



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

September 13, 2017

Docket No. 05000245

License No. DPR-21

Mr. Daniel G. Stoddard  
President and Chief Nuclear Officer  
Dominion Energy, Inc.  
Innsbrook Technical Center  
5000 Dominion Blvd.  
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION UNIT 1 – SAFE STORAGE INSPECTION  
REPORT NO. 05000245/2017008

Dear Mr. Stoddard:

On August 28 - 31, 2017, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at the Millstone Power Station Unit 1 (MS-1). The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of observations by the inspector, interviews with personnel, and a review of procedures and records. The results of the inspection were discussed with John Daugherty, Site Vice President, and other members of your organization on August 31, 2017, at the conclusion of the inspection. The enclosed report presents the results of this inspection. No findings of safety significance were identified.

Current NRC regulations and guidance are included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **Radioactive Waste; Decommissioning of Nuclear Facilities; How We Regulate**; then **Regulations, Guidance and Communications**. The current Enforcement Policy is included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents**; then **Enforcement Policy (Under 'Related Information')**. You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

D. Stoddard

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No reply to this letter is required. Please contact Katherine Warner at 610-337-5389 if you have any questions regarding this matter.

Sincerely,

***/RA/***

Raymond J. Powell, Chief  
Decommissioning and Technical  
Support Branch  
Division of Nuclear Materials Safety

Enclosure: Inspection Report No. 05000245/2017008

cc: w/encl: Distribution via ListServ

D. Stoddard

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

INSPECTION REPORT

Inspection No.	05000245/2017008
Docket No.	05000245
License No.	DPR-21
Licensee:	Dominion Energy, Inc. (Dominion)
Facility:	Millstone Power Station, Unit 1 (MS-1)
Location:	Rope Ferry Road Waterford, CT 06385
Inspection Dates:	August 28 - 31, 2017
Inspector:	Katherine Warner, Health Physicist Decommissioning and Technical Support Branch Division of Nuclear Materials Safety
Approved By:	Raymond J. Powell, Chief Decommissioning and Technical Support Branch Division of Nuclear Materials Safety

## **EXECUTIVE SUMMARY**

Dominion Energy, Inc.  
Millstone Power Station Unit 1  
NRC Inspection Report No. 05000245/2017008

An announced safety inspection was conducted on August 28 – 31, 2017 at MS-1. The inspector reviewed MS-1's activities related to the safe storage of radioactive material, including site operations, engineering, maintenance, plant support activities, management oversight, and corrective action program (CAP) implementation. The inspection consisted of observations by the inspector, interviews with Dominion personnel, a review of procedures and records, and plant walk-downs. There are currently no ongoing decommissioning activities being conducted at MS-1. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program." Based on the results of this inspection, no findings of safety significance were identified.

## **REPORT DETAILS**

### **1.0 Background**

MS-1 went into commercial operation on December 28, 1970, and permanently ceased operations on July 17, 1998. Subsequently, the fuel was permanently removed from the reactor vessel and is currently stored in the spent fuel pool (SFP). MS-1 is in safe storage (SAFSTOR) and Dominion plans to actively decommission MS-1 in parallel with the decommissioning of the operational units after they have been permanently shut down. Operations and radiation protection/chemistry personnel from Millstone Unit-2 (MS-2) provide routine support functions to MS-1.

The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in IMC 2561.

### **2.0 SAFSTOR Performance and Status Review**

a. Inspection Scope (Inspection Procedures 36801, 37801, 40801, 60801, 64704, 71801, 83750, 84750, 86750)

An announced safety inspection was conducted on August 28 – 31, 2017. The inspection consisted of observations by the inspector, interviews with Dominion personnel, a review of procedures and records, and plant walk-downs. The inspector reviewed the SAFSTOR program as outlined in the defueled safety analysis report, and Technical Specifications (TS) and assessed the adequacy of management oversight of SAFSTOR responsibilities for the MS-1 facility. Specifically, the inspector reviewed the decommissioning management and staff organization and Dominion's implementation of SAFSTOR activities related to safe storage of radioactive material. The inspector also conducted a walk-down to assess the material condition of the MS-1 facility (reactor building, the fuel-handling floor, building exterior, the roof-mounted decay heat removal system, and balance of plant) and discussed any design changes or modifications since the previous inspection.

The inspector reviewed MS-1's program for the safe wet storage of spent fuel. The inspector performed walk-downs of the SFP, the MS-2 control room, and associated support systems to assess material condition, configuration control, and system operation.

The inspector reviewed activities, components, and documentation associated with the following SAFSTOR programs: occupational exposure, fire protection, radioactive effluent control, site radiological environmental monitoring program (REMP), maintenance and surveillance, and decommissioning organization and staffing. The inspector reviewed radiological survey reports, radioactive liquid effluent release permits, the annual REMP report, the annual effluent release report, condition reports, and MS-1 firefighting strategies and procedures.

The inspector reviewed Dominion fleet audit reports and CAP documents associated with MS-1 to determine if issues were being appropriately identified, assessed and reviewed and that corrective actions were being appropriately implemented.

b. Observations and Findings

The inspector confirmed that the SAFSTOR program was being effectively implemented. The inspector verified that the maintenance and surveillance program for systems and components had been conducted in accordance with the TS requirements and established procedures. The inspector also confirmed that no dismantlement or decommissioning activities were performed since the previous inspection. The inspector determined that MS-1 was safely storing spent fuel in wet storage.

The inspector noted that the project to replace the MS-1 transformer had been completed since the last inspection. The inspector reviewed the design change package and noted that while the capacity of the new transformer at 2.5MVA is less than the old transformer at 14MVA, the new transformer should be adequate for current load demands as well as future decommissioning load demands. The inspector noted that progress was being made on a design change to the MS-1 central monitoring station which includes upgrades to exterior temperature indications for decay heat removal components.

As previously indicated, MS-2 operations support operations at MS-1. The inspector reviewed MS-1's firefighting strategies and noted that the fire brigade staffed from MS-2 and Millstone Unit 3's operations would respond in the event of a fire at MS-1. Fire drills are routinely performed at MS-1 and staff are familiarized with MS-1 during training. The inspector noted that while the fire header at MS-1 is usually kept drained, the fire header is tested routinely.

The annual radiological effluent and the annual REMP reports demonstrated that all calculated doses were below regulatory dose criteria of 10 Code of Federal Regulations 50, Appendix I. The inspector noted that Dominion had one shipment of Class A dry active waste shipped for offsite disposal from MS-1 since the last inspection. The inspector discussed shipping requirements and processes with Millstone Power Station staff.

Findings or issues identified from audits, plant equipment operator's rounds, and staff observations were entered into the CAP. Dominion effectively addressed identified issues, implemented corrective actions, and tracked them to closure. Condition reports and corrective actions appeared to be prioritized and evaluated commensurate with their safety significance.

c. Conclusions

Based on the results of this inspection, no findings of safety significance were identified.

**3.0 Exit Meeting Summary**

On August 31, 2017, the inspector presented the inspection results to John Daugherty, Site Vice President, and other members of Dominion's staff. The inspector confirmed that no copies of proprietary information were used during this inspection and none were removed from the site.

## **PARTIAL LIST OF PERSONS CONTACTED**

### **Licensee**

J. Armstrong	Nuclear Engineer III
W. Brown	Licensing Technical Lead
D. Delbiondo	Senior Safety Specialist
C. Dix	Health Physics Supervisor Site
C. Flory	Nuclear Technical Specialist
M. Lamoureux	Plant Equipment Operator
J. Langan	Manager, Nuclear Station Licensing
T. Olsow	Licensing Engineer
G. Sturgeon	Operations Nuclear Specialist MS-1
P. Tulba	Nuclear Hazardous Materials Specialist

## **ITEMS OPEN, CLOSED, AND DISCUSSED**

None

### **LIST OF DOCUMENTS REVIEWED**

2016 Radioactive Effluent Release Report and Off-Site Dose Calculation Manual (REMODCM), October 1, 2016

2016 Annual Radiological Environmental Operating Report, April 29, 2017

2016 and 2017 Millstone Unit 1 Liquid Waste Water Discharge Permits

Audit 15-20; Offsite Dose Calculation Manual/Radiological Environmental Monitoring Program/Environmental Monitoring Program (OCDM/REMP/EPP), December 15, 2015

C SP 600.22-007, Unit 1 Dry Fire Hose Station Flow Test, Revision 000

Defueled Safety Analysis Report

Millstone Nuclear Power Station Unit 2, Health Physics Beta-Gamma Air Sample Report, August 28, 2017

Millstone Unit 1 Fire Fighting Strategies, April 2005

Millstone Unit 1 Exposure Report, June 16, 2017

Millstone Unit 1 Exposure Report, January 3, 2017

Millstone Unit 1 Defueled Technical Requirements Manual

Millstone Power Station Unit 1 Permanently Defueled Technical Specifications (TS)

MP1-15-01006, Millstone Unit 1 ESST Transformer Replacement, October 18, 2016

MP1-15-01051, MP1 SFPI PLC Upgrades, June 28, 2017

MPS1-EVAL-2016-0008, Revision 0

MS-1 Operational Issues Tracking Report

MS-1 Radiation Surveys 2017

ONP 532, Loss of Spent Fuel Pool Cooling, Revision 006-00

Package Characterization Report, C20362, January 9, 2017

Radiation Work Permit (RWP) 1170008 – NRC, Task 1

RP-AA-220, Millstone Unit 1 HP – Survey Schedule Check Sheet, August 21, 2017

SA-AA-115, Conduct of Fire Drills, December 14, 2015, Revision 0

Uniform Low-Level Radioactive Waste Manifest Shipping Paper, 16-152, January 19, 2017



Condition Reports:

1046230	1049443	1053296
1046240	1050266	1053665
1046250	1050328	1055547
1046375	1053095	
1058356	1061220	1071890
1059688	1070341	1073551

**LIST OF ACRONYMS USED**

CAP	Corrective Action Program
Dominion	Dominion Energy, Inc.
IMC	Inspection Manual Chapter
MS-1	Millstone Power Station Unit 1
MS-2	Millstone Power Station Unit 2
NRC	U.S. Nuclear Regulatory Commission
REMP	Radiological Environmental Monitoring Program
SAFSTOR	Safe Storage
SFP	Spent Fuel Pool
TS	Technical Specification