



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
475 ALLENDALE RD, STE 102  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

November 1, 2022

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

SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 – BIENNIAL PROBLEM  
IDENTIFICATION AND RESOLUTION INSPECTION REPORT  
05000336/2022010 AND 05000423/2022010

Dear Daniel Stoddard:

On September 29, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed a problem identification and resolution inspection at Millstone Power Station, Units 2 and 3 and discussed the results of this inspection with Michael O'Connor, Site Vice President, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspection team reviewed the station's problem identification and resolution program and the station's implementation of the program to evaluate its effectiveness in identifying, prioritizing, evaluating, and correcting problems, and to confirm that the station was complying with NRC regulations and licensee standards for problem identification and resolution programs. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

The team also evaluated the station's processes for use of industry and NRC operating experience information and the effectiveness of the station's audits and self-assessments. Based on the samples reviewed, the team determined that your staff's performance in each of these areas adequately supported nuclear safety.

Finally the team reviewed the station's programs to establish and maintain a safety-conscious work environment, and interviewed station personnel to evaluate the effectiveness of these programs. Based on the team's observations and the results of these interviews the team found no evidence of challenges to your organization's safety-conscious work environment. Your employees appeared willing to raise nuclear safety concerns through at least one of the several means available.

One finding of very low safety significance (Green) is documented in this report. This finding did not involve a violation of NRC requirements.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; and the NRC Resident Inspector at Millstone Power Station, Units 2 and 3.

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,

Matt R. Young, Chief  
Projects Branch 2  
Division of Operating Reactor Safety

Docket Nos. 05000336 and 05000423  
License Nos. DPR-65 and NPF-49

Enclosure:  
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 – BIENNIAL PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT  
05000336/2022010 AND 05000423/2022010 DATED NOVEMBER 1, 2022

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

Docket Numbers: 05000336 and 05000423

License Numbers: DPR-65 and NPF-49

Report Numbers: 05000336/2022010 and 05000423/2022010

Enterprise Identifier: I-2022-010-0016

Licensee: Dominion Energy Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Units 2 and 3

Location: Waterford, CT 06385

Inspection Dates: September 12, 2022 to September 29, 2022

Inspectors: P. Finney, Senior Project Engineer  
J. Fuller, Senior Resident Inspector  
M. McLaughlin, Senior Enforcement Specialist  
B. Towne, Resident Inspector

Approved By: Matt R. Young, Chief  
Projects Branch 2  
Division of Operating Reactor Safety

Enclosure

## SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a biennial problem identification and resolution inspection at Millstone Power Station, Units 2 and 3, 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

Improper Implementation of Fire Water Storage Tank Internal Inspection Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000336,05000423/2022010-01 Open/Closed	[P.1] - Identification	71152B
Inspectors identified a Green finding when Dominion did not properly implement their procedure EN31154, "Tank Inspection Plan," Revision 7, during internal inspections of the 'A' and 'B' fire water storage tanks (FWSTs) on March 16, 2022. Specifically, Dominion did not properly classify as-found tank degradation and take the directed actions within the procedure.			

### 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) 2515, "Light-Water Reactor Inspection Program - Operations Phase." 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 – BASELINE

### 71152B - Problem Identification and Resolution

#### Biennial Team Inspection (IP Section 03.04) (1 Sample)

- (1) The inspectors performed a biennial assessment of the effectiveness of the licensee's problem identification and resolution program, use of operating experience, self-assessments and audits, and safety conscious work environment.
  - Problem Identification and Resolution Effectiveness: The inspectors assessed the effectiveness of Dominion's problem identification and resolution program in identifying, prioritizing, evaluating, and correcting problems. The inspectors also conducted a five-year review of snubbers, turbine-driven auxiliary feedwater steam supply check valves, the P43A Core Spray pump, the Unit 3 'A' instrument air compressor, and FWSTs.
  - Operating Experience: The inspectors assessed the effectiveness of Dominion's processes for use of operating experience.
  - Self-Assessments and Audits: The inspectors assessed the effectiveness of Dominion's identification and correction of problems identified through audits and self-assessments.
  - Safety Conscious Work Environment: The inspectors assessed the effectiveness of the station's programs to establish and maintain a safety-conscious work environment.

## INSPECTION RESULTS

Assessment	71152B
<u>Corrective Action Program Effectiveness</u> The team determined that Dominion's corrective action program (CAP) complied with regulatory requirements and self-imposed standards. Based on the samples reviewed, Dominion's performance in the areas of Problem Identification, Problem Prioritization and Evaluation, and Corrective Actions adequately supported nuclear safety.	

Problem Identification: The team determined that Dominion completely, accurately, and documented, in a timely manner, identified problems. Based on the samples reviewed, Dominion identified and documented problems at an appropriately low threshold. However, one Green finding with problem identification insights was identified during review in this area and is documented in the Inspection Results section of this report.

Problem Prioritization and Evaluation: The team determined that Dominion appropriately prioritized and evaluated issues with technical adequacy and appropriate depth commensurate with the risk and safety significance of the identified problem. Based on the samples reviewed, Dominion appropriately screened condition reports (CRs) for operability and reportability, categorized CRs by significance, and assigned actions to the appropriate department for evaluation and resolution.

Corrective Actions: The team determined that Dominion appropriately developed and implemented effective corrective actions (CAs). Based on the samples reviewed, Dominion developed effective CAs for the problems evaluated in the CAP and generally implemented these CAs in a timely manner commensurate with their safety significance. However, one minor performance deficiency was noted in this area and is documented in the Inspection Results section of this report.

Assessment	71152B
<u>Use of Operating Experience</u>	
The team determined that Dominion appropriately evaluated industry operating experience for applicability, and applicable lessons learned were communicated to appropriate organizations and implemented. Based on the samples reviewed, Dominion appropriately incorporated both internal and external operating experience into plant procedures and processes, as well as lessons learned for training and pre-job briefs.	

Assessment	71152B
<u>Self-Assessments and Audits</u>	
The team determined that Dominion had an effective self-assessment and audit process. Based on the samples reviewed, Dominion effectively performed self-assessments and audits to identify issues and performance trends at a low level, properly evaluate those issues, and resolve them commensurate with their safety significance.	

Assessment	71152B
<u>Safety Conscious Work Environment</u>	
The team interviewed 32 individuals randomly selected by the team from the Operations, Engineering, Maintenance, Security, Radiation Protection, and Emergency Preparedness work groups. The purpose of these interviews was to evaluate the willingness of Dominion staff to raise nuclear safety issues; to evaluate the perceived effectiveness of the problem identification and resolution program at resolving identified problems; and to evaluate Dominion's safety conscious work environment. The team determined that employees were willing to raise nuclear safety concerns through at least one of the several means available and that site conditions were conducive to a safety conscious working environment.	

Improper Implementation of Fire Water Storage Tank Internal Inspection Program			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000336,05000423/2022010-01 Open/Closed	[P.1] - Identification	71152B
<p>Inspectors identified a Green finding when Dominion did not properly implement their procedure EN31154, "Tank Inspection Plan," Revision 7, during internal inspections of the 'A' and 'B' fire water storage tanks (FWSTs) on March 16, 2022. Specifically, Dominion did not properly classify as-found tank degradation and take the directed actions within the procedure.</p> <p><u>Description:</u> The inspectors reviewed Dominion's response to NCV 05000336/2021011-01 where required internal volumetric examinations of the FWST bottoms to fulfill portions of the Tank Inspection Aging Management program and two associated commitments credited to manage the aging affects had not been completed. In response to the NCV, Dominion initiated CR 1188165, performed a level of effort evaluation (CA9185825), and implemented internal inspection work orders (FWST 'A' (WO 53203225938) and 'B' (WO 53203225937)) on March 16, 2022. The results of these inspections had been captured in CRs 1193211, 1193638, and 1194045.</p> <p>The inspectors reviewed the CRs and noted that Dominion had documented several deficiencies adverse to quality. In CR 1193211, Dominion reported that the 'A' FWST tank had localized areas of coating degradation and corrosion that resulted in a pit on the tier 2 wall having a measurement less than the calculated minimum wall thickness and some floor corrosion that measured up to 5/32 inches in depth. CR1193638 reported that the 'B' FWST coating was degraded in localized spots as indicated by corrosion nodules and pits and the floor had three pits slightly more than 1/4-inch deep. CR 1194045 documented a 3/8-inch by 1/4-inch through-wall hole in the same tank. Dominion performed a weld repair of the 'B' FWST through-wall hole and closed the other two CRs to WOs 53102851316 and 53102850085, which were scheduled to be worked in July and August of 2023. The CRs annotated that both FWSTs had been classified as EN 31154 Category B, moderate wear but no damage or operability concerns.</p> <p>Inspectors reviewed the internal inspection work orders and identified that there were multiple locations of corrosion pitting and wall thinning that exceeded the EN 31154 acceptance criteria but had not been documented in CRs. For example, both FWST floors contained pitting that exceeded the corrosion allowance of 0.0625 inches; and the 'B' FWST walls contained six locations where the wall thickness was less than the design minimum wall thickness. Additionally, during the volumetric examination of the 'B' FWST bottom, two of the five 12-inch grids selected as a representative sample had measured wall thickness loss that exceeded the corrosion allowance.</p> <p>In EN 31154, section 4.2, "Internal Tank Inspections," step 4.2.10.d directs that for any volumetric examinations where wall thinning exceeds ten percent to evaluate for continued operation and examine an additional grid. Section 4.3, "Evaluation of Inspection Results," directs tanks be classified. The following deficiencies are examples of Category C classification: "...wall loss greater than or equal to the corrosion allowance (if known) or greater than or equal to 10% of tank nominal wall thickness (if no corrosion allowance is known)." For Category C classifications, the tank is considered inoperable. The inspectors noted that the above locations of corrosion pitting and wall thinning on the tank walls and</p>			



floors exceeded the acceptance criteria established. However, Dominion had not followed procedure guidance to expand the volumetric examination sample as required and did not classify the tanks as Category C. Finally, EN 31154 procedure step 4.3.6 directs use of PI-AA-200, "Corrective Action," to initiate a CR as required by PI-AA-200 steps 3.1.4 and 3.1.7, to provide a level of detail and sufficient information in the CR to ensure that the deviating condition can be understood by subsequent reviewers. Contrary to this, the CRs that were written did not provide sufficient information to allow a proper functionality determination when it did not include all as-found deficiencies and that multiple locations were below the acceptance criteria.

Corrective Actions: Following NRC questions, Dominion recategorized the FWSTs as Category C and declared them non-functional in accordance with EN 31154. Dominion entered Fire Suppression Water System Technical Requirement Manual (TRM) conditions Unit 1 DTRM 6.1.1, Unit 2 TRM 3.7.9.1, and Unit 3 TRM 3.7.12, which direct establishment of an alternate backup pump or water supply within 24 hours and development of a plan and schedule within 14 days to restore the system to functional status. Dominion also entered the issues in its CAP and performed a Human Performance Review Board. Finally, Dominion completed engineering technical evaluations of the as-found FWST conditions as permitted by ETE-MP-2013-1053, "Tank Inspection Program License Renewal Aging Management Program," section 3.7 and determined there was reasonable assurance the tanks could perform their intended functions until repairs are completed as scheduled in the summer of 2023.

Corrective Action References: CRs 1208685, 1208687, 1208954, 1209333, and 1209349. Engineering technical evaluations ETE-MP-2022-1087 and ETE-MP-2022-ETE-108.

Performance Assessment:

Performance Deficiency: The inspectors determined that the Dominion's improper implementation of EN 31154 for the as-found FWST conditions was within their ability to foresee and correct, should have been prevented, and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance 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. Specifically, the improperly followed procedure reduced assurance in the tank's availability and reliability and required Dominion to revise test results and declare the tanks non-functional. The issue was also similar to IMC 0612, Appendix E, example 3.e; where an issue is more than minor when a licensee does not follow a procedure, it adversely affects the Mitigating Systems cornerstone and, regardless of final functionality, the as-found conditions result in reasonable doubt about the component's qualifications.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." While Dominion declared the tanks non-functional following NRC inspection, they subsequently determined via engineering technical evaluations there was reasonable assurance that both FWSTs could perform their intended functions until repairs are completed as scheduled. Using Exhibit 2 - Mitigating Systems Screening Questions, inspectors screened the finding to Green since the deficiency affected the FWSTs design or qualification as a mitigating

structure, system, or component, but the tanks maintained their probabilistic risk assessment functionality.

Cross-Cutting Aspect: P.1 - Identification: The organization implements a corrective action program with a low threshold for identifying issues. Individuals identify issues completely, accurately, and in a timely manner in accordance with the program. Specifically, Dominion staff had not completely and accurately identified, within CRs, the level of degradation identified during tank inspections.

Enforcement: Inspectors did not identify a violation of regulatory requirements associated with this finding.

Minor Performance Deficiency

71152B

Minor Performance Deficiency: Inspectors identified a minor performance deficiency under the Corrective Action attribute of the problem identification and resolution inspection. Dominion procedure PI-AA-200, "Corrective Action," Revision 39, step 3.5.3.a directs staff to complete CA plan assignments and step 3.5.4.a directs staff to ensure certain attributes are implemented to include: ensuring CA responses clearly identify specific action completed and ensuring CA response addresses all of the assigned action(s) specified in the original assignment. Contrary to this, the inspectors identified several instances where the CAs taken were different than what was initially identified. Specifically:

- 1) The CA for containment hatch closure times exceeding requirements was to revise a procedure but staff revised a pre-job briefing form instead. (CA8694244, CR 1208112)
- 2) The CA for a licensee-identified NCV was to revise a procedure but was not adequate based on the section in which it was entered. (LEE CA8322361, CR 1207674)
- 3) The CA for a battery electrolyte level surveillance discrepancy was to correct the entry but determined it could not be performed. (CA8415855, CR 1209453)
- 4) The CA for a Unit 2 'E' instrument air compressor trip was to conduct troubleshooting but was not performed when the compressor reset and was placed in standby. (CA8551351).
- 5) The CA for a subsequent Unit 2 'E' instrument air compressor trip was to replace an air end assembly but the work order's acceptance criteria section was not completed. (CA8592664, CR 1208882)
- 6) The CA for an audit issue was to revise a procedure but was not completed. (CA8568210, CR 1208695)
- 7) The CA for a circuit card found improperly stored was to evaluate process issues but the action taken was to store the card. (CA8454355, CR 1209447)
- 8) CAs for an inadequate radiation monitor detection range for an Alert emergency action level were closed but required additional follow-on and evaluation information. (CA8452807 / CA8452804, CR 1209061)

Screening: The inspectors determined the performance deficiency was minor. Each case was of minor significance based on review of IMC 0612 considering such factors as consequence and association or lack thereof with the station's Quality Assurance program. Further, the team did not identify a programmatic impact.

## **EXIT MEETINGS AND DEBRIEFS**

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

- On September 29, 2022, the inspectors presented the biennial problem identification and resolution inspection results to Michael O'Connor, Site Vice President, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152B	Corrective Action Documents Resulting from Inspection	CR 1207674 CR 1207803 CR 1208112 CR 1208175 CR 1208685 CR 1208687 CR 1208695 CR 1208764 CR 1208770 CR 1208805 CR 1208882 CR 1208902 CR 1208911 CR 1208941 CR 1208954 CR 1209061 CR 1209447 CR 1209453 CR 1209333 CR 1209349		
	Procedures	DOM-QA-1	Nuclear Facility Quality Assurance Program Description Topical Report	Rev. 33
		PI-AA-10	Performance Improvement Process	Rev. 0
		PI-AA-200	Corrective Action	Rev. 39
		PI-AA-300	Cause Evaluation	Rev. 17
		PI-AA-300-3007	Level of Effort Evaluation	Rev. 7