P1A Operational Readiness Test
- SP 3712NA Battery Surveillance Testing

The inspector observed the pre-job briefing and observed portions of the reactor trip set point testing. The inspector also verified that the tests were conducted in accordance with the test procedures, that the acceptance criteria in the procedures conformed with the Technical Specifications, and that the performance of the tests adequately demonstrated equipment operability.

On November 15, the inspector observed service water pump operability testing. The inspector verified that test results for the operability surveillance were in accordance with the technical specifications and surveillance test procedure acceptance criteria, and that performance of the test adequately demonstrated equipment operability.

On December 18, the inspector witnessed the conduct of the CCE surveillance. The inspector observed the briefing of the control room shift involved with the implementation of the test and discussed the system test parameters and acceptance criteria with the reactor operator performing the surveillance at the main control board. The adequacy of communications with both the plant equipment operator in the field and the in-service test engineer at the CCE pump were checked during the data retrieval process and during subsequent system restoration. Since this surveillance test was being performed as part of the PMT to return the 3CCE*P1A pump to an operable status after labyrinth seal replacement, the inspector also verified that the sections of SP 3630D.1 that were not performed had been appropriately identified as "not applicable" to the determination of operability for the CCE system.

The inspector's review of the battery test results identified an error in the correction factor for the specific gravity of one the cells. The inspector determined that this error did not affect the acceptance result of the test and confirmed, with the issuance of CR-01-12272, that the licensee had appropriately entered this observation into the corrective action program.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Occupational Radiation Safety [OS]

2OS3 Radiation Monitoring Instrumentation

Refer to NRC Inspection Report 50-336/01-09, Section 2OS3 for specific details.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification

Refer to NRC Inspection Report 50-336/01-09, Section 4OA1 for specific details.

4OA6 Meetings, including Exit

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. Schwarz and other members of licensee management at the conclusion of the inspection. The licensee acknowledged the findings presented.

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

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

a. List of Items Opened, Closed and Discussed

Opened and Closed During this Inspection

50-423/01-09-01	FIN	Licensee requalification exam results (1R11)

b. List of Acronyms Used

AWO	automated work order
CCE	charging pump cooling
CR	condition report
EEQ	electrical equipment qualification
MSLB	main steam break line
MSVB	main steam valve building
OD	operability determination
PMT	post maintenance testing
SDP	significance determination process
SFC	spent fuel pool cooling