



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

January 20, 2022

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

**SUBJECT: MILLSTONE POWER STATION, UNIT 2 – POST-APPROVAL SITE
INSPECTION FOR LICENSE RENEWAL - PHASE 4 INSPECTION REPORT
05000336/2021011**

Dear Mr. Stoddard:

On December 17, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed a license renewal site inspection at Millstone Power Station, Unit 2, and discussed the results of this inspection with Mr. Michael O'Connor, Plant Manager, and other members of your staff. The results of this inspection are documented in the enclosed report.

One finding of very low safety significance (Green) is documented in this report. This finding involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation documented in this inspection 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; and the NRC Resident Inspector at Millstone Power Station.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Mel Gray, Chief
Engineering Branch 1
Division of Operating Reactor Safety

Docket No. 05000336
License No. DPR-65

Enclosure:
As stated

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SUBJECT: MILLSTONE POWER STATION, UNIT 2 – POST-APPROVAL SITE
 INSPECTION FOR LICENSE RENEWAL - PHASE 4 INSPECTION REPORT
 05000336/2021011 DATED JANUARY 20, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Number: 05000336

License Number: DPR-65

Report Number: 05000336/2021011

Enterprise Identifier: I-2021-011-0050

Licensee: Dominion Energy Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Unit 2

Location: Waterford, CT

Inspection Dates: December 13, 2021 to December 17, 2021

Inspectors: J. Kulp, Senior Reactor Inspector
K. Mangan, Senior Reactor Inspector
A. Patel, Senior Reactor Inspector
J. Schoppy, Senior Reactor Inspector

Approved By: Mel Gray, Chief
Engineering Branch 1
Division of Operating Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a Post-Approval Site Inspection for License Renewal - Phase 4 inspection at Millstone Power Station, Unit 2, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

Tank Inspection Program Commitments for Age Management Program Not Met			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000336/2021011-01 Open/Closed	None (NPP)	71003
The team identified a non-cited violation of License Condition 2.C.(11). The condition states the Final Safety Analysis Report (FSAR) supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. Dominion Energy Nuclear Connecticut, Inc. (DENC) shall complete these activities no later than July 31, 2015. The inspectors determined that activities to fulfill portions of the Tank Inspection Age Management program and two associated commitments credited to manage the aging affects for the condensate storage tank (CST) and the two fire water storage tanks had not been completed. Specifically, required internal volumetric examinations of the firewater tank bottom and the CST side walls were not performed and required external visual examinations of moisture barriers and caulk used as a moisture intrusion barrier were not completed.			

Additional Tracking Items

None.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2516, "Policy and Guidance for The License Renewal Inspection Program." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

71003 - Post-Approval Site Inspection for License Renewal

The team selected for evaluation eight aging management programs. The team selection of programs was based on risk insights and programs that were enhanced or new under the renewed operating license. The team also considered for selection those programs with monitoring results that were performed for the first time or identified examination or test results not experienced in the past. The inspection performed by the team was conducted as outlined in NRC IP 71003, Phase IV. For the aging management programs selected, the team reviewed records, interviewed plant staff, and conducted plant walk downs to evaluate whether aging management program elements were being implemented in accordance with NRC requirements. The team evaluated the following elements of the aging management program: scope, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience.

The following aging management programs were evaluated by the team:

Post-Approval Site Inspection for License Renewal (8 Samples)

- (1) Electrical Cables and Connectors Not Subject to 10 CFR 50.49 EQ Requirements
- (2) Fire Protection Program
- (3) Flow-Accelerated Corrosion
- (4) Inservice Inspection Program: Systems, Components and Supports
- (5) Alloy 600 Management Program
- (6) Tank Inspection Program
- (7) Structures Monitoring Program
- (8) Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 EQ Requirements

INSPECTION RESULTS

Tank Inspection Program Commitments for Age Management Program Not Met			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000336/2021011-01 Open/Closed	None (NPP)	71003
<p>The team identified a non-cited violation of License Condition 2.C.(11). The condition states the Final Safety Analysis Report (FSAR) supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. Dominion Energy Nuclear Connecticut, Inc. (DENC) shall complete these activities no later than July 31, 2015. The inspectors determined that activities to fulfill portions of the Tank Inspection Age Management program and two associated commitments credited to manage the ageing affects for the condensate storage tank (CST) and the two fire water storage tanks had not been completed. Specifically, required internal volumetric examinations of the firewater tank bottom and the CST side walls were not performed and required external visual examinations of moisture barriers and caulk used as a moisture intrusion barrier were not completed.</p>			
<p><u>Description:</u> The team reviewed Millstone Power Station Unit 2 USFAR, Chapter 15, Section 2.1.24; the license renewal application; and associated approved renewed license NRC safety evaluation report to determine the commitments made for the Age Management Program (AMP) associated with in-scope above ground steel tanks. The team found that Dominion stated that they would develop an AMP that would meet the requirements described in NUREG-1801, Revision 0, <i>Generic Age Management Program</i>, Section XI.M29 "Above Ground Carbon Steel Tanks." Dominion stated that their existing tank inspection program with the addition of two commitments to enhance the program would meet XI.M29 requirements. Updated FSAR Chapter 15 Section 2.1.24 - Commitments states, in part, the following program enhancements will be implemented prior to the period of extended operation:</p> <ul style="list-style-type: none"> • Inspection of sealants and caulking - Appropriate inspections of sealants and caulking used for moisture intrusion prevention in and around aboveground tanks have been performed. These inspections complete the actions required for Commitment Item 22 in Table 15.6-1. • Non-destructive Volumetric Examination of Inaccessible Tank Bottoms - Non-destructive volumetric examination of the in-scope inaccessible locations, such as the external surfaces of tank bottoms, have been performed prior to the period of extended operation. Subsequent inspections will be performed on a frequency consistent with scheduled tank internals inspection activities. These examinations and scheduled subsequent inspections complete the actions required for Commitment Item 23 in Table 15.6-1. <p>The team noted that XI.M29, Aboveground Carbon Steel Tanks, Generic Age Lessons Learned (GALL) Revision 0 states:</p> <ul style="list-style-type: none"> • XI.M29 <u>Preventive Actions</u>: In accordance with industry practice, tanks are coated with protective paint or coating to mitigate corrosion by protecting the external surface of the tank from environmental exposure. Sealant or caulking at the interface edge between the tank and concrete or earthen foundation mitigates corrosion of the 			

bottom surface of the tank by preventing water and moisture from penetrating the interface, which would lead to corrosion of the bottom surface.

For the CST, the team found that caulk examinations were not performed on all the caulk credited to act as a moisture barrier for the CST. Specifically, the team found that the caulk between the concrete missile shield and the tank was inspected from the catwalk above the tank. As a result, only about half the caulked perimeter was inspected. The team noted this caulk is credited as a moisture intrusion prevention barrier for the annulus between the CST wall and the concrete missile shield that surrounds the CST. During the inspection, the team walked down the tank and identified water seeping through the concrete missile barrier and reviewed several condition reports that described moisture leaking through the missile barrier concrete wall. This indicated that the caulk seal between the CST and missile barrier was not intact in some locations. The team concluded that due to the degraded moisture barrier water was collecting in the annulus between the concrete missile shield and steel tank external wall. For the 'A' and 'B' firewater storage tanks, the team observed that there was an absence of caulk or severely degraded caulk at the interface between the tank bottom and the concrete base pad (The fire water tanks do not have a concrete missile barrier).

During walkdowns the team observed that the bottom external surface of all three tanks were inaccessible for examination because the tanks rested on the ground. Additionally, for the CST, the team observed that two-thirds of the external tank wall was inaccessible due to the concrete missile shield covering this external surface. The team reviewed work orders that documented internal inspection of the CST and firewater storage tanks. The team's review determined the required volumetric examinations (ultrasonic tests) of the sides of the CST and bottom of the fire water tanks had not been performed. The team found the internal inspection of the CST, performed in 2013, only performed volumetric examination on the bottom of the tank. For the firewater storage tanks the internal inspection credited for license renewal, last performed in 2018, was limited to a visual inspection. Dominion staff also informed the team that the next scheduled internal inspections did not include the required volumetric examination of the bottom of the firewater storage tanks.

As a result, the team determined that UFSAR Chapter 15 - Commitment 22 and 23 had not been completed prior to the period of extended operation for the CST and the two firewater storage tanks because required internal and external inspections were not performed.

Corrective Actions: Dominion staff entered the issue into their corrective action program and performed an operability assessment. The team reviewed the operability assessment for the CST and found it showed that tank level was being maintained and not changing indicating there was not leakage.

Corrective Action References: CR1188165, CR1188033, and CR1188021

Performance Assessment:

Performance Deficiency: The performance deficiency associated with this finding was the failure to perform required internal and external inspections described in the Tank Inspection Program which was credited as an Age Management Program for license renewal.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Protection Against External Hazards attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent

undesirable consequences and if left uncorrected, would have the potential to lead to a more significant safety concern. The missed examinations for caulk involved sealants that were not fully intact to keep moisture from inaccessible external tank surfaces susceptible to corrosion and the tank inaccessible surfaces were not being examined volumetrically to verify degradation was not occurring due to the presence of moisture.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." Because there is no indication of an actual through wall tank leak the issue was determined to be Green because the performance deficiency is associated with a qualification deficiency that did not result in an inoperable tank.

Cross-Cutting Aspect: Not Present Performance. No cross-cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance. The required internal and external inspection credited to meet the license renewal commitments were scoped, planned and performed prior to the period of extended operation (July 2015).

Enforcement:

Violation: License Condition 2.C.(11) states the FSAR supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. DENC shall complete these activities no later than July 31, 2015. UFSAR Chapter 15 Section 2.1.24 - Commitments states, in part:

The following program enhancements will be implemented prior to the period of extended operation:

- Inspection of sealants and caulking - Appropriate inspections of sealants and caulking used for moisture intrusion prevention in and around aboveground tanks have been performed. These inspections complete the actions required for Commitment Item 22 in Table 15.6-1.
- Non-destructive Volumetric Examination of Inaccessible Tank Bottoms - Non-destructive volumetric examination of the in-scope inaccessible locations, such as the external surfaces of tank bottoms, have been performed prior to the period of extended operation. Subsequent inspections will be performed on a frequency consistent with scheduled tank internals inspection activities. These examinations and scheduled subsequent inspections complete the actions required for Commitment Item 23 in Table 15.6-1.

Contrary to the above, on December 17, 2021, the NRC identified that these activities have not been completed. Specifically, Dominion has not performed external inspections on sealants and caulk used for moisture intrusion prevention for the 'A' and 'B' firewater storage tanks and the CST. Additionally, required internal volumetric examinations on sections of the firewater storage tank bottoms and the CST sides (inaccessible for external inspection) have not been performed.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

- On December 17, 2021, the inspectors presented the Post-Approval Site Inspection for License Renewal - Phase 4 inspection results to Mr. Michael O'Connor, Plant Manager and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71003	Corrective Action Documents	0375371 0571333 0571334 1071772 1122142 1127433 1133796 1138187 1138195 1143683 1147226 1149870 1154544 1155426 1161699 1162798 1162845 1162904 1165020 1172793 1181687 1102927 1137547		
	Corrective Action Documents Resulting from Inspection	1187803 1187904 1188033 1188021 1188007 1188019 1188011 1188022 1188165		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Drawings	25203-LR26011 Sht. 1	License Renewal Drawing Fire Protection	Rev. 20
	Engineering Evaluations	ETE-CEP-2012-1002	Identification and Evaluation of RCS Alloy 600 Locations - Pressure Boundary Locations & Reactor Internals	Rev. 0
		ETE-CEP-2012-1003	Identification and Evaluation of RCS Alloy 600 Locations - Steam Generator Locations	Rev. 0
		ETE-MP-2013-1040	Inservice Inspection Program: Systems, Components & Supports; License Renewal Aging Management Program	Rev. 0
		ETE-MP-2013-1045	Flow-Accelerated Corrosion, License Renewal Aging Management Program	Rev. 0
		ETE-MP-2013-1053	Tank Inspection Program, License Renewal Aging Management Program	Rev. 0
		ETE-MP-2013-1057	Structures Monitoring Program, License Renewal Aging Management Program (MP-LR-3728/MP-LR-4728)	Rev. 1
		ETE-MP-2014-1141	Medium Voltage Cable Tan-Delta Commitments	Rev. 0
		ETE-MP-2021-1005	MP2 Condition Monitoring of Structures	Rev. 0
		ETE-MP-2021-1118	MP2 Periodic License Renewal Visual Inspections of Accessible Non-EQ Cables for Aging Management Program	Rev. 0
	Miscellaneous		Millstone Power Station Unit 2, Application for Renewed Operating License -Technical and Administrative Information	01/20/2004
		EN31154	Attachment 3 Internal Tank Data Sheet Firewater Storage Tank A	8/7/18
		ER-AA-FAC-102	Flow-Accelerated Corrosion (FAC) Inspection and Evaluation Activities	Rev. 1
		ER-AA-MAT-11	Alloy 600 Management Plan	Rev. 17
		NUREG-1838	Safety Evaluation Report Related to the License Renewal of the Millstone Power Station, Units 2 and 3	October 2005
		U2-11-ISI-BAPO1-Interval 5	MPS2 Ten-Year ISI Plan	Rev. 1
	Procedures	C EN 104I	Condition Monitoring of Structures	Rev. 13
		EN 21154A	Tank Inspection Plan	Rev. 5
		EN31154	Attachment 3 Internal Tank Data Sheet Firewater Storage	8/7/18

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		ER-AA-CBL-102	Tank B Evaluation and Testing of Medium Voltage Cables	Rev. 5
	Work Orders	53102841567 53102841573 53102841575 53102841577 53102841635 53102841682 53203233114 53203252179 53203257517 53203267904 53203267905 53203269302 53203269306 53203286835 53203289334 53203292111 53203311583 53203312568 53203320958 53203326268 53203329584 53203255666 53203162730 53103054989 53102606839 53103003512		