



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I**
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

November 16, 2012

Mr. David A. Heacock
President and Chief Nuclear Officer
Dominion Resources
5000 Dominion Blvd.
Glen Allen, VA 23060-6711

**SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 – NRC EVALUATED
EMERGENCY PREPAREDNESS EXERCISE – INSPECTION REPORT NOS.
05000336/2012503 AND 05000423/2012503**

Dear Mr. Heacock:

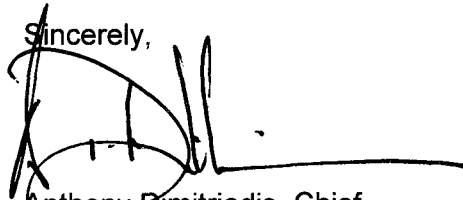
On October 4, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Millstone Power Station, Units 2 and 3. The enclosed inspection report documents the inspection results, which were discussed in a debrief meeting on August 24, 2012, with Stephen E. Scace, Site Vice President, and other members of your staff. A final exit meeting was conducted via a telephone conference on October 4, 2012, also with Mr. Scace and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The enclosed inspection report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it has been entered into the corrective action program (CAP), the NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy. If you contest the finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Millstone. Additionally, if you disagree with the cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region I, and the Millstone NRC Resident Inspector.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room and from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

A handwritten signature in black ink, appearing to read 'Anthony Dimitriadis', with a long horizontal line extending to the right.

Anthony Dimitriadis, Chief
Plant Support Branch 1
Division of Reactor Safety

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

Enclosure:
NRC Inspection Report Nos. 05000336/2012503 and 05000423/2012503
w/Attachment: Supplemental Information

cc w/encl:
S. Coleman, RAC, FEMA Region I

cc w/encl: Distribution via ListServ

D. Heacock

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room and from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Anthony Dimitriadis, Chief
Plant Support Branch 1
Division of Reactor Safety

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

Enclosure:
NRC Inspection Report Nos. 05000336/2012503 and 05000423/2012503
w/Attachment: Supplemental Information

cc w/encl:
S. Coleman, RAC, FEMA Region I

cc w/encl: Distribution via ListServ

DOCUMENT NAME: G:\DRS\Plant Support Branch 1\Barr\EP Ex12 Millstone\Millstone EP EX 2012 Report.docx
ADAMS ACCESSION NUMBER: ML12324A008

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-336, 50-423

License No.: DPR-65, NPF-49

Report No.: 05000336/2012503 and 05000423/2012503

Licensee: Dominion Nuclear Connecticut, Inc.

Facility: Millstone Nuclear Power Station, Units 2 and 3

Location: Waterford, CT 06385

Dates: August 20, 2012 – October 4, 2012

Inspectors: S. Barr, Senior Emergency Preparedness Inspector, DRS, Region I (Lead)
J. Ambrosini, Senior Resident Inspector, DRP, Region I
B. Haagensen, Resident Inspector, DRP, Region I
S. LaVie, Senior Emergency Preparedness Specialist, NSIR
W. Lange, Emergency Preparedness Specialist, NSIR (Observer)

Approved by: Anthony Dimitriadis, Chief
Plant Support Branch 1
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000336/2012503, 05000423/2012503; 8/20/2012-10/4/2012; Millstone Power Station, Units 2 and 3; Emergency Preparedness Exercise Evaluation.

This was an announced inspection conducted by one region-based inspector, two resident inspectors, and one headquarters-based inspector. One finding of very low safety significance (Green) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). The cross-cutting aspect was determined using IMC 0310, "Components Within the Cross Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Emergency Preparedness

- **Green.** The NRC identified a non-cited violation (NCV) associated with emergency preparedness planning standard 10 CFR 50.47(b)(4), and the requirements of Sections IV.B and IV.C of Appendix E to 10 CFR Part 50. Specifically, Dominion did not maintain in effect the Millstone Units 2 and 3 emergency action level (EAL) schemes by not providing operations procedures for obtaining reactor coolant samples once a safety injection signal has occurred. These deficiencies adversely affected the ability of the licensee to properly classify events involving the loss of the fuel clad fission product barrier.

The inspection team determined that the failure by Dominion to provide the proper operating procedures for operators to adequately implement their respective unit's EALs was a performance deficiency that was reasonably within their ability to foresee and prevent. The finding is more than minor because it is associated with the emergency response organization (ERO) attribute of the Emergency Preparedness Cornerstone and affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. The inspectors evaluated this finding using the Emergency Preparedness Significance Determination Process (Appendix B to IMC 0609) and determined the finding to be of very low safety significance (Green). Appendix B to IMC 0609, Section 5.4, and Table 5.4-1, were used to reach this determination. The inspector determined that this finding involved an example where an EAL has been rendered ineffective such that any Site Area Emergency would not be declared for a particular off-normal event, but because of other EALs, an appropriate declaration could be made in a degraded manner (e.g., delayed). The finding is related to the cross-cutting area of Problem Identification and Resolution, Corrective Action Program, in that Dominion personnel did not take appropriate corrective actions to address a Risk-Significant Planning Standard (RSPS) issue completely, accurately, and in a timely manner commensurate with the safety significance [P.1(d)]. Specifically, Dominion did not place this issue into the corrective action program and take appropriate action until prompted by the NRC team's findings.

(Section 1EP1)

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness (EP)

1EP1 Exercise Evaluation (71114.01 – 1 sample)

a. Inspection Scope

Prior to the August 21, 2012, emergency preparedness exercise, the NRC inspectors conducted an in-office review of the exercise objectives and scenario, which Dominion had submitted to the NRC, to determine if the exercise would test major elements of the Millstone Power Station Emergency Plan as required by 10 CFR 50.47(b)(14). This overall exercise inspection activity represented the completion of one sample on a biennial cycle.

The exercise evaluation consisted of the following review and assessment:

- The adequacy of Dominion's performance in the biennial full-participation exercise regarding the implementation of the risk-significant planning standards (RSPS) described in 10 CFR 50.47(b)(4), (5), (9), and (10), which are: emergency classification; offsite notification; radiological assessment; and protective action recommendations, respectively.
- The overall adequacy of Dominion's Millstone emergency response facilities with regard to NUREG-0696, "Functional Criteria for Emergency Response Facilities," and Emergency Plan commitments. The facilities assessed were the Control Room Simulator, Operations Support Center (OSC), Technical Support Center (TSC), and Emergency Operations Facility (EOF).
- A review of other performance areas, such as: the Millstone emergency response organization's (ERO's) recognition of abnormal plant conditions; command and control; intra- and inter-facility communications; prioritization of mitigating activities; utilization of repair and field monitoring teams; interface with offsite agencies; staffing and procedure adequacy; and the overall implementation of the emergency plan and its implementing procedures.
- A review of past performance issues from the last NRC Millstone exercise inspection report and Dominion's Millstone EP drill reports, to determine the effectiveness of licensee corrective actions as demonstrated during the August 21, 2012, exercise and to ensure compliance with 10 CFR 50.47(b)(14).
- The licensee's post-exercise critiques, to evaluate Dominion's self-assessment of its ERO performance during the August 21, 2012, exercise and to ensure compliance with 10 CFR 50, Appendix E, Section IV.F.2.g.

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The inspectors reviewed the documents listed in the attachment to this report.

b. Findings

Introduction. The NRC identified an NCV associated with emergency preparedness planning standard 10 CFR 50.47(b)(4), and the requirements of Sections IV.B and IV.C of Appendix E to 10 CFR Part 50. Specifically, Dominion did not maintain in effect the Millstone Units 2 and 3 emergency action level (EAL) schemes for assessing the loss of the fuel clad barrier.

Description. On August 21, 2012, the NRC inspection team observed the Dominion Millstone Unit 3 full scale emergency planning exercise. The exercise scenario included the failure of a reactor coolant pump, which discharged a loose part into the reactor coolant system (RCS). The loose part, in turn, damaged the reactor fuel and a steam generator tube. Per the scenario, the damage to the fuel was intended for the ERO to diagnose a loss of the fuel clad barrier, and the damage to the steam generator tube a loss of the RCS. The basis for the ERO's conclusion that the fuel clad barrier was lost was a dose rate at one foot from an unpressurized RCS sample. The obtaining of the RCS sample during the exercise was simulated, and the sample results were provided to the ERO by a licensee drill controller.

The NRC inspector in the control room simulator identified a discrepancy with the exercise scenario and the actions of the drill controller. During the scenario, an expected safety injection signal had occurred, and one of the automatic actions of this signal is the isolation of the non-safety header of the reactor plant closed cooling water (RPCCW) system. The non-safety header of RPCCW provides the cooling water to the RCS sample sink, which is required to obtain an RCS sample. The inspector identified that without the RCS sample, the ERO would not have been able to diagnose the loss of the fuel clad barrier as provided in the scenario.

Further investigation by the inspector determined that the Unit 3 emergency operating procedures (EOPs) do not provide direction in a timely manner to un-isolate the RPCCW to the RCS sample cooler or the post accident sampling system. The inspector also determined that a similar situation existed with the Millstone Unit 2 EALs, in that Unit 2's reactor building component cooling water isolates in a similar manner and would prevent the timely gathering and assessment of a RCS sample for EAL purposes. The licensee had earlier opportunities to identify this discrepancy with both units. In 2004, the licensee initiated CR-04-08128, which identified that the Unit 2 RBCCW would isolate on a safety injection signal. In 2008, Dominion staff initiated CR-08-06929, which identified that RPCCW isolates on a safety injection signal and sampling would not be possible. Dominion responded to the inspector's concerns by stating that, for Unit 3, EOP 35 E-3, Steam Generator Tube Rupture, Step 33, has steps to un-isolate RPCCW for sampling purposes. For Unit 2, chemistry procedure CP 2802N, Primary Systems Sampling and Analysis, provides guidance for a chemistry technician to contact the control room if sampling is required when RBCCW has isolated. The inspector determined that while these procedures may provide guidance on how to correct the EAL deficiency, neither procedure would be readily referred to by operators involved in mitigating an emergency

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event. The inspector did determine, however, that other thresholds in the Fuel Clad Barrier EAL would eventually allow the operators to determine that barrier had failed.

The NRC identified during this inspection that Dominion had failed to properly recognize and correct the deficiencies in both units' operating procedures that rendered the "dose rate at one foot from an unpressurized RCS sample" EAL impracticable for a scenario such as that presented in the Unit 3 EP exercise scenario. This type of scenario, in which one initiating event could reasonably cause the loss of two fission product barriers, could result in the declaration of a Site Area Emergency (SAE).

In response to the issues identified by the inspector, Dominion entered this issue into their corrective action plan and initiated CR-12-485651 to address the deficiencies identified by the inspector.

Analysis. The inspection team determined that the failure by Dominion to provide the proper operating procedures for operators to adequately implement their respective unit's EALs was a performance deficiency that was reasonably within their ability to foresee and prevent. The finding is more than minor because it is associated with the Emergency Response Organization (ERO) attribute of the Emergency Preparedness cornerstone and affected the cornerstone objective to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

The inspectors evaluated this finding using the Emergency Preparedness Significance Determination Process (Appendix B to IMC 0609) and determined the finding to be of very low safety significance (Green). Appendix B to IMC 0609, Section 5.4, and Table 5.4-1, were used to reach this determination. The inspector determined that this finding involved an example where an EAL has been rendered ineffective such that any SAE would not be declared for a particular off-normal event, but because of other EALs, an appropriate declaration could be made in a degraded manner (e.g., delayed), a Green finding per Table 5.4-1.

The finding is related to the cross-cutting area of Problem Identification and Resolution, Corrective Action Program, in that Dominion personnel did not take appropriate corrective actions to address the RSPS issue completely, accurately, and in a timely manner commensurate with the safety significance [P.1(d)]. Specifically, Dominion did not place this issue into the corrective action program and take appropriate action until prompted by the NRC team's findings.

Enforcement. Title 10 of the Code of Federal Regulations (CFR), Section 50.54(q)(2) requires, in part, that a licensee shall follow and maintain the effectiveness of an emergency plan that meets the requirements in Appendix E to this Part and, for nuclear power reactor licensees, the planning standards of § 50.47(b).

10 CFR 50.47(b)(4) requires, in part, that a standard emergency classification and action level scheme is in use by the licensee, the bases of which include facility system and effluent parameters.

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Contrary to the above, Dominion did not follow and maintain an emergency plan using a standard emergency classification and action level scheme. Specifically, Dominion did not provide adequate operating procedures to adequately implement the Fuel Cladding Barrier of the Unit 2 and Unit 3 EAL tables. As a result, this deficiency adversely affected licensee's ability to classify an emergency event involving failures of fission product barriers. Because this issue was of very low safety significance (Green) and has been entered into the CAP (CR-12-485651), this issue is being treated as an NCV, consistent with the NRC's Enforcement policy. (NCV 05000336/2012503-001 and 05000423/2012503-001, Failure to Adequately Implement Fuel Clad Barrier EALs)

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification (71151 – 3 samples)

a. Inspection Scope

The inspectors reviewed data for the Millstone EP PIs, which are: (1) Drill and Exercise Performance (DEP); (2) Emergency Response Organization (ERO) Drill Participation; and, (3) Alert and Notification System (ANS) Reliability. The last NRC EP inspection at Millstone was conducted in August 2011, so the inspectors reviewed supporting documentation from EP drills, training records, and equipment tests from the third calendar quarter of 2011 through the second quarter of 2012, to verify the accuracy of the reported PI data. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 6. This inspection activity represented the completion of three samples.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

On August 24, 2012, the inspectors presented the preliminary results of this inspection to Mr. S. Scace, Millstone Site Vice President, and other members of the Dominion staff. On October 4, 2012, the inspectors conducted a phone teleconference exit meeting, also with Mr. Scace and other members of the Dominion staff. No proprietary information was provided to the inspectors during this inspection.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

S. Scace, Site Vice President
D. Smith, Emergency Preparedness Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000336 and 05000423/2012503-001 NCV Failure to Adequately Implement Fuel Clad Barrier EALs

LIST OF DOCUMENTS REVIEWED

Section 1EP1: Exercise Evaluation

Millstone August 21, 2012, Emergency Exercise Data Package
Millstone Power Station Emergency Plan, Revision 44
Millstone Emergency Response Drill Reports, January 2011 – August 2012
Millstone Power Station Emergency Plan Implementing Procedures
Millstone Power Station Emergency Plan Administrative Procedures
EOP 35 E-3, Steam Generator Tube Rupture, Revision 23
CP 2802N, Primary Systems Sampling and Analysis, Revision 001-04
Condition Reports: CR-04-08128; CR-08-06929; CR-12-485651

Section 4OA1: Performance Indicator Verification

EP-AA-103, Emergency Preparedness Performance Indicators, Revision 2
ERO Drill Participation PI data, July 2011 – June 2012
Alert Notification System PI data, July 2011 – June 2012
DEP PI data, July 2011 – June 2012

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ANS	Alert and Notification System
CFR	Code of Federal Regulations
CR	Condition Report
DEP	Drill and Exercise Performance
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EAL	Emergency Action Level
EOF	Emergency Operations Facility
EOP	Emergency Operating Procedures
EP	Emergency Preparedness
ERO	Emergency Response Organization
IMC	Inspection Manual Chapter
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OSC	Operations Support Center
PARS	Publicly Available Records
PI	Performance Indicator
RCS	Reactor Coolant System
RPCCW	Reactor Plant Closed Cooling Water
RSPS	Risk Significant Planning Standard
SAE	Sight Area Emergency
SDP	Significance Determination Process
TSC	Technical Support Center