UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

August 7, 2019

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. 05000245/2019001

Dear Mr. Stoddard:

On June 3 – July 25, 2019, 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 Jeffry Langan, Manager – Nuclear Station Licensing, and other members of your organization on July 25, 2019, at the conclusion of the inspection. The enclosed report presents the results of this inspection. No findings of safety significance were identified.

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.

Current NRC regulations and guidance are included on the NRC's website at www.nrc.gov; select Radioactive Waste; Decommissioning of Nuclear Facilities; then Regulations, Guidance and Communications. The current Enforcement Policy is included on the NRC's website at 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).

No reply to this letter is required. Please contact Harry Anagnostopoulos at 610-337-5322 if you have any questions regarding this matter.

Sincerely,

/RA/

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor HP Branch
Division of Nuclear Materials Safety

Enclosure: Inspection Report No. 05000245/2019001

cc: w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

INSPECTION REPORT

Inspection No.	05000245/2019001
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:	June 3 – July 25, 2019
Inspector:	Harry Anagnostopoulos, Senior Health Physicist Decommissioning, ISFSI, and Reactor HP Branch Division of Nuclear Materials Safety
Approved By:	Anthony Dimitriadis, Chief Decommissioning, ISFSI, and Reactor HP Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Dominion Energy, Inc.
Millstone Power Station Unit 1
NRC Inspection Report No. 05000245/2019001

An announced safety inspection was conducted on June 3 – July 25, 2019 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, 62801, 71801, 83750, 84750, 86750, 71111.01)

An announced safety inspection was conducted on June 3 – July 25, 2019 (on-site from June 3 – June 5, 2019). 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, former radioactive waste processing areas, building exterior, and condenser bay) 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 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, and condition reports.

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 (One Minor Violation)

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 entered the SFP cooling pump and heat exchanger areas to observe equipment and material conditions.

The inspector noted that MS-2 health physics support operations at MS-1 by performing surveys, providing radiation protection coverage for work, and providing RP briefings as necessary.

The inspector accompanied Millstone engineering staff and witnessed the conduct of the routine structural monitoring program as it applied to MS-1. The engineering inspections are conducted every five years.

The inspector examined liquid waste processing activities at MS-1 and toured the areas involved in processing the groundwater that infiltrates into the Underground Ventilation Duct and the Site Stack Sump.

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.

The inspector reviewed information relevant to the status of the decommissioning trust fund and its expenditures, as provided by Dominion during the on-site inspection period, with no concerns identified.

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 Part 50, Appendix I.

Minor Violation

The inspector looked at the implementation of the Maintenance Rule at MS-1, and reviewed open work-orders for significance & to determine if any backlog was of concern. During the review of the Maintenance Rule, the inspector identified one minor violation of 10 CFR 50.65(a)(2). Specifically:

10 CFR 50.65 (a)(1), requires, in part, that the holders of an operating license shall monitor the performance or condition of structures, systems, or components (SSCs) within the scope of the rule as defined by 10 CFR 50.65 (b), against licensee-established goals, in a manner sufficient to provide reasonable assurance that such SSCs are capable of fulfilling their intended functions.

10 CFR 50.65 (a)(2) states, in part, that monitoring as specified in 10 CFR 50.65 (a)(1) is not required where it has been demonstrated that the performance or condition of an SSC is being effectively controlled through the performance of appropriate preventive maintenance, such that the SSC remains capable of performing its intended function.

Contrary to the above, as of June 5, 2019, the licensee failed to demonstrate that the tornado dampers, located on the roof of the reactor building, were capable of performing their intended function through appropriate preventative maintenance.

The MS-1 reactor building is equipped with tornado dampers which serve to automatically relieve air pressure from inside of the building, thereby protecting the building structure and integrity, in the event of a tornado. In addition, the tornado dampers were modified with a manually-operated opening system as part of a mitigation strategy in the event of an extended loss of spent fuel pool cooling (SFPC) accident. This accident is described in the Millstone Power Station Unit 1 Defueled Safety Analysis Report, section 3.2.1.3.3.

The tornado dampers consist of a series of louvres mounted in the roof, above the reactor cavity and near the spent fuel pool. The louvres are held closed by gravity and are protected by a large enclosure on the roof of the building. The louvres are designed to swing open automatically should a tornado cause a large difference in air pressure. The louvres were fitted with a manual cable and hand-crank assembly to allow an operator to manually open them (and hold them open) to vent excess heat and humidity from the SFP to the outside air in the event of an extended loss of SFPC. The tornado dampers are an “active component” in that they have a series of moving parts that must operate to maintain their function.

The tornado dampers were scoped-into the maintenance rule at MS-1 under a 10 CFR 50.65(a)(2) status. Dominion was performing a visual inspection of the tornado dampers every five years as part of a Condition Monitoring Program (“Condition Monitoring of Structures”, C EN 104I, Revision 013). This program is designed to examine inactive components, such as structural steel and concrete monoliths, for degradation through visual inspection and measurement of corrosion and cracking. The program contained no performance or acceptance criteria for the tornado dampers (an active, moving component).

The inspector examined the tornado dampers from the roof and observed debris on the dampers, some corrosion on the dampers, significant corrosion on the manual-operating system components, and materials inappropriately stored inside the damper enclosure. Further review indicated that similar conditions were documented by Dominion during a program inspection in 2015, and that the damper system had not been operated since that discovery (to demonstrate that they would function as expected). Dominion indicated that functionality was established through “visual observation and engineering judgement”.

Contrary to 10 CFR 50.65 (a)(2), Dominion had not been demonstrating that the tornado dampers remained capable of performing their intended function. The NRC Enforcement Manual, section 2.1.11 indicates that “the performance demonstration must be technically justifiable and reasonable”. Declaring that the dampers were functional based only upon periodic visual inspection, particularly after debris and corrosion were discovered, was not technically justifiable.

Dominion documented the inspector's concerns in condition report CR1127361 and wrote work order 53203251503 to perform preventative maintenance on the dampers and to manually cycle the damper system to demonstrate functionality. This was completed on July 24, 2019. Dominion has drafted a new recurring task to maintain and cycle the tornado dampers.

Although this issue should be corrected, it constitutes a violation of minor significance that is not subject to enforcement action in accordance with Section 2 of the NRC's Enforcement Policy.

c. Conclusions

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

3.0 Exit Meeting Summary

On July 25, 2019, the inspector presented the inspection results to Jeffry Langan, Manager – Nuclear Station Licensing, and other members of Dominion's staff via teleconference. 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

R. Castle	Maintenance Supervisor
C. Dix	Health Physics Supervisor
L. Djoukam	Licensing Engineer II
E. Flemming	Engineering Technician I
M. Goolsby	Superintendent Nuclear Unit 2
B. Graber	Radioactive Analysis Group Supervisor
J. Langan	Manager Nuclear Station Licensing
W. McCollum	Nuclear Technical Specialist III
J. Morton	Radiation Protection Technician
S. Tolley	Engineer III

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Annual Physical Inventory of Millstone Unit 1 Fuel Related SNM, dated 1/25/2018
Audit 17-04: Fire Protection and SPS Refueling, dated 7/20/2017
C-EN-1041, “Condition Monitoring of Structures”, Revision 013
Chemistry results, Unit 1 Spent Fuel Pool, 4/5/2018 to 4/4/2019
Defueled Technical Requirements Manual, Unit 1, Change No. 57
Defueled Technical Specifications, Unit 1, Change No. 120
DOM-QA-1, “Nuclear Facility Quality Assurance Program Description”, Revision 27
“Dominion Nuclear Connecticut, Inc. Millstone Power Station Unit 1 Decommissioning Trust Fund Disbursement Revision to Previous Thirty-Day Written Notification”, 17-289, dated 8/22/2017
“Dominion Nuclear Connecticut, Inc. Millstone Power Station Unit 1 Decommissioning Funding Status Report”, 19-048, dated 3/26/2019
ETE-MP-2015-1106 (full report including Attachment 5), dated 12/17/2015
Finding 16-11-05M: Maintenance & NAPS/SPS QC Activities, dated 1/19/2017
List, 10 CFR 50.59 Screening and Evaluations, dated 5/23/2019
List, Major Components Under the Maintenance Rule, dated 5/22/2019
List, Millstone Unit 1 Certified Fuel Handlers (CFH), dated 5/20/2019
List, Temporary and Permanent Facility Modifications, dated 5/23/2019
List, Unit 1 Operations Operational Issues Tracking (open work requests)
Meeting minutes, Millstone Facility Safety Review Committee, dated 12/14/2018
“Millstone Power Station Unit 1 Defueled Safety Analysis Report”, Revision 14, 6/29/2017
Radiological surveys, Millstone Unit-1 (most recent routine surveys)
SP 852, “Spent Fuel Pool Chemistry Control”, Revision 004-02

Work Orders:
53102526904, B4C Blackness Testing
53102509743, Spent Fuel Pool Island Instrument Calibration Data Sheet
53102920246, Physical Inventory of Fuel SNM (U1 Only)
53102445515, Spent Fuel Rack Surveillance Program Boron Carbide

53203251503, Reactor Bldg Tornado Dampers Inspection
53102438748, U1 Reactor Building Roof Inspection
53102507527, Maintenance Rule Structural Inspection
53102541264, Maintenance Rule Structural Inspection
53102900012, Unit 1 Reactor Bldg Roof Dampers not functioning correctly
53203251503, Reactor Bldg Tornado Dampers Inspection (2019 demonstrating functionality)

Condition Reports:

1017089	1091266	1104823
1067839	1091411	1112671
1069125	1091489	1112691
1087137	1091488	1117868
1087834	1093516	1119651
1088132	1094561	1120401
1088911	1097737	1120451
1091175	1099010	1124489
1091176	1099561	1127361
1091181	1100832	
1091184	1102793	

LIST OF ACRONYMS USED

CAP	Corrective Action Program
CFR	Code of Federal Regulations
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
SFPC	Spent Fuel Pool Cooling
TS	Technical Specification