

NUCLEAR ENERGY ADVISORY COUNCIL
September 20, 2024 at 7:00 PM
Waterford Town Hall

MINUTES

Members Present

Rep Kevin Ryan, Chair

Alternate Chair Mr. Jeffrey Semancik representing DEEP Commissioner Dykes

Mr. Craig Salonia

Mr. R. Woolrich

Mr. J. McGunnigle

Dr. James Sherrard

Sen Cathy Osten

Members not present:

Mr. A. Jordan

Mr. Bill Sheehan

1. Call to Order of Meeting

Council Chair Rep. Ryan called the meeting to order at 7:00 PM.

2. Approval of Minutes of previous Council meetings.

- a. A motion was made to approve the minutes of the May 16, 2024 Council meeting by Mr. Salonia and seconded by Mr. Woolrich. The minutes were approved without objection.

3. Council Business

Next Council meeting will be at 7 PM Tuesday, December 10, 2024 at Waterford Town Hall for discussion and drafting of the annual report.

4. NRC Correspondence Reviewed since past meeting.

The following list of NRC Correspondence was reviewed.

- a. Millstone Power Station, Units 2 and 3 – Final Significance Determination for Security-Related Greater than Green Finding(s) with Assessment Follow-Up; NRC Inspection Report 05000336/2024442 and 05000423/2024442 and Notice of Violation(S) – NRC Investigation Report 1-2024-001 dated June 24, 2024 (Public version).
 - i. DEEP Radiation Division staff reviewed the security related version of this document. DEEP staff met with the NRC security inspectors to discuss the finding(s) and significance determination. Based upon this review, DEEP concluded that the NRC has done a thorough job in their inspection, and Dominion has responded appropriately. There is no existing threat to station security or the health and safety of the public.
- b. Millstone Power Station, Units 2 and 3 – Biennial Problem Identification and Resolution Inspection Report 05000336/2024010 and 05000423/2024010 dated June 26, 2024.
- c. Millstone Power Station, Units 2 and 3 – Emergency Preparedness Biennial Exercise Inspection Report 05000336/2024501 and 05000423/2024501 dated July 1, 2024.

- d. Millstone Power Station, Units 2 and 3 – Information Request for the Cybersecurity Baseline Inspection, Notification to Perform Inspection 05000336/2024403 and 05000423/2024403 dated July 22, 2024.
- e. Millstone Power Station, Units 2 and 3 – Supplemental Inspection Report 05000336/2024441 and 05000423/2024441 and Follow-Up Assessment Letter (EPID L-2022-LRO-0142) dated August 6, 2024 (Public version).
 - i. DEEP Radiation Division staff reviewed the security related version of this document. DEEP staff met with the NRC security inspectors to discuss the finding(s) and significance determination. Based upon this review, DEEP concluded that the NRC has done a thorough job in their inspection, and Dominion has responded appropriately. There is no existing threat to station security or the health and safety of the public.
- f. Millstone Power Station, Units 2 and 3 – Integrated Inspection Report 05000336/2024002 and 05000423/2024002 dated August 13, 2024.

5. Other material reviewed

NEAC reviewed the following information:

- a. Revision 2 to Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2023-006-01, “Pressurizer Power Operated Relief Valve Failed to Open During Surveillance Testing Resulting in a Condition Prohibited by Technical Specifications,” dated May 20, 2024.
- b. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 2 Licensee Event Report 2024-001-00, “Control Room Air Conditioning Unit Inoperable Due to Refrigerant Overcharge Resulting in a Condition Prohibited by Technical Specifications,” dated June 10, 2024.

6. Program - Presentation by Dominion Nuclear Energy Inc. Mr. Mark Goolsbey, Director of Nuclear Safety and Licensing (DNSL), Mr. Alex Trespalacios, Assistant Plant Manager, Ms. Susan Adams, State Policy Director for New England, and Mr. Michael O’Connor, Station Vice President (presentation attached).

- a. Safety - Mr. Goolsbey highlighted industrial safety performance at Millstone. He noted Dominion follows a “safety always” approach that focuses on compliance with standards to ensure safety. He also noted the commitment of Dominion to safety including Millstone’s certification as a Voluntary Protection Program (VPP) Star site by OSHA. He also noted two members of the Millstone staff are regional board members for OSHA. Mr. Goolsbey described VPP as a voluntary non-nuclear safety program based on employee participation and leadership in industrial safety.
- b. Millstone Unit status - Mr. Goolsbey discussed the two-year power history curves for both Millstone Units 2 and 3.:
 - i. Currently both Units 2 and 3 are at 100% power.
 - ii. Millstone Unit 3 has been online for 3 days following completion of a 15 day maintenance outage conducted to replace a pressurizer safety relief valves that

- was exhibiting seat leakage. The outage was extended by a failure of the B reactor coolant pump (RCP) seal that required replacement.
- iii. Millstone Unit 2 power history included a refueling outage that was extended by discovery and repair of long term degradation of some service water supports in areas not frequently accessed. Unit 2 also required several power reductions to repair components on the non-safety related secondary steam plant.
 - iv. Millstone Unit 3 had a forced maintenance outage following their fall refueling outage due to a sea water leak into their main condenser. They repaired the leak and conducted operations to restore proper plant chemistry. In the first quarter of 2024, Unit 3 was shutdown to repair a leaking secondary steam valve. This maintenance outage was also extended to replace the A RCP seal which failed.
- c. Mr. Goolsbey noted that there were several leadership changes since the last presentation to the Council including his replacement of Ms. Lori Armstrong who has retired. Dominion also brought in a new Plant Manager, Mr. James Petty and Assistant Plant Manager, Mr. Trespalacios from an external high performing utility. Dominion believes that bringing in fresh outside perspectives helps maintain and improve high standards of performance. Mr. Goolsbey also discussed other management changes. Of importance for the Council were appointments of Mr. Eric Bergstrom to Manager, Radiation Protection and Chemistry and Ms. Lori Kelly to Manager Emergency Preparedness and Licensing.
- d. Nuclear Regulatory Commission (NRC) Findings – Mr. Goolsbey briefed the Council that Millstone remains in the licensee response column of the NRC oversight matrix (best performance column). In 2024 YTD, the NRC has identified nineteen Green (very low safety significance) Non-cited Violations (NCVs). All findings are in the Dominion corrective action system.
- i. Mr. Goolsbey noted one violation involved a greater than green security finding. Dominion has taken robust measures to prevent recurrence. The NRC conducted a follow-up inspection, determined Dominion corrective actions were adequate and complete. The NRC has closed the finding. DEEP Radiation Division has reviewed the security aspects and concurs with the NRC assessment.
 - ii. Mr. Goolsbey noted that several violations were related to equipment failures that have been corrected.
- e. Mr. Goolsbey reviewed recent license amendments request submitted by Dominion. All NRC correspondence related to license amendments is reviewed by the Council as noted in section 4 of the minutes.
- i. Dominion is requesting several license amendments related to the use of a new design of nuclear fuel that will allow them to transition from their current 18-month fuel cycles to 24-month fuel cycles.
 - ii. Other license changes were based on industry initiatives to improve efficiency through the Technical Specification Task Force.
 - iii. One change modified the heatup and cooldown temperature-pressure limits to account for extended operations from 32 Effective Full Power Years (EFPY) to 50 EFPY.

- f. Mr. Goolsbey noted the Dominion continues to perform required internal oversight audits and has not identified any significant issues. In addition, Dominion is expanding its corporate oversight role for performance improvement beyond that required. The goal is to find and fix their own problems at very low levels. They have added a corporate performance improvement director and added additional staff.
- g. All NRC performance indicators (PIs) for Millstone are Green.
- h. Mr. Goolsbey stated there were no Environmental Impact events. Mr. Goolsbey presented the status of airborne radioactive releases from the station. All releases were below planned quantities and orders of magnitude below any federal release limits.
- i. Emergency Preparedness and Response update was provided by Mr. Goolsbey. Millstone made no emergency declarations since presentation to the Council in 2023. Mr. Goolsbey discussed two planned changes to the offsite emergency plan:
 - i. Transition away for warning sirens to the Integrated Public Alert & Warning System (IPAWS), FEMA's national system for local alerting that provides authenticated emergency and life-saving information to the public through mobile phones using Wireless Emergency Alerts, to radio and television via the Emergency Alert System, and on the National Oceanic and Atmospheric Administration's Weather Radio. The State Division of Emergency Management and Homeland Security (DEMHS) has approved this change.
 - ii. A change to the Emergency Action Level tables used to classify events. The change reflects the use of new dry cask storage canisters for spent nuclear fuel. Millstone has started to use new canisters that hold more fuel.
- j. Mr. Goolsbey discussed major equipment improvements planned for both Units 2 and 3 over the next year. These design changes are intended to maintain safety and provide reliability for future operations.
 - i. Mr. Semancik noted that one change involved a steam supply check valve for the Unit 2 turbine drive auxiliary feedwater (TDAFW) pump. He noted the Council had reviewed at least two Licensee Event Reports and several NRC findings related to failures of this valve. He asked if they have enough run time to ensure the fix will last and if they are planning any inspections of the valve internals to assure it is operating as intended. Mr. Goolsbey said they had sufficient run time since the replacement. He noted the old valve was a normally closed swing check that operated under flow conditions. The new valves is a normally open inline style that closes only under reverse flow. Mr. O'Connor added that they have a planned replacement activity including inspection of the valve removed. He also noted that they have monitored for indications of increased flow accelerated corrosion and not seen any.
 - ii. Mr. Goolsbey noted that Dominion will be conducting an integrated leak rate test of the main containment at Unit 2. This test uses air to increase internal pressure in the containment building to simulate accident pressures to verify it can perform its design function.
- k. Ms. Adams provided an update on nuclear policy issues.

- i. Ms. Adams noted Dominion has focused efforts expanding the state's authority to purchase power from Millstone. Currently, the state has a 10 year power purchase agreement (PPA) with Millstone with 5 years remaining. Dominion helped support passage of Senate Bill 385 that authorizes the Commissioner of DEEP to enter into a PPA with Millstone provided two other states also participate. Dominion has focused on getting support from two other New England states.
 1. In last session in Massachusetts, two different bills (one in House and one in Senate) support entering into a PPA. This was incorporated into a clean energy bill. However, the bill was not voted on.
 2. Since that time MA Governor Healy has backed a PPA for offshore wind (CT has not decided whether to participate in the wind PPA). She has also added a provision for Millstone PPA into her budget submittal for next session.
 3. Sen Osten what the third state would be. Ms. Adams noted Dominion is working with both Maine and Rhode Island for this. However, she also noted CT and MA account for 75% of ISO NE demand.
 4. Sen Osten also noted that a potential 400 MWe solar proposal may also impact the decision on whether CT should participate in the offshore wind PPA.

I. Topics requested by the Council

- i. Unit 3 Power Operated Relief Valve (PORV) failure.

Mr. Goolsbey explained that Dominion replaced a PORV due to excessive seat leakage and determined the reason for the failure was the wrong material in the valve internals. They also determined these materials would have prevented the valve from working. Dominion conducted a Root Cause Evaluation which identified that valves with different internal materials had the same stock code. This was a legacy problem that has been corrected both for these valves as well as for any future material changes to components in stock.

 1. Mr. Woolrich asked if other valves with the stock code have been verified to have the right material. He also asked if they were confident the issue was resolved. Mr. Goolsbey said Dominion inspected 100% of the valves to verify proper parts in stock. He stated he is confident the issue is resolved.
- ii. Performance of reactor Coolant Pump (RCP) seals at Millstone Unit 3

Mr. Goolsbey acknowledged that Dominion has experienced issues with RCP seal performance at Unit 3. The seal packages are a newer design from FlowServe and were supposed to last for 14 to 15 years. Millstone 3 seals have only been lasting 18 to 34 months. However, he noted that the reason for the replacement was to enhance safety of the plants because the new seals have low leakage under loss of offsite power scenarios. The old seals, by comparison, could result in 50 gpm of reactor coolant leakage for each of the four RCPs under loss of offsite power conditions. Working with the vendor, Dominion has increased leakoff flow through the D RCP seal which seems to be helping. They will replace all four RCP seals with the increased leakoff modifications during the spring 2025 refueling outage at Millstone Unit 3.

- iii. Unit 1 usage and the potential for Small Modular Reactors (SMRs) at Millstone
Mr. Goolsbey stated there has been no change to the decommissioned status of Unit 1. Dominion is having internal discussions and the future state of Unit 1 including the potential to deploy SMRs. However, SMRs remain conceptual with no specific design study. He stated that Dominion's North Anna Power Station (NAPS) in VA will be the lead site for deployment of SMRs. NAPS already has an Early Site Permit for construction from the NRC from a previous project that was planning to build a third large reactor there. In addition, Dominion has conducted site preparation work there. Dominion also believes that the regulated electric market in VA offers lower financial risk. Ms. Adams added that Dominion recently went out with a request for proposals (RFP) for SMRs in VA. This was also based on the regulated market that allows Dominion to charge ratepayers for early design work. She stated that Dominion sees SMR deployment as 10 to 15 years away with lead units in regulated markets. They hope that this will help de-risk the cost uncertainty for future deployment in deregulated markets.
 - 1. Mr. Woolrich asked if there are any SMRs being built currently. Mr. Goolsbey said he did not think so. Mr. Semancik added that the SMR project proposed at Idaho National Labs was cancelled due to cost overruns. He noted there were two advanced reactor demonstration projects – Sodium reactor in WY and Xe-100 High Temperature Gas reactor in TX – currently being pursued.
 - 2. Mr. Woolrich asked what the Dominion corporate approach to SMRs was. Mr. O'Connor responded that Dominion is actively pursuing SMRs in VA. They have a Director of SMRs and future deployments are still being evaluated. He noted that while SMRs have the potential to add more power to Millstone, deployment will also require upgrades to the switchyard, transmission system and cooling capacity currently available to the site.
 - 3. Sen Osten asked where Dominion felt CT was with respect to other states. Mr. O'Connor stated he felt CT was no further ahead or behind most states.
- iv. Mr. Salonia asked if Dominion was studying storing power at site such as with advanced batteries. Mr. O'Connor said Dominion views Millstone as a clean energy hub and is interested in discussion options with any clean energy companies be they wind, solar, hydrogen, or grid scale storage. He also noted that the combined output of Millstone and Seabrook is 3400 MW. Current daytime peak is 7000 MW. If much more intermittent solar/wind is added, he is concerned that it could create a condition where ISO NE could ask nuclear units to reduce power during max renewables. He stated nuclear units should continue to be dispatched as baseload units where they operate best.
- v. Mr. McGunnigle asked about the fuel for a 24-month cycle. Specifically, does it affect waste and how does going to 24 month cycle affect other maintenance activities. Mr. Goolsbey stated that the new fuel is same size with higher enrichment. So it reduces volume of spent nuclear fuel. With respect to other maintenance, Dominion is evaluating the overall maintenance strategy for 24 month fuel cycles. Mr. Salonia asked about RCP seals for extended cycles. Mr. Trespalacios responded that all the investigations into the seal performance ahs taught them a lot about how the seals work. They are using this knowledge to improve performance to support the 24-month cycles.

vi. Life Extension


Mr. Goolsbey noted that Dominion has filed its intent to seek a license amendment to authorize operation of Millstone Units 2 and 3 for 80 years. They currently both have 60 year operating licenses. Mr. O'Connor added they expect to file the formal license request in 2027.

7. Public Comment

- a. No members of the public were in attendance.

8. Adjournment

Motion was made by Mr. Sherard and seconded by Sen. Osten to adjourn; no objections; unanimous vote in favor; meeting adjourned at 8:24 PM.



Nuclear Energy Advisory Council Meeting
September 17, 2024

Millstone Power Station
Waterford, Connecticut

Safety

- Standards first, safety always
- Commitment to protect the health and safety of the public
- MPS recertified as OSHA VPP Star site

Millstone Current Status

Millstone Unit 2

- 446 days online
- 99.5% capacity factor YTD

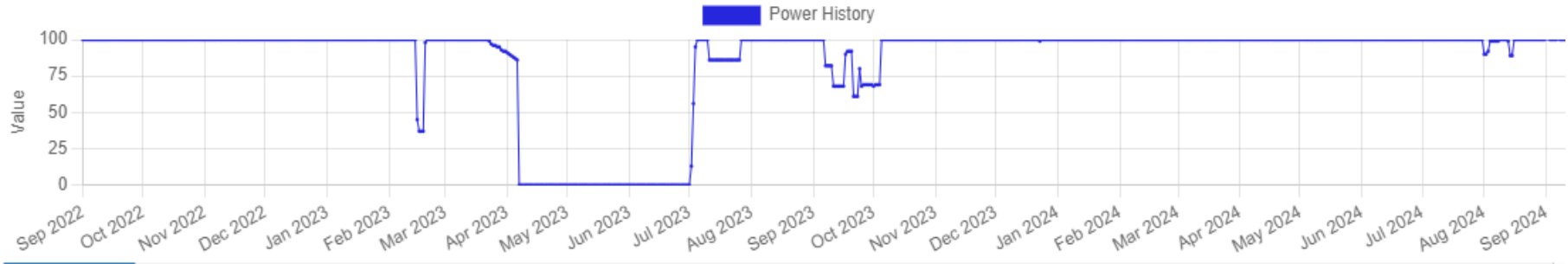
Millstone Unit 3

- 3 days online
- 87.3% capacity factor YTD

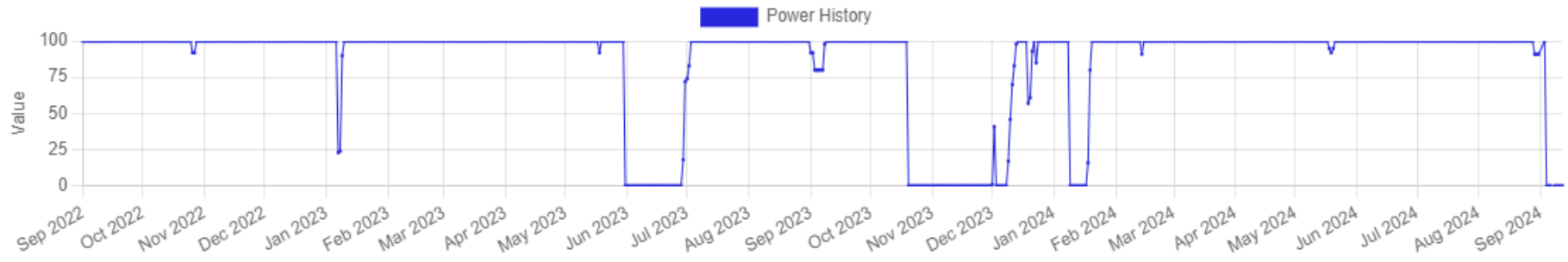


Operations Power History

Millstone Unit 2

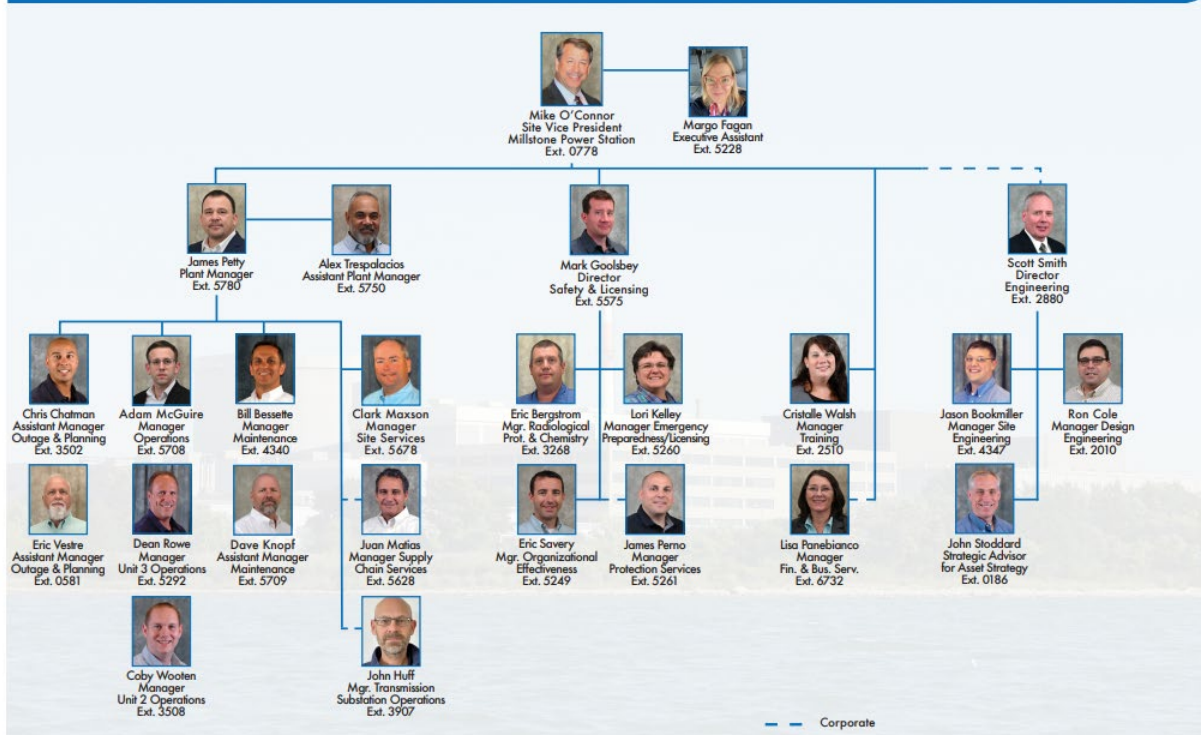


Millstone Unit 3



MPS Leadership Team

Millstone Management Team



- Staffing levels
- Operations pipeline



NRC Findings

Station is in the licensee response column

Security Finding related to Contraband entering protected area - Closed

19 GREEN non-cited violations/findings identified since September 2023

- All are very low risk significance
- All are in our corrective action system



License Amendment Requests

- **License Amendment Requests Approved by the NRC**
 - Millstone Unit 2, 3 – Adopt TSTF-359-A, Increase Flexibility in Mode Restraints (March 2023)
 - Millstone Unit 2, 3 – Adopt TSTF-554, Rev. 1 Revise Reactor Coolant Leakage Requirements (May 2023)
 - Millstone Unit 3 – GAIA Supplement to Spent Fuel Critical Safety Analysis (September 2023)



License Amendment Requests

- **License Amendment Requests Approved by the NRC**
 - Millstone Unit 3 – Revision to Applicability Term for Reactor Coolant System Heatup and Cooldown Pressure-Temperature Limitation Figures (January 2024)
 - Millstone Unit 3 – GAIA Small Break and Realistic Break Loss of Coolant Accident (May 2024)
 - Millstone Units 3 – GAIA Thermal Mechanical Design(June 2024)

Millstone NRC Performance Indicators

Performance Indicators



Unit 2 Second Quarter 2024 NRC Performance Indicators

Performance Indicators



Unit 3 Second Quarter 2024 NRC Performance Indicators

Millstone Nuclear Oversight Summary

- Performance
- Revised corporate approach (PI group)

Environmental Impacts

Date of Notification	Correspondence Number	Reason for Notification
Mar-24	D19311 - Written 5-day	DSN 001-B - Loss of pH Monitoring due to crack in probe
Apr-24	D19315 - Written 5-day	DSN 006-1 Loss of pH Monitoring, Removed from service due to failed calibration
In April 2024, we transitioned to the CT DEEP Electronic Reporting System		
May-24	D19317 - Electronic 5 day	DSN 001-1 - Loss of temp and pH due to Lightning strike
May-24	D19322 - Reported in DMR	Ammonia Sample not preserved to correct pH
Jun-24	C11894 - Electronic 5-day	DSN 001-B - Loss of pH and Temperature due to loss of off-site power
		DSN 001-1 Loss of pH and Temperature due to loss of off-site power
Jul-24	D19329 - 30 Day Letter	Omitted Boron Results

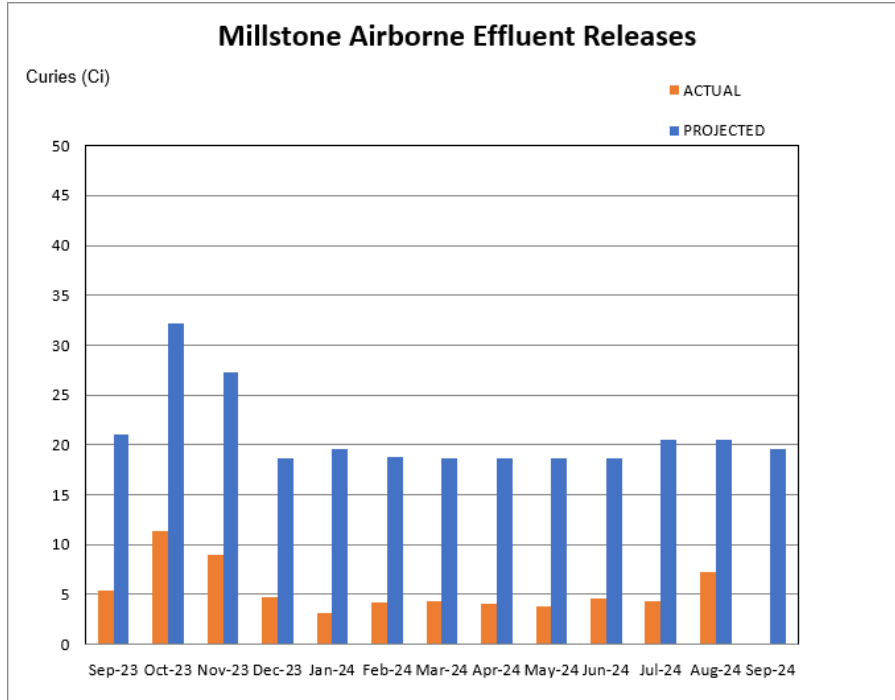
Emergency Plan Event Declarations

- No Emergency Plan Event Declarations in 2024

Offsite Emergency Plan Changes

- Pending IPAWS implementation
- Minor Emergency Action Level change due to ISFSI design change

Airborne Effluent Releases



- Releases continue to be below projections
- Data publicly available on our website

Dose category	Unit	Limit	Actual	% of limit
Noble gas gamma	mrad	0.833	0.0000653	less than 0.0078
Noble gas beta	mrad	1.67	0.0000535	less than 0.0032
Iodine, particulates, tritium	mrem	1.25	0.0102	less than 0.818
Total, whole body	mrem	2.08	0.0088	less than 0.423

Improvements & Increased Safety and Reliability

Station Improvements since July 2023

- Unit 3 Reactor Coolant Pump Vibration Monitor replacement
- Replaced Unit 3 Feedwater Heater 4C
- Unit 3 Service Water Blowdown piping - A Train
- Unit 3 Fire Detection upgrades
- Unit 2 Main Steam check valve for steam supply to Turbine Driven Auxiliary Feedwater Pump

Improvements & Increased Safety and Reliability

Upcoming Unit 2 Improvements

- Net Metering – Convex Upgrade
- Reserve Station Service Transformer monitoring equipment
- Unit 1 345KV Tie Line Removal (Final Line)
- Containment Integrated Leak Rate Test

Impact of Recent Legislation

CT Public Act 24-38 (Senate Bill 385) - AN ACT CONCERNING ENERGY PROCUREMENTS, CERTAIN ENERGY SOURCES AND PROGRAMS OF THE PUBLIC UTILITIES REGULATORY AUTHORITY

- This bill permits the Commissioner of the Department of Energy and Environmental Protection to coordinate with other New England states to procure generation resources from a nuclear power generating facility for ten years following the end of existing agreements with a nuclear power generating facility.

Impact of Recent Legislation, continued

MA Clean Energy Bill (H4856 and S2823)

- Includes language that adds nuclear to the definition of clean energy
- Includes language that authorizes regional (multi-state) procurements for clean energy
- This bill was not called for a vote – did not pass
- Recent development:
 - Governor Maura Healey included these provisions in her supplemental budget bill.

Other Topics

- Unit 3 Reactor Coolant Pump seals
- Unit 1 Decommissioning / SMRs
- Life Extension

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