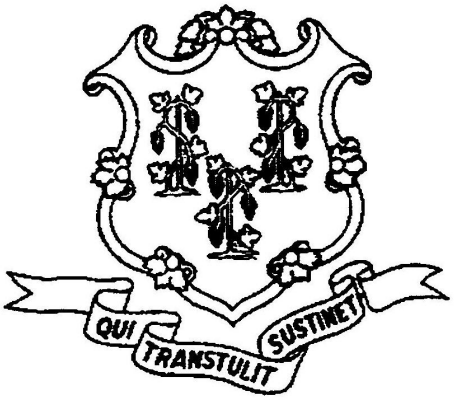
STATE OF CONNECTICUT



THE
NUCLEAR ENERGY ADVISORY COUNCIL
REPORT

2024

Established Pursuant to Public Act 96-245

Rep. Kevin Ryan, Chairperson

Nuclear Energy Advisory Council
2024 Report

Contents

Charge to the Council

While recognizing the regulatory authority of the U. S. Nuclear Regulatory Commission (NRC) over commercial nuclear power facilities, the State of Connecticut maintains a very serious interest in matters that could affect the health and safety of the public and the natural resources of the state. As such, section 17 of Public Act 96-245 (now CGS16-11a, as amended) authorizes the creation of a Nuclear Energy Advisory Council (the Council) and requires the Council to:

1. Hold regular public meetings to discuss issues relating to the safety and operations of nuclear power plants and to advise the governor, legislature, and municipalities within a five-mile radius of the plants on these issues;

2. Work with federal, state, and local agencies and the companies operating such plants to ensure public health and safety;

3. Discuss proposed changes in, or problems arising from, the operation of the plants;

4. Communicate, through reports and presentations, with the plants' operators about safety or operational concerns at the plants, and

5. Review the current status of the plants with the Nuclear Regulatory Commission.

Council Members

The Council consists of fourteen (14) members appointed by the Governor, legislative leadership, and the executive bodies in the towns in or near which the state's nuclear power plants are located. One new member, Representative Anthony Nolan was appointed to the Council in 2024. There were ten active members at the end of 2024. Four vacancies remain. The Council urges the appointing authorities to work with the Council Chair to appoint new members. (Appendix 1).

Executive Summary

This is the thirtieth annual report presented by the Nuclear Energy Advisory Council (the Council). During calendar year 2024, the NEAC met three times and received reports from representatives of the U.S. Nuclear Regulatory Commission (NRC) and Dominion Energy Nuclear Connecticut (Dominion) as well as a written status report from Connecticut Yankee Independent Spent Fuel Storage Installation (ISFSI). The Council received and reviewed Routine and supplemental NRC inspection reports on the safety, security, and operation of Millstone Power Station (MPS) as well as other documents related to MPS and NRC activities. These documents are publicly[1] available and listed in the meeting minutes (Appendix 2).

The Council continues to examine issues relating to the safety, security, and operations of nuclear power plants and advise the governor, legislature, municipalities, and residents within a five-mile radius of the plants on these issues.

The Council concurs with the NRC that during 2024, Dominion safely operated the nuclear plants at Millstone Power Station. Spent nuclear fuel continues to be safely stored and monitored in wet and dry storage at Millstone Power Station and at the ISFSI at Connecticut Yankee. NRC and DEEP provide effective oversite of activities. Millstone continues to safely operate providing a source of carbon free energy to the citizens of Connecticut.

[1] https://portal.ct.gov/DEEP/Radiation/Nuclear-Topics

Council Recommended Actions

State:

- Facilitate and encourage the Division of Emergency Management and Homeland Security (DEMHS)/DEEP nuclear emergency preparedness collaboration and continue executing current responsibilities and duties in kind.
- The Governor/General Assembly/DEEP should endorse a nuclear waste strategy that includes consent based consolidated interim storage.
- Elected officials responsible for appointing Council members should work with the Council Chair to identify and appoint new members to fill existing vacancies.
- DEEP should continue its effective environmental monitoring program to ensure that operations of Millstone do not have an adverse impact on the public or the environment.

The Council:

- The Council will continue to discharge its duties as specified by Section 17 of Public Act (PA) 96-245 (now section 16-11a of Connecticut General Statutes as amended).
- The Council monitored station performance and trends identified in previous years. Based upon the presentations and documents reviewed, the Council observed more operational events, forced outages, extended outages and more reportable events. The Council notes that the station has also experienced significant staffing changes and loss of organizational knowledge, a reliance on outside vendors which have the potential to lead to performance issues affecting safe operations of Millstone Power Station.
- The Council noted that the state has implemented policies to encourage development of and reduce barriers to new nuclear development including lifting of the new construction moratorium at Millstone station (PA 22-76, "An Act exempting Existing Nuclear Power Generating Facilities in the State from the Nuclear Power Facility Construction Moratorium"). The Council continues to monitor policies and progress of new nuclear development in the United States. The Council concludes that the existing operational, safety, and security infrastructure developed around Millstone permits safe deployment of additional reactors. The Council recommends that they review safety designs and plans for any advanced reactors proposed for siting in Connecticut.

Highlighted Findings

Millstone Operations

Based upon presentations of Millstone Power Station (Millstone) in Waterford, CT performance made to the Nuclear Energy Advisory Council (the Council) by the U.S. Nuclear Regulatory Commission (NRC) and Dominion Nuclear Energy, Inc. (Dominion) in conjunction with the Council's review of NRC and Dominion correspondence and reports, the Council:

- Concludes the NRC continues to provide effective regulatory oversight.
- Identified the following trends related to Station performance:
    - Increase number of operational events requiring reductions in station power level, forced shutdowns and significant extensions to planned outages.
    - Increased number of Licensee Event Reports issued by the station.
    - Increase number of NRC identified findings.
- While the Council did not identify any significant safety or operational concerns with the plants, the increased number of operational events and issues could present challenges to station operators.

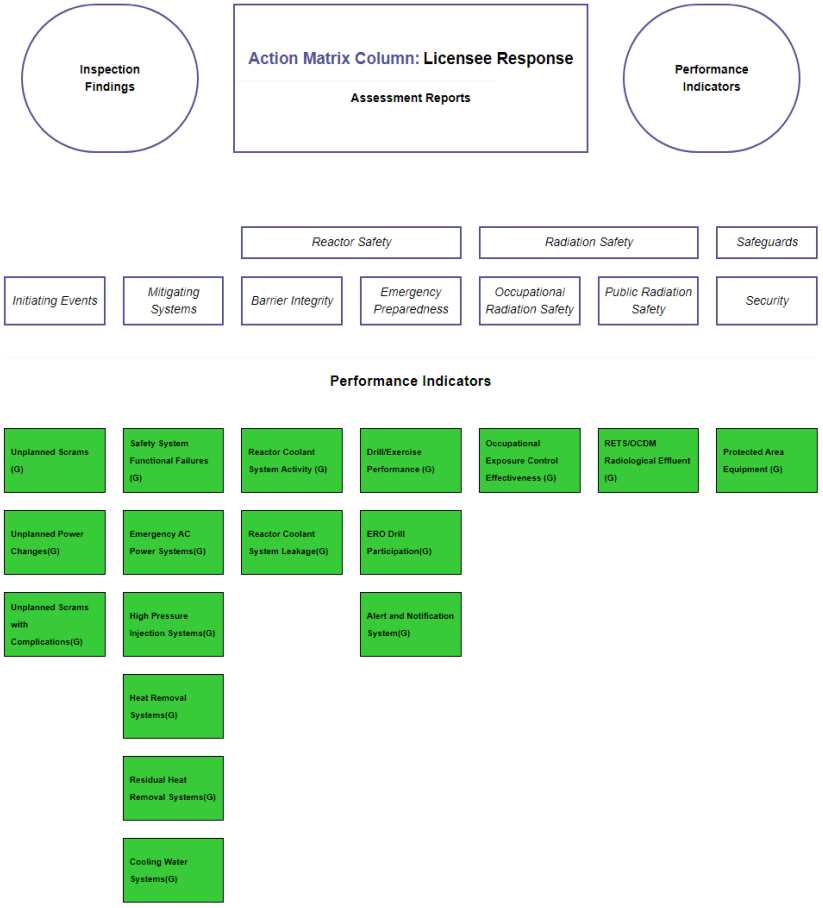
NRC Assessment of Performance

The NRC briefed the Council on its annual assessment of performance at Millstone. This assessment was informed by the observations, reports, and inspections conducted by NRC Resident Inspectors and supplemented with regional and headquarters inspectors in areas such as security, cybersecurity, health physics and engineering design basis. The NRC concluded that Dominion Nuclear Energy continues to operate Millstone Power Station safely, protect public health and safety, and protect the environment. Millstone Units 2 and 3 both remain in the Licensee Response column of the Regulatory Response Matrix (the highest level of performance) and will therefore remain under baseline inspection.

All NRC performance indicators remain Green.

Millstone 2 - Quarterly Performance Summary

Q3/2024 Performance Indicators

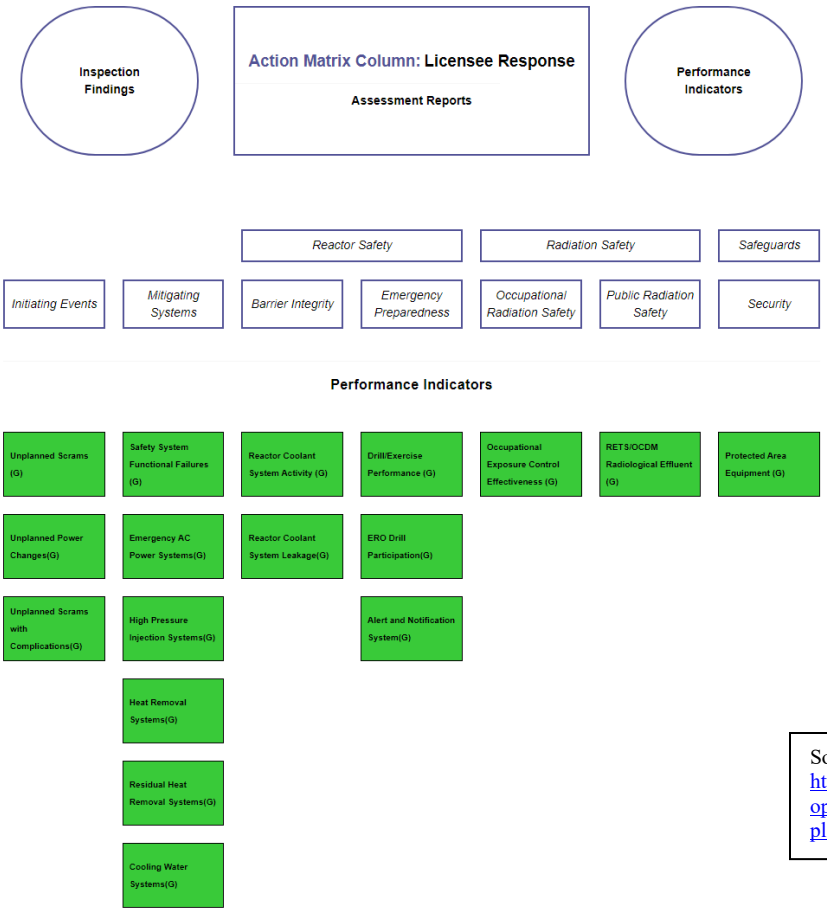


Source: US NRC available at https://www.nrc.gov/reactors/operating/oversight/plant-by-plant-summaries.html

Current data as of October 23, 2024

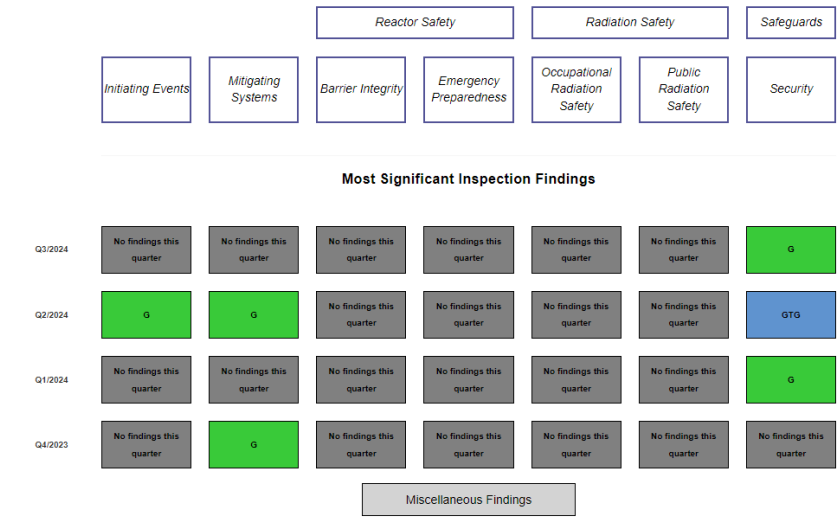
Millstone 3 - Quarterly Performance Summary

Q3/2024 Performance Indicators



Source: US NRC available at https://www.nrc.gov/reactors/operating/oversight/plant-by-plant-summaries.html

Current data as of October 23, 2024



Since the last Council report:

- There were two planned refueling and maintenance outages:
  - On September 3, 2024, Millstone Unit 3 was shut down for a planned maintenance outage to replace a pressurizer safety relief valve and reactor coolant pump seal. The unit was returned to rated thermal power on September 18, 2024.
  - On October 3, 2024, Millstone Unit 2 was shutdown for a planned refueling outage. The unit returned to rated thermal power on November 11, 2024.
- There were no unplanned shutdowns of Millstone Unit 2.
- There were no unplanned shutdowns of Millstone Unit 3.
- There were two (2) unplanned power changes of Millstone Unit 2:
  - On July 30, 2024, Unit 2 reduced power to 88% due to a steam leak resulting from a feed water relief valve that had lifted. The steam leak was non-radioactive. The unit returned to rated thermal power on August 15, 2024.
  - On November 13, 2024, Unit 2 operators reduced power from 100% to 68% following the identification of an approximately 130 deg C hotspot on the motor operated disconnect (MOD) switch for the Unit 2 main electrical generator. Daily thermography was being performed because of slightly elevated temperatures coming out of the recent outage and this morning the temperature reached the upper limit action value. The Main Electrical Generator was taken offline for repairs. The reactor remained at 10-12% power during the repairs to the MOD. The unit returned to rated thermal power on November 18, 2024.
- There were three (3) unplanned power changes of Millstone Unit 3:
  - On January 8, 2024, the unit was taken off line to repair a steam leak on the 'D' steam generator feedwater stop valve and to replace the 3A reactor coolant pump seal. The unit returned to rated thermal power on January 19, 2024.
  - On August 29, 2024, the unit reduced power to 91% as a result of an issue with a heater drain pump. The unit returned to rated thermal power on August 31, 2024.
  - On December 23, 2024, the unit reduced power to 90% due to issues with secondary plant (non-radioactive) feedwater heater issues. The unit returned to rated thermal power on December 24, 2024.
- No station emergency events were declared.
- The NRC identified fifteen non-cited inspection findings – fourteen (14) were determined to be of very low safety significance (Green). One security violation was determined to be greater than green. The NRC has conducted a follow-up inspection of the corrective action effectiveness for the greater than green finding, determined them to be effective and has closed the finding. IN addition, the NRC identified two (2) Severity Level IV cited violations.
- Dominion made two (2) Licensee Event Reports (LERs) at Millstone Unit 2 pursuant to 10 CFR § 50.73:
  - Millstone Unit 2 LER 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.
  - Millstone Unit 2 LER 2024-002-00, “Failed check valve resulted in an unanalyzed condition.”
- Dominion made three (3) Licensee Event Reports (LERs) at Millstone Unit 3 pursuant to 10 CFR § 50.73:
  - Millstone Unit 3 LER 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.

    - Millstone Unit 3 LER 2024-01, "Loss of Safety Function and Condition Prohibited by Technical Specifications for Loss of Secondary Containment Boundary" dated October 14, 2024
    - Millstone Unit 3 LER 2024-002-00, "Door Latch Failure Resulted in Loss of Safety Function for Secondary Containment Boundary" dated November 26, 2024.
- The NRC and the Federal Emergency Management Agency (FEMA) conducted an inspection and assessment of station and offsite emergency response organizations during a biennial emergency plan exercise. No findings or violations were noted.

Extended Operations of Millstone

Millstone units were originally licensed for 40 years of operation (Millstone Unit 2 was licensed to 2015 and Millstone Unit 3 to 2025). In 2004 Dominion applied to the NRC to extend the licenses of both Units 2 and 3 by 20 years to 60 years for each unit.

Pursuant to NRC regulations in10 CFR part 54, an applicant for a renewed license must review all structures, systems, and components (SSCs) to identify those that require an aging management plan (AMP). The SSCs subject to an AMP are those that perform a safety function without moving parts or without a change in configuration or properties and are not subject to replacement based on qualified life or specified time period. As part of its application to extend the operating licenses, Dominion demonstrated that the effects of aging will be managed in such a way that the intended function or functions of those SSCs will be maintained, consistent with the current licensing basis (CLB), for the period of extended operation. Only passive systems require an AMP as active equipment is considered to be adequately monitored and maintained by existing programs. In other words, the detrimental effects of aging that may affect active equipment are more readily detectable and can be identified and corrected through routine surveillance, performance monitoring, and maintenance activities. The surveillance and maintenance activities programs for active equipment, as well as other aspects of maintaining the plant design and licensing basis, are required throughout the period of extended operation. After extensive safety review, the NRC approved the licensed extensions in 2005. The NRC published its safety review as NUREG-1838. Currently, the NRC has licensed Dominion to operate:

- Millstone Unit 2 through July 2035
- Millstone Unit 3 through November 2045

The period of extended operations (PEO) is the time period in the operations of the nuclear power plant that represent the 20 years after the initial license period. Millstone Unit 2 entered its PEO on July 31, 2015. Millstone Unit 3 will enter its PEO on November 25, 2025.

Dominion briefed us that they submitted a letter to NRC stating that they intend to file for a Supplemental License Renewal (SLR) to allow another 20 years of operation extending the license to 80 years total. Dominion expects to file the formal SLR request in 2027 which would extend the operating licenses of Millstone Unit 2 to 2055 and of Millstone Unit 3 to 2065.

Emergency Events

Dominion did not declare any emergency events at Millstone in 2024.

2024 Emergency Plan Exercise:

The June 4, 2024 Millstone Power Station Hostile-Action Based (HAB) Exercise involved stakeholders from the State of Connecticut, the State of New York, the State of Rhode Island, local communities, and

private and volunteer organizations. The exercise provided stakeholders a critical opportunity to demonstrate the core capabilities required to protect the public during a radiological emergency involving a nuclear power plant (NPP). The HAB (security related) emergency exercise also provided local, state and federal law enforcement agencies an opportunity to integrate into the station and state radiological emergency response organizations. The NRC did not identify any violations or findings. FEMA noted the following strengths during the Millstone Power Station HAB Exercise:

- Exercise participants overcame adversity during a face-pace scenario and collaborated as a team to solve problems throughout the exercise.
- Direction and control of the multiagency response to the simulated HAB incident was exceptional.
- It was evident that a substantial amount of effort and planning was put into exercise preparation.
- All locations displayed dedication and commitment to public health and safety. Players demonstrated excellent communication, teamwork, and professionalism.

FEMA did not observe or identify any findings indicating inadequacy of organizational performance that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of Millstone.

One Council member noted that the joint public meeting conducted by the NRC and FEMA related to exercise provided little useful information.

Environmental Monitoring and Events

There were no environmental impact events at Millstone in 2024 requiring reporting to the state.

Council Assessment

Based upon the information presented and detailed in the minutes, the Council notes the following:

- While there was some improvement noted in reducing the number of operational events (forced outages, extended outages, and unplanned power changes), these events continue to challenge station performance. In particular, the Council noted outages continue to be extended beyond schedule.
- The number of required Licensee event reports remains higher than in past years potentially indicating that issues continue to challenge safety systems rather than being identified and corrected at lower levels.
- There appear to be a number of repeat issues including those associated with power operated relief valves, main steam isolation valves, reactor coolant pump seals, steam supply check valves to the Unit 2 turbine driven auxiliary feedwater pump, and secondary containment barrier.
    - The NRC should consider additional review of Dominion's problem identification and resolution (PI&R).
    - The repeat nature of several events may be indicative of the loss of organizational knowledge. In particular, the number of changes in key management positions appears high.
- There are an increased number of issues related to aging infrastructure at the site and the inspection and maintenance of those structures. For example, issues associated with the service water supports in the Unit 2 turbine building resulted in significant extension to the scheduled refueling outage.
    - With Millstone Unit 3 entering its period of extended operations in 2025, the NRC and the Council should provide additional review of the aging management programs
- The multiple security related issues continue to occur. The Council lacks visibility into nature of these issues since publicly available reports contain no details.

The Council notes that Dominion made several senior management changes in 2024 (and 15 changes in last 18 months) including the plant manager, director of nuclear safety and licensing and station vice president. The Council will continue to monitor performance at Millstone with respect to these issues and trends as well as monitor the impact of new management on station performance.

The Council recommends the NRC and Dominion evaluate the increased operational and regulatory challenges for common causes and organizational issues.

Advanced Nuclear

The Council reviewed the draft report prepared by the Department of Energy and Environmental Protection (DEEP) pursuant to section 35 of Public Act (PA) 23-102 which evaluated deploying new nuclear in the state. Written comments were provided by the Council and are included in an appendix to this report.

Dominion briefed the Council on the company's interest in new nuclear and small modular reactors (SMRs). Dominion management stated the company 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. They 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. 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. They 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.

Connecticut Yankee

The Connecticut Yankee Atomic Power Company (CY) plant began commercial operation in 1968 and produced more than 110 billion kilowatt-hours of electricity during its 28-year operating history. In 1996, the CY Board of Directors voted to permanently close and decommission the power plant. After two years of planning and preparation, actual decommissioning began in 1998 and was completed in 2007. CY has operated the NRC licensed Independent Spent Fuel Storage Installation (ISFSI) at the Haddam Neck site since 2004. The spent nuclear fuel and GTCC waste at the ISFSI facility is stored in 43 dry casks containing dual purpose canisters licensed by the NRC for both storage and transportation. The NRC approved the NAC-MPC Dry Cask Storage System Certificate of Compliance (CofC) renewal in 2024. The U.S. Department of Energy remains obligated under the Nuclear Waste Policy Act and by contract with CY to remove and dispose of the spent nuclear fuel and high-level radioactive waste.

CY Site Update:

There were no ISFSI lost time accidents, OSHA recordable injuries, or first aid cases in 2024.

As required by the Aging Management Program, there was a canister inspection at Connecticut Yankee in July 2024. There was one minor indication of water staining identified that was entered into the Corrective Action Program. No inspection interval or scope revisions are expected to be required. The NRC triennial Operations/Safety Inspection at Connecticut Yankee Atomic was conducted the week of July 22, 2024, coinciding with the aging management program inspection. The NRC did not identify any findings or violations.

No reports have been made to the NRC Operations Center since the last update report.

2024 Emergency Plan Exercise:

2024 was an exercise year for CY. The Fire/Medical Drill occurred on Thursday, June 27, 2024, and the Radiological Exercise occurred on August 29, 2024 including participation by state and local agencies. The site held the annual Emergency Plan site familiarization training on March 21, 2024, for Local Law Enforcement (LLEA) and local fire and emergency medical services.

NRC Inspections

The NRC triennial Operations/Safety Inspection at Connecticut Yankee Atomic was conducted the week of July 22, 2024, coinciding with the aging management program inspection. The NRC did not identify any findings or violations.

No reports have been made to the NRC Operations Center in 2024.

Decommissioning:

Millstone - No significant decommissioning activities were conducted at the unit during 2024.
Connecticut Yankee – Normal operations, no regulatory findings were identified during 2024.

High Level Nuclear Waste:

Department of Energy

The US Department of Energy (DOE) continues to focus on their consent-based siting process for a federal consolidated interim storage facility as directed by Congress.

On July 1st, the DOE issued a Request For Information (RFI) to identify industry partners interested in contributing to the development of federal consolidated SNF/HLW interim storage facilities. DOE is additionally seeking information from sources interested in providing engineering design, project management, integration, and other services needed to build and manage federal consolidated interim storage facilities. The RFI states that DOE plans to open a federally owned interim storage facility by 2040 and to open a permanent deep geologic repository for spent nuclear fuel by 2070.

On July 31st the DOE Office of Nuclear Energy released a request for information about what it might need to conduct what it calls a Package Performance Demonstration that could "help build public trust and confidence in the safety of spent nuclear fuel (SNF) transportation casks and SNF transportation by rail, heavy-haul truck and barge." To build public trust, the office plans to drop, drown and light on fire containers of the type that would be used to transport spent fuel to a future government-owned interim storage site from power plants across the country, according to the request for information. According to the RFI, DOE is looking for everything it needs to conduct regulatory test demonstrations that containers are sturdy enough to meet NRC requirements.

Congress

Authorizing Legislation

Advancing Research in Nuclear Fuel Recycling Act of 2024: U.S. Sens. Ted Cruz (R-TX) and Martin Heinrich (D-N.M.) introduced a bill that would require the DOE and the National Academies of Sciences, Engineering, and Medicine (NASEM) to create an independent committee of experts to study new technologies and opportunities for recycling the country's inventory of spent nuclear fuel. Introduced on September 24th, the "Advancing Research in Nuclear Fuel Recycling Act of 2024'' calls for a DOE-commissioned study evaluating the costs, benefits, and risks—including proliferation—of recycling U.S. spent nuclear fuel into usable fuels for commercial and advanced reactors, as well as for other nonreactor applications, including medical, space, industrial, and advanced battery applications.

The Nuclear Waste Administration Act: On September 25th Congressmen Mike Levin (D-CA) and August Pfluger (R-TX) introduced "The Nuclear Waste Administration Act" that would establish a new single-purpose, independent federal agency to manage the nation's nuclear waste. The bill would transfer the responsibilities for siting, constructing, and operating nuclear waste storage facilities and repositories from the Department of Energy (DOE) to the new Nuclear Waste Administration. The bill mirrors legislation introduced a decade ago by a bipartisan group of Senators, which was largely inspired by recommendations made by an Obama-era Blue Ribbon Commission report that studied how to best deal with existing and future nuclear waste. Senate Energy and Natural Resources Chair Joe Manchin (I-WV) most recently reintroduced the bill in 2022. All of the prior versions of the Nuclear Waste Administration Act died in Committee without a vote.

Appropriations Legislation

House Energy & Water Development FY 2025 Appropriations bill: The bill was approved by the full Committee on July 9th. The funding tables indicate that they held Used Fuel Disposition R&D stable at $47 million, but again cut the Integrated Waste Management System program, this time by $30 million from last year's level and $28 million from the Administration's request for additional funding. This is similar to the position taken by the House last year that was overturned by the Senate and in the bicameral negotiations at the end of the FY '24 process.

The Committee recommendation included $12,040,000 for Nuclear Waste Disposal for Nuclear Waste Fund (NWF) oversight activities essentially for continued DOE spent fuel contract administration and a holding pattern at Yucca Mountain. It prohibited the use of any federal funds in support of private CISF efforts not specifically authorized unless state, tribal and local governments formalize consent with an exception for currently licensed facilities storing commercial SNF as of the date of enactment. The bill did not receive a floor vote before the October 1st recess.

Senate Energy & Water Development FY 2025 bill: On August 1st the full Senate Appropriations Committee unanimously approved the FY 2025 Senate Energy and Water Appropriations Bill (S.4927). The Committee Report accompanying the bill text clarifies that the Committee fully funded the Administration's request of $53 million for the Integrated Waste Management account. It also specifically directed the DOE to move forward under its existing authority to identify a site for a Federal CIS facility.

The DOE was further directed to use a consent-based approach - and it specifically reminded DOE that the Nuclear Waste Policy Act provides for a wide variety of activities that may take place prior to the limitations in that act. Which includes providing Congress with recommendations for a mechanism to ensure any SNF/HLRW stored at a consolidated storage facility pursuant to the section shall move to deep geologic disposal capacity.

Senate Interior & Environment Appropriations FY 2025 bill: The bill provides $250,000 to develop a generic, technology-neutral standard for a second nuclear waste disposal repository. The bill passed the Senate on July 24th and included funding to develop a generic, technology-neutral standard for a second nuclear waste disposal repository. The goal is for the Environmental Protection Agency (EPA) to use modern and international practices in creating - new plans to dispose of all the nation's SNF and HLW (commercial, naval, WWII legacy, and new nuclear). The EPA had requested $635,000 to fund this work— but the bill's proposed $250,000 - would assist getting the process initiated. None of the Senate Appropriations bills that were favorably passed out of the full Appropriations Committee were voted on before the October 1st recess.

Nuclear Regulatory Commission

Decommissioning Rulemaking

The NRC staff submitted the final Decommissioning Rulemaking to the Commission on January 31, 2024. The final rule would amend the NRC's regulations to implement specific regulatory requirements for different phases of the decommissioning process, consistent with the reduced radiological risk as a facility transitions from operations to decommissioning. The amended regulations would incorporate best practices and lessons learned from nuclear power plants that have transitioned to decommissioning and would improve the effectiveness and efficiency of the NRC's regulatory framework The NRC expects to publish the final rule in 2025.

Private Consolidated Interim Storage Facility (CIS) Status

The Holtec New Mexico and the Texas Interim Storage Partners (ISP) NRC licensed CIS facilities have been licensed by the NRC, however, both remain subject to litigation and strong state political opposition.

The NRC and ISP filed petitions on June 12th requesting the Supreme Court review and overturn 5th Circuit Texas facility decisions. On June 25th the NRC and HOLTEC filed petitions requesting the Supreme Court to review and overturn of the 5th Circuit New Mexico facility decisions. Both petitions remain pending before the Supreme Court. NEI filed an amicus brief in support of NRC on July 12th and the State of Texas and Fasken Land and Minerals, LTD filed briefs in opposition on August 21st. On August 27th the DC Court denied the petitioners request to review the NRC license approval.

The future of those sites now rests with the US Supreme Court as dockets in both the NRC and the ISP cases included petitions for the high-court conference by the Justices on September 30th where the Court agreed to hear the cases. The Court then agreed to hear the cases involving the NRC's authority to grant licenses to the private companies for consolidated interim storage of SNF in Texas and New Mexico.

The U.S. Court of Appeals for the Fifth Circuit vacated the licenses that NRC granted to Interim Storage Partners for their CIS facility in Texas and Holtec International for theirs in New Mexico. The Fifth Circuit ruled that that NRC lacked the statutory authority to issue such licenses and also held that individuals who had not participated in the NRC hearing process could nonetheless challenge agency actions in court. The Fifth Circuit decisions splits with the D.C. and Tenth Circuit of Appeals decisions that previously approved NRC's authority to grant the licenses.

A decision by the Court is expected by the middle of 2025.

ADVANCE Act

The Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act of 2024 was passed with bipartisan support and signed by President Biden in July 2024. It requires the NRC to take a number of actions, particularly in the areas of licensing of new reactors and fuels, while maintaining the NRC's core mission to protect public health and safety. The Act affects a wide range of

NRC activities, including by supporting the recruitment and retention of the NRC workforce, adding flexibility in the NRC's budgeting process, enhancing the regulatory framework for advanced reactors and fusion technology, and requiring initiatives to support the NRC's efficient, timely, and predictable reviews of license applications.

The NRC plans to address the Act's requirements by:

- implementing initiatives to achieve efficient, timely, and predictable license application reviews
- establishing an expedited procedure for reviewing qualifying new reactor license applications
- developing a regulatory framework for fusion technology
- implementing changes to how the agency recovers fees from licensees, including establishing a lower hourly rate for advanced reactor applicants and pre-applicants
- assessing the licensing review process for new nuclear facilities at former fossil-fuel power plant sites and brownfield sites
- developing strategies and guidance for microreactors
- removing certain limitations on foreign ownership of some types of licensed facilities
- continuing to support international coordination on nuclear technologies and licensing activities
- implementing new requirements relating to nuclear fuel
- As required by the Act, the NRC will update its mission statement to specify that licensing and regulation of the civilian use of radioactive materials and nuclear energy will be conducted in a manner that is efficient and does not unnecessarily limit the civilian use of radioactive materials and deployment of nuclear energy or the benefits of civilian use of radioactive materials and nuclear energy technology to society. The NRC is and will remain the world's gold standard nuclear regulator. Nuclear safety and security will always come first!

The NRC is working to meet the Act's various deadlines for providing reports to Congress and completing appropriate revisions to agency regulations or guidance. The Office of the Executive Director for Operations (OEDO) is coordinating the implementation of the provisions in the ADVANCE Act and the development and submission of reports to Congress.

Council Activities in 2024

As required by CGS16-11a (PA 96-245) as amended, the Council held four public meetings. The purpose of these meetings was to provide a venue for discussion of issues relating to the safe operation of the state's nuclear power plants. Detailed meeting minutes are included in Appendix 2.

- May 16, 2024 (Waterford Town Hall): This was a joint meeting with the NRC Region I staff and focused on the Annual Assessment Report of Millstone Power Station Units 2 and 3 for the four quarters of calendar year 2023 by US Nuclear Regulatory Commission (NRC): Matt Young, Chief, Projects Branch 2, Division of Operating Reactor Safety; Justin Fuller, Senior Resident Inspector; E. Bousquet, Resident Inspector; Dominic Antonangeli, Resident Inspector; S. Elkhiamy, Senior Project Engineer. The NRC reported that both Millstone Units 2 and 3 were operated in a manner that preserved public health and safety and fully met NRC cornerstone objectives.

- September 20, 2024 (Waterford Town Hall): Dominion Nuclear Energy Inc. representatives 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 provided an update of activities at Millstone Power Station.

- December 10, 2024 (Waterford Town Hall): The Council discussed trends and observations for preparing the 2024 annual report.

Millstone 1 Decommissioning Advisory Committee (M1DAC): Since Millstone 1 remains in Safe Storage (SAFSTORE) and no significant activities were conducted at the Unit during the past calendar year, M1DAC did not meet in CY2024.

FSAC Meeting:
The CY Fuel Storage Advisory Committee meeting was held on May 1, 2024. Three members of the Council, Mr. Jeffrey Semancik, Mr. Craig Salonia and Dr. James Sherrard attended.

Recommendations

State

1. DEMHS and DEEP should continue to address any emergency preparedness issues at Connecticut's nuclear sites.
2. DEEP, in conjunction with Connecticut State Police should continue to address any security issues at Connecticut's nuclear sites.
3. DEEP should continue radiological and environmental monitoring of Connecticut's nuclear sites.
4. DEEP should dedicate sufficient resources to the review of Millstone's application for renewal of its National Pollutant Discharge Elimination System (NPDES) permit to ensure a timely determination decision
5. The Governor, General Assembly, DEEP, and the Council should continue to insist that the NRC continue vigilant oversight of Connecticut Yankee and Millstone Power Station sites for as long as high-level nuclear waste remains on site.
6. The Governor, General Assembly, and DEEP should encourage the federal government to develop a solution to the spent fuel storage. Specifically, The Governor, General Assembly and DEEP should endorse a nuclear waste strategy that includes consent based consolidated interim storage that gives priority to removal of waste from permanently shutdown reactors.
7. Elected officials should work with the Council to make appointments necessary to fill vacant Council positions.

The Council

1. Continue to monitor the stability of the Employee Concern Program and Safety Conscious Work Environment and Corrective Action Program at Millstone Power Station.
2. Continue to monitor operations and activities at Millstone Power Station and Connecticut Yankee Site, including the dry cask storage programs.
3. Continue to encourage the development of a solution to the problem of Spent Nuclear Fuel, High Level Waste and Greater Than Class C Low-Level Radioactive Waste and the safe transfer of this nuclear waste from Connecticut. Including the establishment of a consent based consolidated interim storage that gives priority to removal of SNF and GTCC waste from permanently shutdown and operating reactor sites and transfers title of SNF to DOE upon receipt.
4. The Council should facilitate an effective interface for the industry and the public as a forum to discuss safety and environmental costs and benefits of extending the existing nuclear fleet and deployment of new nuclear reactors in the state.
5. The Council should monitor actual and proposed changes to the Millstone emergency plan and as well as implementation of these changes to ensure effective regional preparedness.

Conclusions

Dominion continues to safely operate the nuclear plants at Millstone Power Station. Spent nuclear fuel is safely stored and monitored in wet and dry storage at Millstone Power Station and in ISFSI at Connecticut Yankee. NRC and DEEP oversite provide effective oversite of activities. All oversite entities and stakeholders must continue vigilant oversight of Connecticut Yankee and Millstone Power Station sites for as long as high-level nuclear waste remains on site.

Appendix 1 Nuclear Energy Advisory Council Membership

Chair, Representative Kevin Ryan Oakdale: OD, Pennsylvania College of Optometry. State Representative and Assistant Deputy Speaker representing Ledyard, Montville, Norwich in the 139th House District. Adjunct Faculty, University of New Haven and University of Hartford.

Arnold "Skip" Jordan. Noank: BSME, Maine Maritime Academy; MBA, Boston University. Retired, former Vice President Dominion Support Services and Site Vice President Millstone Station. Former Reactor Operator at Millstone Unit 2.

John McGunnigle East Lyme: BS, Computer Science, US Naval Academy; MS Operations Research, US Naval Postgraduate School; former Commanding Officer, Nuclear Powered Submarine; Former Submarine Squadron Commander; Navy Captain.

Representative Anthony Nolan. New London: State Representative serving New London's 39th district. He is Chair of the legislature's Veterans and Military Affairs Committee and a member of the Appropriations and Internship Committees. He served with the U.S. Navy and retired after 23 years as a New London Police Officer.

Senator Catherine Osten Sprague: Mohegan Community College; State Senator and Deputy President Pro Tempore representing the residents of the 19th state Senatorial District communities of Columbia, Franklin, Hebron, Lebanon, Ledyard, Lisbon, Marlborough, Montville, Norwich, and Sprague

Craig Salonia Haddam**:** BS in Medical Technology from Northeastern University. Account manager and trainer for GE Health care Life Sciences division.

Deputy Chair, Jeffrey Semancik Groton: BS Physics, US Naval Academy. MS, Electrical Engineering, RPI. MBA UCONN. Former qualified engineer, nuclear powered aircraft carrier. Former Senior Reactor Operator at Millstone Unit 3. Director, Radiation Division, Department of Energy and Environmental Protection representing Commissioner Dykes.

John W. (Bill) Sheehan Waterford: BS, Naval Science, US Naval Academy; MBA, Rensselaer Polytechnic Institute; former Commanding Officer, Nuclear powered submarine.; retired Navy Captain

James Sherrard Mystic: PhD Nuc. & Mech Eng. MIT/UCONN. Chairman, Nuclear Engineering Technology Department, Three Rivers Community College.

Raymond D. Woolrich Waterford: BS, Nuclear Science, US Naval Academy; MS Computer Systems and Financial Management, US Naval Postgraduate School; former Commanding Officer, Nuclear Powered Submarine; retired Navy Captain; Naval Analyst, Sonalysts, Inc.

Appendix 2 Nuclear Energy Advisory Council PA 23-102 Study Written Comments

State of Connecticut

NUCLEAR ENERGY ADVISORY COUNCIL

Department of Energy and Environmental Protection
Bureau of Energy and Technology Policy
DEEP.EnergyBureau@ct.gov

March 5, 2024

RE: PA 23-102 Study Written Comments

Connecticut Public Act 23-102 (Section 35) charged the Department of Energy and Environmental Protection ("the Department") to conduct a study to, "evaluate the feasibility of deploying small modular reactors, advanced nuclear reactors, fusion energy facilities and other zero carbon resources that can improve affordability, fuel security, renewable integration, and winter reliability within the New England regional electric grid" ("the study). Section 35 also requires, "In conducting such study, the department shall consult the Nuclear Energy Advisory Council established pursuant to section 16-11a of the general statutes." As a key stakeholder in nuclear safety in the state of Connecticut, the Nuclear Energy Advisory Council ("the Council"), is charged to "(1) hold regular public meetings for the purpose of discussing issues relating to the safety and operation of the nuclear power generating facilities located in this state and to advise the Governor, the General Assembly and municipalities within a five-mile radius of any nuclear power generating facility in this state of such issues, (2) work in conjunction with agencies of the federal, state and local governments to ensure the public health and safety, (3) discuss proposed changes in or problems arising from the operation of a nuclear power generating facility."

Members of the Council are appointed by state and local officials to represent the communities near nuclear power facilities in the state. Members provide diverse experience and insights into some of the issues addressed by the proposed rule. The Council reviewed the draft study. (Mr. Jeffrey Semancik, who has been involved in the development of the study and represents Commissioner Dykes on the Council recused himself from comments.) The Council welcomes the opportunity to provide input and offers the following public comments on the study.

> ***The report is thorough and comprehensive. A more thorough review by the Council will take longer than the time provided for public comment.*** The report is well written and appears technically accurate. However, even with the technical background of the Council members, in order to properly address the issues, the study requires extensive technical and economic discussion. In order to be comprehensive, a more detailed review will require more than the 14 days provided by the public comment period.
>
> ***Due the dense technical information necessarily captured in the study, there are opportunities to improve the readability for the legislature's and the public's***

understanding of Advanced Nuclear Reactors and other generating sources. The Council offers the following specifics for improving readability of the report:

- Ensure that the Executive Summary succinctly states the conclusions of the report. Some Council members felt the executive summary did not completely capture the key findings of the study.
- Ensure the page numbers in the Table of Contents match the actual pages.
- Organize the report body with titles matching the takeaways from the Executive Summary, so individuals with interest can quickly research and digest any details they need.
- When the report summarizes information in a table (the tables in the report are excellent!) include the column headings in roll-over tables. This is not consistent in the draft report.
- When graphs in the study use abbreviations or acronyms, ensure the meanings are readily available near the graph.
- The list of acronyms at the beginning is an absolute necessity, but difficult to access when you are buried in a dense paragraph.

One member commented that the study lacked clarity in the forward-looking recommendations for the grid. It appears the state of Connecticut is trying to reach two goals simultaneously. One zero carbon generation for all electricity, but at the same time, using more electricity for various daily life functions, such as transportation, heating and cooling. While there were some graphs that appear to take into account future power needs, it is not clear what specifically these graphs take that into account. If the graph assumptions were identified, it would clarify what would need to be deployed and when given different mixes of available non-carbon sources. That is, what would the mix look like given different percentages for solar, wind, nuclear, and other sources? At different percentages for each and at any point that you needed a certain amount of generation capacity, (e.g this many wind turbines, or solar panels, or SMR's, or whatever else could be put into the mix). Connecticut has state carbon reduction goals, but we are part of an interconnected regional system. What are the goals of the other states in our region and what if their goals change? How will that impact the zero-carbon mix and when it needs to be deployed? The first priority would appear to be to get the necessary infrastructure - generation, power storage, transmission - in focus, then start moving more things to strictly electric powered.

Thank you for your consideration of our comments.

Very Respectfully,

Representative Kevin Ryan
CT 139th District
NEAC Chairman

Copy to:
NEAC

Appendix 3 Nuclear Energy Advisory Council Meeting Minutes

NUCLEAR ENERGY ADVISORY COUNCIL
May 16, 2024 7:00 PM
Waterford Town Hall

MINUTES

Members Present
Alternate Chair Mr. Jeffrey Semancik representing DEEP Commissioner Dykes
Mr. James Sherrard
Mr. R. Woolrich
Mr. Bill Sheehan
Sen Cathy Osten
Mr. Craig Salonia

Members not present:
Rep Kevin Ryan, Chair
Mr. A. Jordan
Mr. John McGunnigle

ML24135A081

1. **Call to Order of Meeting**
   The Council's Alternate Chair called the meeting to order at 7:00.

2. **NRC Reactor Oversight Program/Millstone End of Cycle Report** – Briefing on Millstone Power Station Annual Assessment by US Nuclear Regulatory Commission (NRC): Matt Young, Chief, Projects Branch 2, Division of Operating Reactor Safety; Justin Fuller, Senior Resident Inspector; E. Bousquet, Resident Inspector; Dominic Antonangeli, Resident Inspector; S. Elkhiamy, Senior Project Engineer.
   a. Mr. Young introduced himself and discussed his experience. He noted that the NRC has three fulltime resident inspectors (RIs) with unfettered access to all areas of Millstone Power Station. These RI's conduct the baseline inspections and supplements them with technical specialists from the Region 1 office in King of Prussia, PA and from NRC Headquarters in Bethesda, MD.
   b. Senior Resident Inspector (SRI) Mr. Fuller and Resident Inspectors (RIs) Mr. Antonangeli and Mr. Bosquet introduced themselves and stated their experience and education.
   c. Mr. Young briefed the Council on overall NRC assessment of performance related to Dominion Energy's operation of Millstone in 2023. He stated that both Millstone Units 2 and 3 operated safely and securely, protected public health and safety, and protected the environment throughout 2023 and continues to do so. He reviewed the NRC's Reactor Oversight Process (ROP) emphasizing that there are multiple inputs to the assessment process including

inspector inputs and findings, regional specialist inspectors, project manager input and performance indicators. The goal of the ROP is to catch low safety significance issues early and correct them. Based upon NRC's assessment, both Millstone Units 2 and 3 remain in the Licensee Response Column of the Regulatory Response Matrix (the highest level of performance) and will therefore remain under baseline inspection.

d. Mr. Fuller discussed overall indicator and inspection results at Millstone. The NRC identified 19 inspection findings in 2023. All were of very ow safety significance (Green). One apparent security violation identified in 2023 is still under evaluation. All performance indicators (PIs) are Green. The NRC has not identified any cross-cutting issues. This included a biennial Problem Identification and Resolution (PI&R) inspection in which the NRC evaluates Safety Conscious Work Environment (SCWE).
    i. Mr. Semancik asked how ROP results at Millstone compare to nation. Mr. Young answered that in 2023 all performance indicators at all sites in the U.S. were Green. Annually, about 6 licensees are outside of the licensee response column in the ROP matrix.
    ii. Mr. Sheehan asked if Dominio maintains on on-site SCWE presence. Mr. Fuller stated there is an onsite Employees Concern Program (ECP) manager who reports to Virginia. NRC SRI meets quarterly with the ECP manager to discuss issues and allegations. Inspectors review program files and quarterly reports to ensure issues and allegations are appropriately dispositioned.

3. Mr. Young addressed specific topics previously provided to the NRC by the Council.
    a. <u>NRC Special Inspection Team on security issue</u> – NRC is still processing findings from the special inspection and expects to finalize its review in June. The NRC cannot publicly discuss security issues. However, the NRC has ensured that the site has taken proper and immediate corrective actions to restore compliance so that they do not remain in a vulnerable position.
    b. Comprehensive Engineering Team Inspection (CETI) – CETI is a new quadrennial NRC engineering inspection that incorporates several different engineering inspections that were conducted separately. In the 4 years between CETI's the NRC conducts smaller focused engineering inspections.
        i. Mr. Sheehan noted that in his reviews of findings, there seem to be a number of issues related to pipes and valves which are crucial in the extended life of a plant. Mr. Young noted there was one violation in 2023 related to a service water system at Millstone Unit 2 that lengthened their scheduled maintenance outage. Once identified, Dominion corrected the issues. He stated the NRC is focused on looking at all aspects. Mr. Fuller noted that sometimes an independent person finds issues, but this does not relieve the licensee from their responsibility. He noted procedures require NRC inspectors to walkdown every accessible area of the plants.

ii. Mr. Woolrich asked about an issue recently identified with feedwater piping trenching and noted it seemed similar to an issue identified about two years ago. He asked how the pipes are identified for inspection and if the plant has a plan in pace to get at all of the piping systems. Mr. Fuller stated the licensee has a program, as part of their license extension, to inspect piping and systems in inaccessible and infrequently accessed areas. Dominion had the program but failed to properly implement it. The licensee has taken corrective actions to identify the areas. The NRC also has a targeted inspection being conducted within the next 2 years.

c. Apparent high number of NRC Identified findings – The NRC identified nine of the 13 findings in 2023. Historically, Millstone has averaged about eight findings per year. While the number of findings is somewhat higher, the number of very low safety significance (Grenn) findings is not a direct input to the ROP assessment. Several of the findings were related to service water and related to the extent of condition. The licensee has placed a much larger focus on field walkdowns and treating service water leaks like boric acid leaks.

   i. Mr. Semancik asked if it was unusual for there to be so many NRC identified findings. Mr. Young noted that it was not unusual for Green findings. He stated self identified issues are often not cited provided they are very low safety significance. Licensee identified findings are not considered in the ROP, but must be dispositioned by the licensee and documented in licensee event reports. Mr. Fuller added that Ris ensure that licensee identified issues are properly entered into the Corrective Action Process and dispositioned. He also noted the licensee also had two refueling maintenance outages in 2023 where more issues are identified.

d. Government Accountability Office (GAO) Audit on Climate Change Effects on Nuclear Power Plants – NRC has specific actions to address from the GAO report related to how does the industry identify new hazards. This evaluation is in progress and NRC has not responded to GAO yet. After the accident at Fukushima the NRC established the Process for the Ongoing Assessment of Natural Hazard Information to reviews data from across the world and assesses the impact on the world's reactor fleet to determine if specific reactors are vulnerable to similar incidents.

   i. Senator Osten asked if NRC was looking at confluence of extending reactor licenses to 80 years and climate change (what needs to happen to maintain safety). Mr. Young responded that in order to re-license, the plant must be able to sustain the conditions projected for the next period. NRC is currently assessing this as part of its GAO response. He noted that the onus is on the licensee to ensure the plant is operated and designed to sustain conditions within the design basis and this is an ongoing process. Senator Osten re-emphasized it is important that we are

paying attention to what is changing in the climate and ensure it is considered as part of any license renewal process.

ii. Mr. Sheehan noted that the tows have maps for local planning that show projected sea level rise over the next 50 years from the Connecticut River to the Rhode Island boarder. Mr. Young thanked Mr. Sheehan for this information and noted the NRC would review those maps. He noted that NRC reviewed similar maps when validating design at Seabrook station.

e. Apparent high number of operational challenges (power reductions and shutdowns) – The NRC power change performance indicator only defines shutdowns and power reductions as unplanned if they occur within less than 72 hours since discovery of the condition requiring power reduction or shutdown. Additionally, only power reductions greater than 20% are included. The unplanned power change performance indicator for Millstone in 2023 remained green but did decline. This performance indicator is green for all reactors in 2023.

i. Mr. Semancik noted the selection of 20% and 72 hours seems arbitrary especially since it is green for all reactors across the country. He questioned if licensees might be altering their response to manage the indicator, for example limiting power changes to less than 20% when it might be safer to reduce power more. Ms. Elkhiamy stated that the thresholds were based on engagement with the industry based on control and reactivity management margins for power and adequate time for preparing station personnel. Mr. Fuller noted they inspect to approved program. Mr. Young added that the performance indicators are reviewed every 2 years by NRC headquarters staff and that he would provide this feedback.

f. Apparent higher than normal number of conditions reported in Licensee Event Reports (LERs) – Industry feedback and operating experience is achieved through public reporting requirements codified in 10 CFR 50.72 (immediate reports) and 50.73 (60-day LERs). Inspectors verify the information in the LERs meets reporting requirements and that the licensee takes proper corrective actions before they close the issue. The goal is to ensure issues are closed within 12 months. For Millstone, NRC closed 3 LERs and is reviewing 3 more. In addition, there were 3 LERs submitted in 4Q23 that remain open. Dominion has corrected the problems and reported as required by the regulations.

i. Mr. Woolrich noted that the details of security issues are opaque to the Council and asked for reassurance that the NRC is providing adequate oversight. Mr. Young stated that the NRC is sensitive to this. NRC has security experts at region in conjunction with RI's on site. Mr. Fuller added that NRC Ris have access to all security material and areas which they inspect quarterly.

4. **Public Comment.** There were eighteen members of the public present. Mr. Young asked if any members had any questions or comments.
    a. One member of the public asked what oversight the NRC would be provided by the NRC for the construction and oversight of the proposed data center on the Millstone site. Mr. Young noted that other nuclear power plants have data centers on site. For example, Susquehanna Nuclear Power Plant has a data center on site. He noted that the licensee can make plant changes without prior NRC approval if the changes meet the criteria in 10 CFR 50.59 or with NRC approval. At this time the NRC doesn't have enough information about a specific design proposal at Millstone, but in design changes that have installed data centers at other reactor sites, the NRC has not identified any licensing or safety issues. Mr. Fuller also noted that he was previously at Vogtle Power Station where the licensee was able to support construction of two new reactor plants on same site as two operating units.
    b. A member of the public noted that Millstone is an aging plant and has to shutdown to refuel. They expressed concerns about having a 1.5M square foot data center there too. Mr. Young responded that plants are licensed to put out a certain amount of electricity, but it can go either to the grid or another load as long as total output is within the licensed limit. Where the electricy goes is outside of NRC authority.
    c. A member of the public asked several questions:
        i. Does the NRC have the power to shutdown a reactor? Mr. Fuller confirmed the RC could issue an order to require a reactor shutodown.
        ii. Why does Millstone blowdown its boilers at 2 or 3 AM? Mr. Fuller srtated he didn't have any information on boiler blowdown schedules.
        iii. Do reactors tighten up their inspection intervals when the change maintenance schedules? Mr. Fuller explained that the NRC ROP is a living program. As maintenance intervals are modified, inspections change accordingly.
        iv. For emergency evacuations do they consider the time it takes to evacuate? Mr. Fuller noted that they do consider evacuation time estimates including special needs.
        v. Does the NRC monitor the area to detect radiation? Mr. Antonangeli noted that while the NRC does not monitor radiation, they do require the licensee to monitor for offsite radiation. Dominion monitors all sectors both for direct radiation as well as taking air samples. Mr. Semancik added that the state of CT does conduct independent monitoring of radiation offsite.
    d. A member of the public thanked the NRC and Council for their work in protecting the public and urged the NRC to look at the proposed data center especially from a cyber terrorism perspective. Mr. Yong thanked the member for their comment an noted the NRC would inspect and evaluate any threats. However, until they have a submittal in front of them, the NRC cannot evaluate any impacts.

e. A member of the public stated he lived near the plant and expressed concern with security related to putting a data center on the same site as the power plant. He asked why the NRC would allow that. Mr. Young responded that, from a nuclear safety perspective, the preliminary design calls for the data center to be outside of the protected area which serves as the security zone. However, if a design is proposed that would impact security or the protected area, the NRC would evaluate and inspect to ensure it met requirements.

5. **Questions from the Council**
   a. Mr. Woolrich stated that he has generally impressed with engineering at Millstone but was concerned with their actions with respect to the pilot operated relief valve (PORV) at Unit3 in which a valve removed from the plant in 2005 was re-installed in 2022. As a result of materials in the old used in seating surfaces of old valve, the plant experienced a high leak rate. Mr. Woolrich noted that there seem to be a number of problems from Quality Assurance (QA), to repairs to operations. Mr. Fuller noted that the leak rate through the valve was 245 gallons per day and was within the Technical Specification limits and resulted from leakage past the solenoid operated pilot valve. He noted it happened because Dominion failed to maintain adequate QA controls. Following an inadvertent safety injection in 2005 where the PORV showed leakage, the plant elected to replace it with a better valve and placed the removed valve in QA storage. However, they failed to track that the valve they removed had stellite internals> Although he valve passed testing before being installed, industry operating experience (OE) shows stellite is susceptible to leaking. Dominion was aware of this OE and is still determining why and how they used the valve.
   b. Mr. Salonia noted that since he joined the Council, he has read more reports and issues over the last year. He asked if the NRC thought it might be an issue with the loss of experienced personnel or an again plant issue. Mr. Young responded that over the 2012 to 2017 period the NRC issued about 18 findings each year. With two refueling outages in 2023, NRC expected more issues to be identified. The NRC has not identified any adverse trends. This is evaluated by about 10 staff within the branch that look at issues all over the US and the world and build a dashboard of issues that inspection staff identifies for trends analysis. Overall the NRC assessment is that 19 findings (all Green) is higher than average but not an outlier. Mr. Fuller added that the amount of work that each licensee does to address each finding is extensive to improve performance. He hasn't seen any link to voluntary retirement program and has been impressed with the quality of people. So, he doesn't' see a gap in experience.
   c. Mr. Sherrard asked how gridlock in the federal government has affected the NRC and if NRC was fully staffed. Mr. Young responded that the NRC was fully staffed at the inspector level, but not all inspectors were fully qualified. Some need to get through the 3 to 6 month training process (depending on their background).

NRC Headquarters is not fully staffed but hired over 420 staff in 2023 and is on track to hire another 400 more staff in 2024.

6. **NEAC Business**
   a. **NRC Correspondence Reviewed since past meeting.**
   The following NRC Correspondence was reviewed by the Council:
      i. North Anna Power Station, Unit Nos. 1 and 2, Surry Power Station Unit Nos. 1 and 2, and Millstone Power Station, Unit Nos. 2 and 3 - Review of Appendix F to DOM-NAF-2, "Qualification of the Framatome ORFEO-GAIA and ORFEO-NMGRID CHF CORRELATIONS in the Dominion Energy VIPRE-D COMPUTER Code" (EPID L-2022-LLT-0003) dated December 20, 2023.
      ii. Millstone Power Station, Unit No. 3 - Issuance of Amendment No. 288 Re: Revision To Applicability Term For Reactor Coolant System Heatup and Cooldown Pressure-Temperature Limitations Figures (EPID L-2023-LLA-0009) dated January 12, 2024.
      iii. Millstone Power Station, Units 2 and 3 – Integrated Inspection Report 05000336/2023004 AND 05000423/2023004 dated February 14, 2024.
      iv. Annual Assessment Letter for Millstone Power Station, Units 2 and 3 (REPORTS 05000336/2023006 AND 05000423/2023006) dated February 28, 2024.
      v. Millstone Power Station, Units 1, 2, and 3 – Exemption from Select Requirements of 10 CFR Part 73 – Security Notifications, Reports, and Recordkeeping and Suspicious Activity Reporting (EPID L-2023-LLE-0072) dated March 8, 2024.
      vi. Millstone Power Station, Units 2 and 3 – Integrated Inspection Report 05000336/2024001 and 05000423/2024001 and Apparent Violation dated May 14, 2024.
      vii. Millstone Power Station, Units 2 AND 3 – Special Inspection Report 05000336/2023440 and 05000423/2023440 dated January 11, 2024.
         1. DEEP Radiation Division staff reviewed the security related information concerning these reports and details of the issues. DEEP staff met with the NRC security inspectors during their inspection to discuss all potential findings and with Dominion Security staff to review the specific findings including a walkdown at the site. DEEP reviewed the OUO (Official Use Only) version of the notice of violation. Based upon this review, DEEP concluded that NRC has assured that Dominion has taken appropriate and adequate compensatory and corrective actions to eliminate any

potential vulnerabilities and ensure the security of the station. 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.

viii. Millstone Power Station, Units 2 and 3 – Security Baseline Inspection Report 05000336/2023402 and 05000423/2023402 dated January 30, 2024.

1. DEEP Radiation Division staff reviewed the security related information concerning these reports and details of the issues. DEEP staff met with the NRC security inspectors during their inspection to discuss all potential findings and with Dominion Security staff to review the specific findings including a walkdown at the site. DEEP reviewed the OUO (Official Use Only) version of the notice of violation. Based upon this review, DEEP concluded that NRC has assured that Dominion has taken appropriate and adequate compensatory and corrective actions to eliminate any potential vulnerabilities and ensure the security of the station. 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.

ix. Annual Assessment Letter for Millstone Power Station, Units 2 and 3 (REPORTS 05000336/2022006 and 05000423/2022006) dated March 1, 2023.

b. **Other Correspondence Reviewed since past meeting.**

The following other Correspondence was reviewed by the Council.

i. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2023-003-00 (Serial No.: 23-307) RCS Temperature Detector Exceeeded Time Response Acceptance Criteria Resulting in a Condition Prohibited by Technical Specifications dated December 8, 2023.

ii. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2023-004-00 (Serial No.: 23-330), Reactor Coolant System Pressure Isolation Valves Operational Leakage Exceeded the Acceptance Criteria Resulting in a Condition Prohibited by Technical Specifications, dated December 19, 2023.

iii. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2023-005-00 (Serial No.: 24-067) Oil Leakage from "C" RSS Pump Motor Challenged Meeting its Mission Time Resulting

in a Condition Prohibited by Technical Specifications dated February 8, 2024.

iv. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2023-006-00 (Serial No.: 24-160) Pressurizer Power Operated Relief Valve Failed to Stroke Open During Surveillance Testing Resulting in a Condition Prohibited by Technical Specifications dated May 2, 2024.

c. Future Council Meetings.
   i. September 19, 2024 – Millstone Operations Update (Dominion Presentation)
   ii. December 12, 2024 – Annual Report Writing Meeting

7. **Adjournment**
   Meeting adjourned at 9:05 PM.

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Millstone Units 2 & 3 Annual Assessment Meeting for 2023

Reactor Oversight Process

Nuclear Regulatory Commission
Region I

May 16, 2024

ML24135A081

Agenda

- **Opening Remarks**
- **2023 Millstone Reactor Oversight Process (ROP) Assessment Summary**
- **Other NEAC Items of Interest**
  - Security Special Inspection & Engineering Inspection Changes
  - U.S. Government Accountability Office (GAO) Audit
  - 2023 Millstone Finding Summary
  - Power History and Performance Indicators
  - Licensee Event Reports
- **Q&A**

Overall Assessment

Millstone Units 2 and 3 operated safely in 2023 and continue to do so today

Inspection and Oversight

- Three full-time residents assigned to Millstone

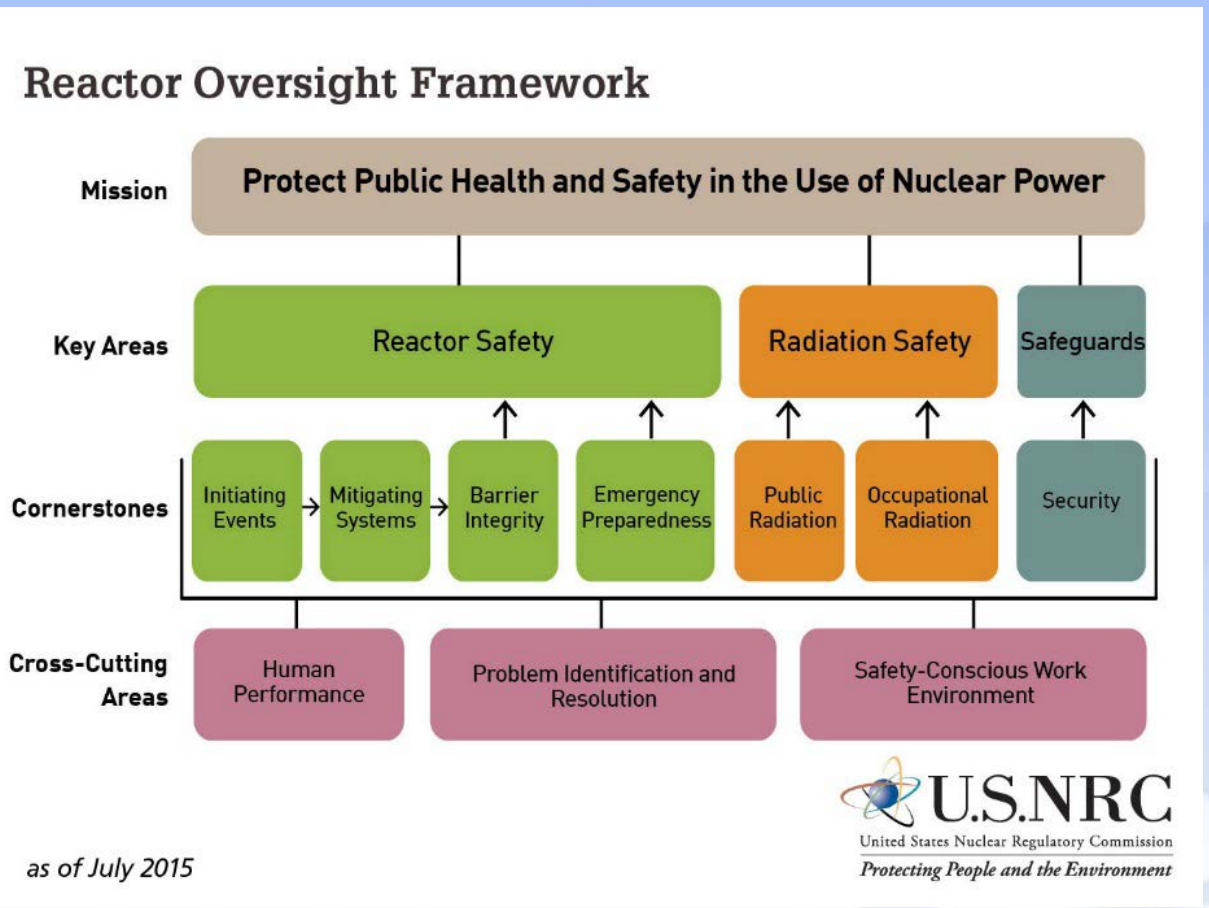
Justin Fuller
Senior Resident

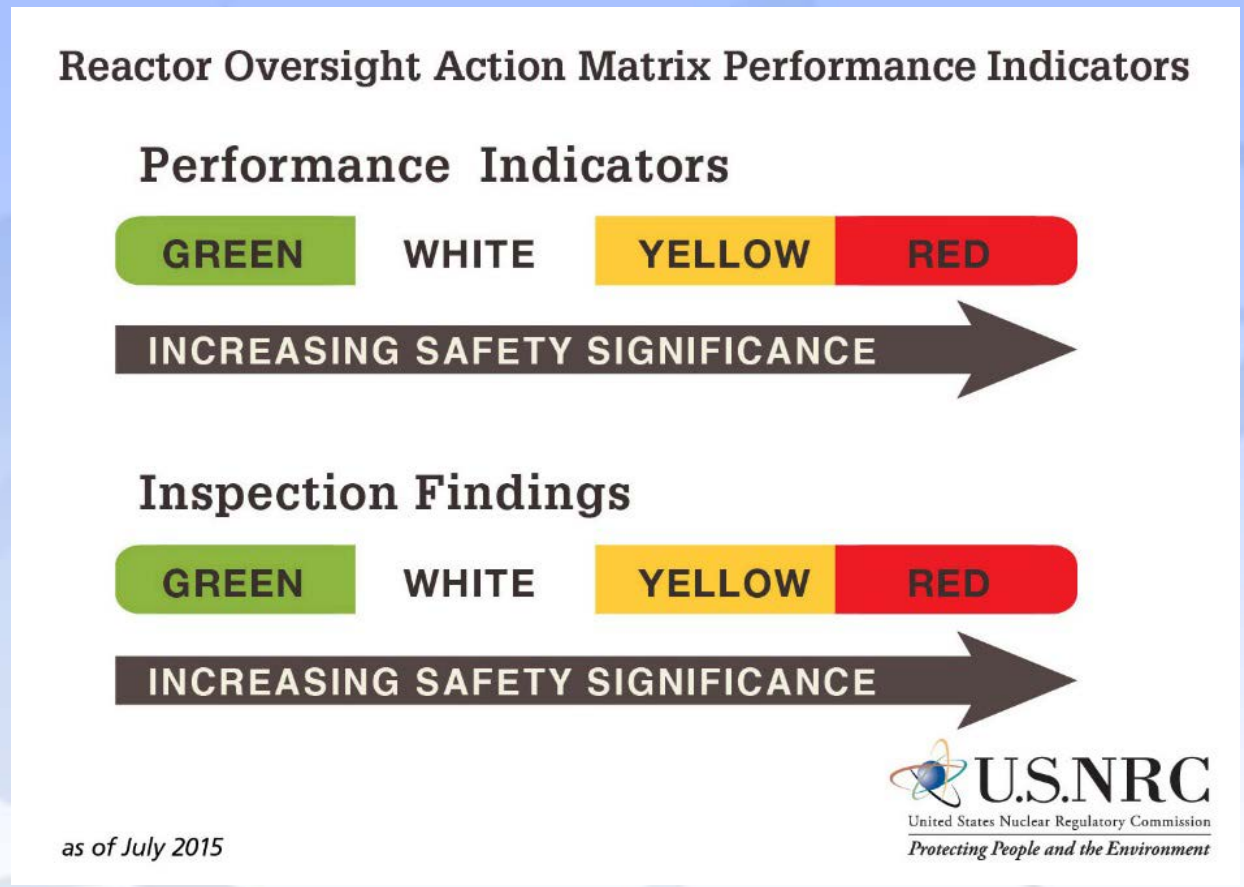
Dominic Antonangeli
Resident Inspector

Earl Bousquet
Resident Inspector

- Inspectors have unfettered access to all areas of the site
- Technical specialists conduct additional inspections

Reactor Oversight Process





Action Matrix Concept

Licensee Response	Regulatory Response	Degraded Performance	Multiple/Repetitive Degraded Cornerstone	Unacceptable Performance

Increasing Safety Significance

Increasing NRC Inspection Efforts

Increasing NRC/Licensee Management Involvement

Increasing Regulatory Actions

Millstone Units 2 & 3
2023 Assessment Summary

- Operated safely and in a manner that preserved the public health and safety and protected the environment
- Licensee Response Column
- 9063 hours of inspection and related activities
- Green Performance Indicators
- 19 Green Findings
  - Initiating Events = 2; Mitigating Systems = 11; Security = 6)
- 1 Apparent Violation (Security) – Final Significance Determination is in process

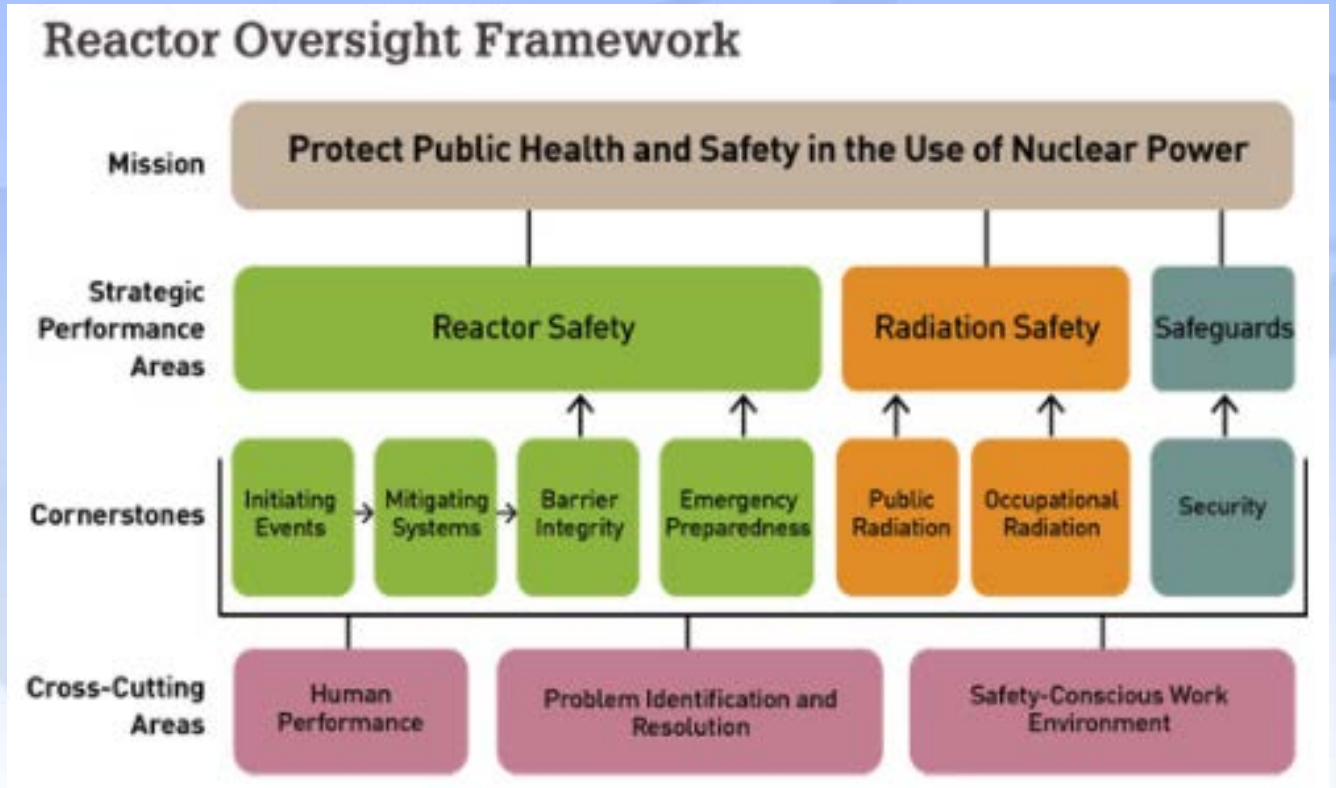
Safety Conscious Work Environment (SCWE)

Cross-Cutting Aspects

- No Human Performance Concerns
- 2022 Problem Identification and Resolution (PI&R) Inspection
  - 2024 Biennial PI&R is in progress
- No SCWE concerns

Allegations

- 3 allegations in 2023 (National Avg. = 3.6)
- Resident inspectors and regional staff are highly accessible and take all allegation matters seriously



Connecticut Nuclear Energy Advisory Council

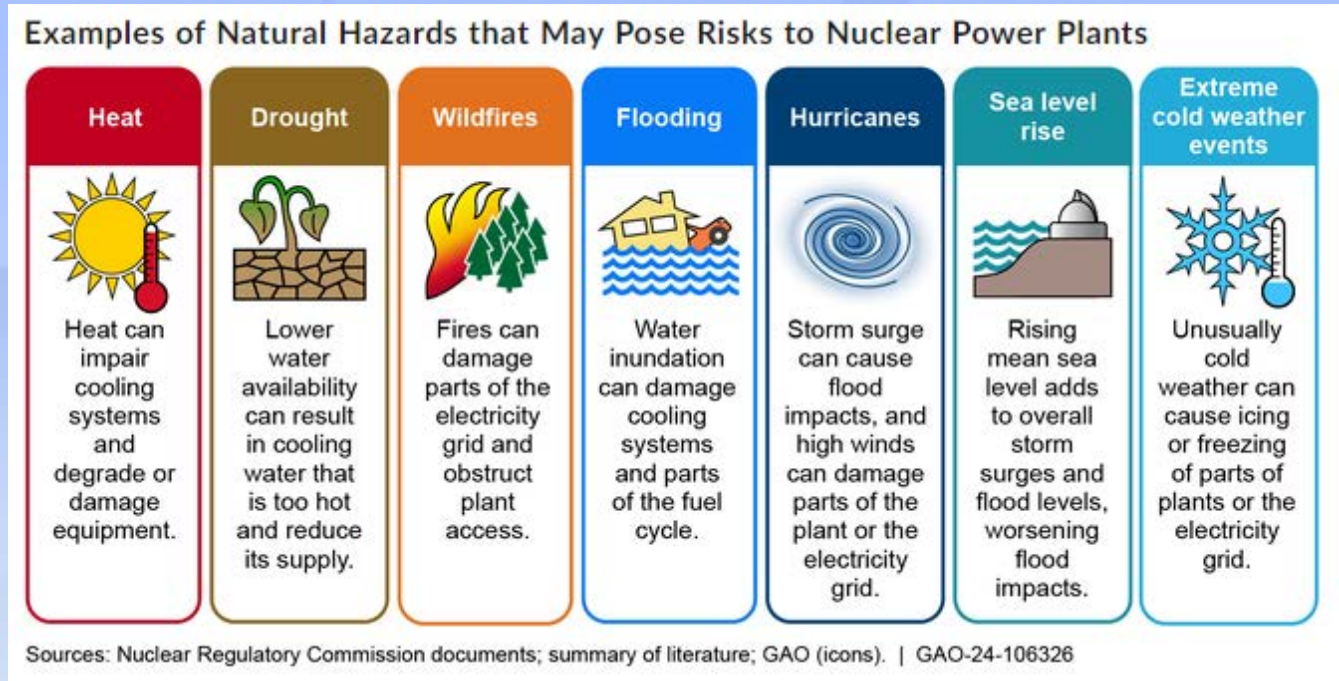
ITEMS OF INTEREST

Security & Engineering Inspections

- **Special Inspection November 16, 2023 (ML24010A182)**
  - Choice Letter Issued April 25, 2024 (ML24116A045)
  - Dominion Accepted the Finding and Apparent Violation on May 2, 2024 (ML24123A204)
  - Final significance determination is in progress
- **IP 71111.21M: Comprehensive Engineering Team Inspection (CETI) Changes**
  - CETI is the latest iteration of engineering team inspections that began in 1985 as safety system functional inspections
  - Improvements made over time based on Operating Experience, Industry Events, and PRA
  - IP 71111.21M Incorporates Design Basis Assurance Inspection (TEAM), 50.59 Inspection, and Heat Exchanger / Heat Sink Inspection

GAO Audit on Nuclear Power Plant Climate Resilience

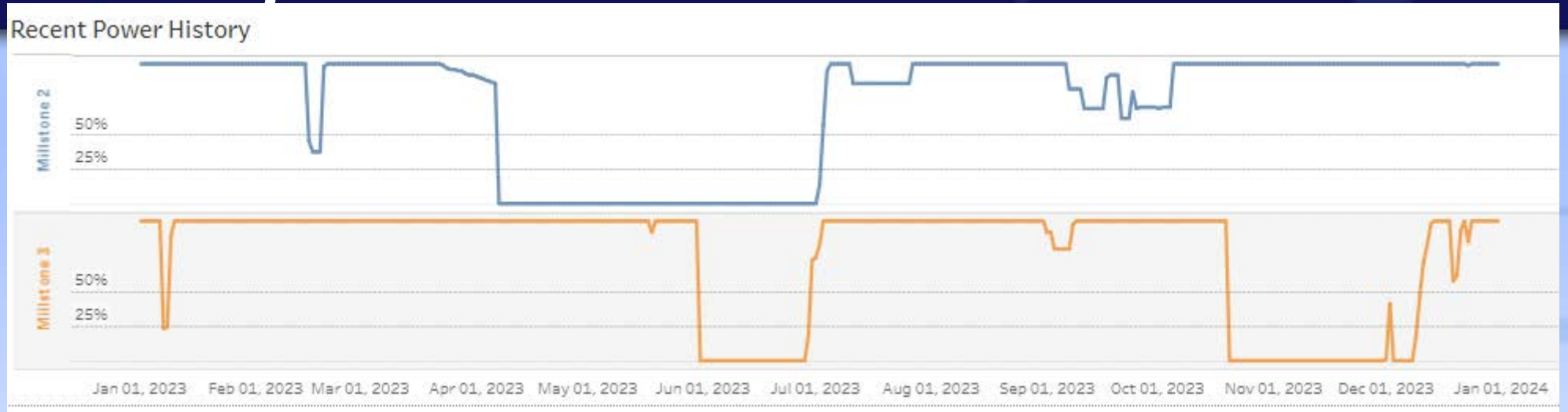
- GAO-24-106326
  https://www.gao.gov/products/gao-24-106326
- 3 recommendations for the NRC



Millstone Finding Summary - 2023

- **13 Green Findings in 2023**
  - 9 NRC-Identified GREEN Findings
  - 4 Self-Revealed GREEN Findings
- **Unit 3 Service Water Through-Wall Leak**
  - NCV 05000423/2023001-01, Through-Wall Leak on Unit 3 Service Water Piping
- **Unit 2 Service Water Pipe Tunnel (Infrequently Accessed Area)**
  - NCV 05000336/2023002-01, Failure to Perform General Condition Monitoring Inspections and System Engineering Walkdowns of Portions of the Safety-Related Service Water System in Accordance with Documented Procedures

Millstone Power History & Unplanned Downpower Performance Indicator - 2023



Date	Unit	Impact – Unplanned Power Change *(Power Change > 20%)*	Cause
February 14, 2023	2	100% to 34%	Feedwater heater tube leak
May 30, 2023	3	Automatic Trip (Unplanned Scram)	Ground on Main Generator Output Breaker
September 20, 2023	2	92% to 61%	Circ Pump Motor Issues
December 2, 2023	3	56% to 16%	Condenser Tube Leak
December 18, 2023	3	82% to 55%	Circ Water Traveling Screen
January 8, 2024	3	Manual – Controlled Shutdown	Unisolable Main Feedwater Leak

Millstone Licensee Event Reports - 2023

Event Date	Unit	Topic	Status
October 6, 2022	3	Emergency Core Cooling System Gas Void	Closed
May 9, 2023	2	Service Water Pipe Leak	Open – Review In Progress
May 30, 2023	3	Unit 3 Trip	Open – Review In Progress
July 6, 2023	2	Auxiliary Feedwater Check Valve	Closed
September 4, 2023	3	Auxiliary Feedwater Flow Control Valve	Open – Review In Progress
October 11, 2023	3	Reactor Coolant System Temperature Detector	Open – Review In Progress
October 20, 2023	3	Reactor Coolant System Isolation Valve Leakage	Open
November 8, 2023	Common	Security Event	Open
December 10, 2023	3	Oil Leakage from Containment Recirculation System Pump	Open

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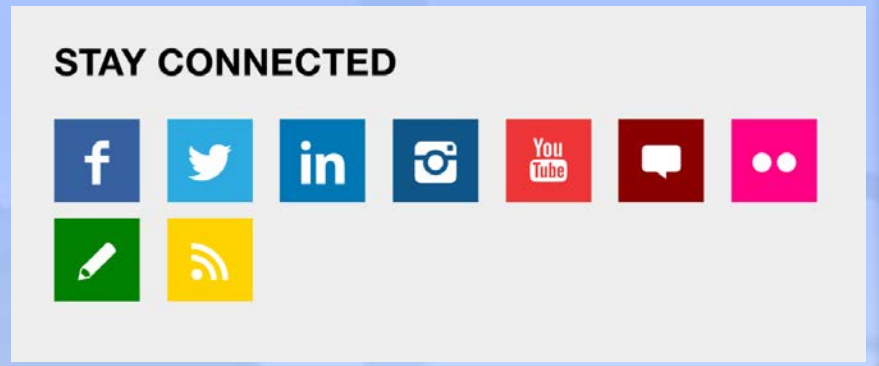
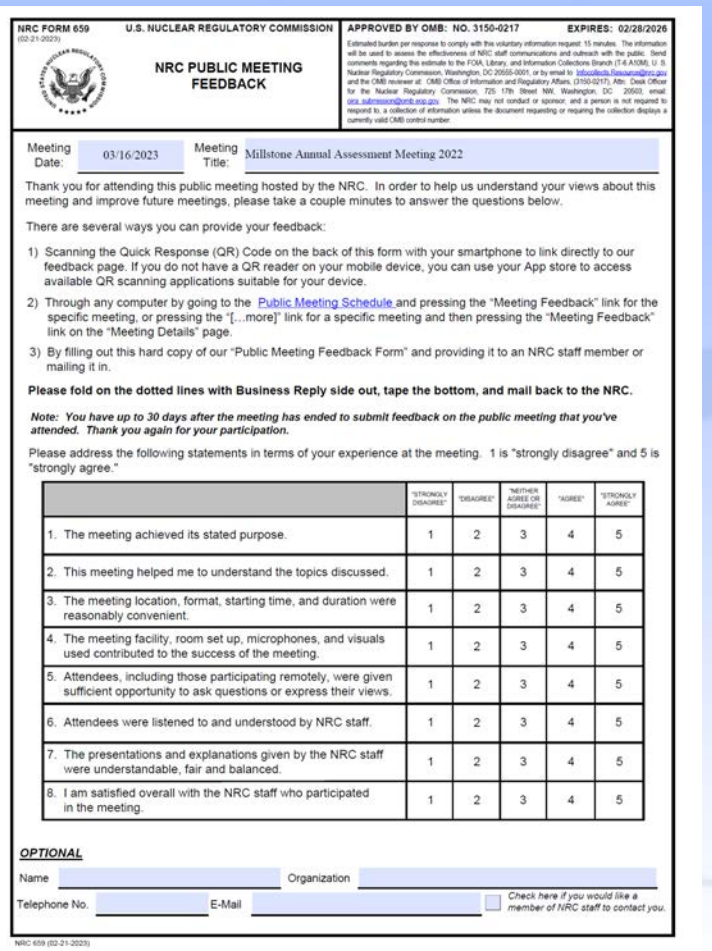
NRC Social Media Channels



Facebook	www.facebook.com/nrcgov/
Twitter	twitter.com/nrcgov
Instagram	https://www.instagram.com/nrcgov
YouTube	www.youtube.com/user/NRCgov
Flickr	www.flickr.com/photos/nrcgov/
LinkedIn	www.linkedin.com/company/u-s--nuclear-regulatory-commission/
RSS	www.nrc.gov/public-involve/listserver.html#rss

Annual Assessment Meeting Feedback



NRC FORM 659 (02-21-2023) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0217 EXPIRES: 02/28/2026

Estimated burden per response to comply with this voluntary information request: 15 minutes. The information will be used to assess the effectiveness of NRC staff communications and outreach with the public. Send comments regarding this estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollects.Resource@nrc.gov and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0217), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503, email: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

NRC PUBLIC MEETING FEEDBACK

Meeting Date: 03/16/2023 Meeting Title: Millstone Annual Assessment Meeting 2022

Thank you for attending this public meeting hosted by the NRC. In order to help us understand your views about this meeting and improve future meetings, please take a couple minutes to answer the questions below.

There are several ways you can provide your feedback:

1) Scanning the Quick Response (QR) Code on the back of this form with your smartphone to link directly to our feedback page. If you do not have a QR reader on your mobile device, you can use your App store to access available QR scanning applications suitable for your device.
2) Through any computer by going to the Public Meeting Schedule and pressing the "Meeting Feedback" link for the specific meeting, or pressing the "[…more]" link for a specific meeting and then pressing the "Meeting Feedback" link on the "Meeting Details" page.
3) By filling out this hard copy of our "Public Meeting Feedback Form" and providing it to an NRC staff member or mailing it in.

Please fold on the dotted lines with Business Reply side out, tape the bottom, and mail back to the NRC.

Note: You have up to 30 days after the meeting has ended to submit feedback on the public meeting that you've attended. Thank you again for your participation.

Please address the following statements in terms of your experience at the meeting. 1 is "strongly disagree" and 5 is "strongly agree."

	"STRONGLY DISAGREE"	"DISAGREE"	"NEITHER AGREE OR DISAGREE"	"AGREE"	"STRONGLY AGREE"
1. The meeting achieved its stated purpose.	1	2	3	4	5
2. This meeting helped me to understand the topics discussed.	1	2	3	4	5
3. The meeting location, format, starting time, and duration were reasonably convenient.	1	2	3	4	5
4. The meeting facility, room set up, microphones, and visuals used contributed to the success of the meeting.	1	2	3	4	5
5. Attendees, including those participating remotely, were given sufficient opportunity to ask questions or express their views.	1	2	3	4	5
6. Attendees were listened to and understood by NRC staff.	1	2	3	4	5
7. The presentations and explanations given by the NRC staff were understandable, fair and balanced.	1	2	3	4	5
8. I am satisfied overall with the NRC staff who participated in the meeting.	1	2	3	4	5

OPTIONAL

Name _____ Organization _____

Telephone No. _____ E-Mail _____ ☐ *Check here if you would like a member of NRC staff to contact you.*

NRC 659 (02-21-2023)

How to Submit feedback:

- Scan QR Code
- On any computer visit the NRC Public Meeting Schedule
  - Click "Meeting Feedback" or
  - Click "…more" on the Meeting Details page

Meeting number: 20240627

Questions and Answers

This ends the Meeting

Thank You for Attending

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 Refrigerent 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 f 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.

l. 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 – Natrium 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. Goolsby 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 it 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

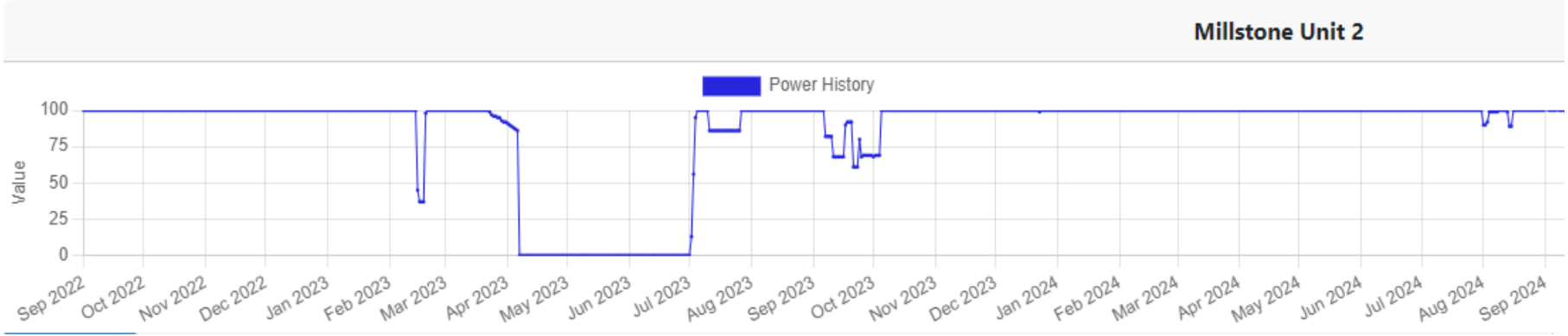
Millstone Unit 2

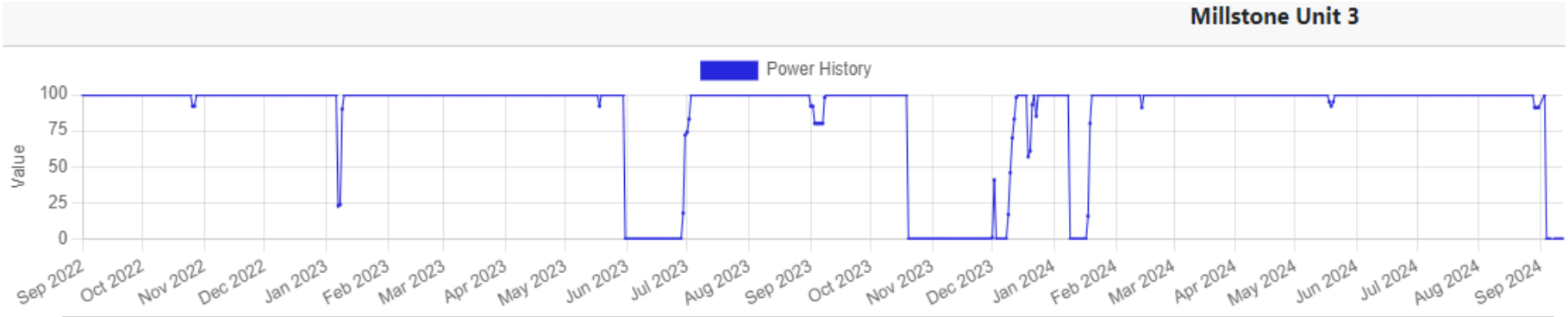
- 446 days online
- 99.5% capacity factor YTD

Millstone Unit 3

- 3 days online
- 87.3% capacity factor YTD

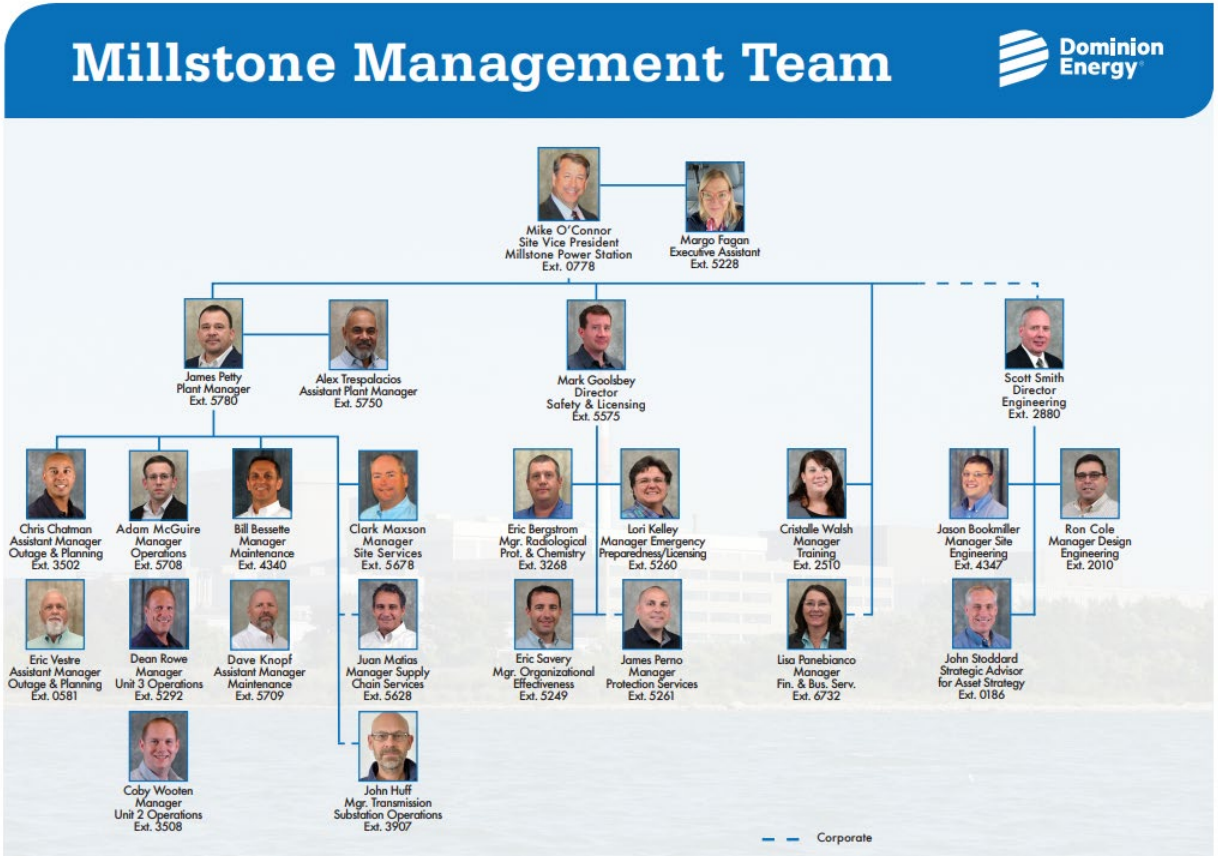
Operations Power History





Dominion Energy

MPS Leadership Team



- **Staffing levels**
- **Operations pipeline**

Dominion Energy

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

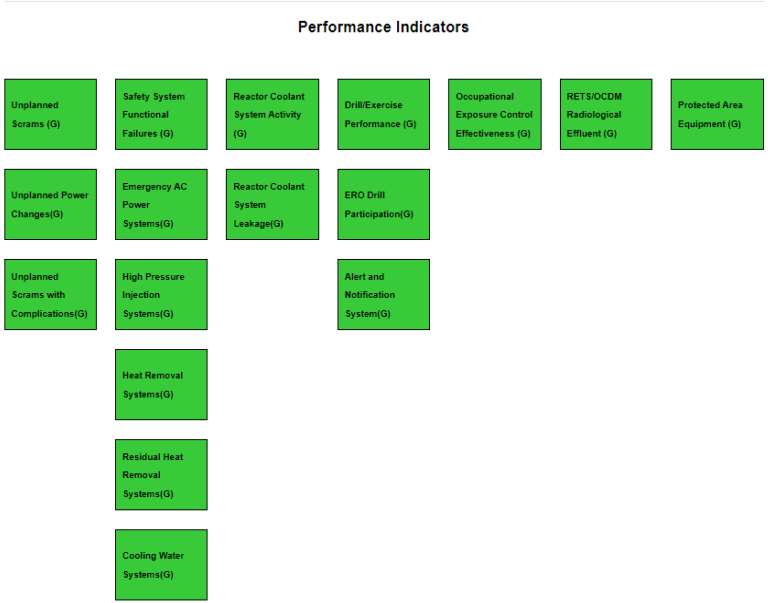
License Amendment Requests

- **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



Unit 2 Second Quarter 2024 NRC Performance Indicators

Unit 3 Second Quarter 2024 NRC Performance Indicators

Dominion Energy

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

Dominion Energy

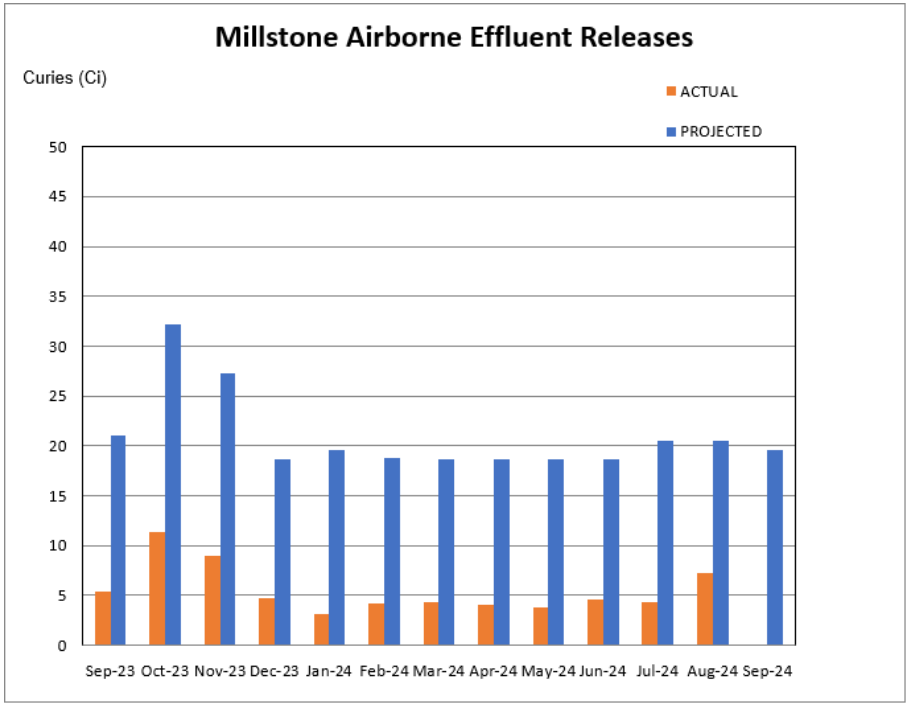
Emergency Plan Event Declarations

- 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

Millstone Gaseous Radioactive Doses – August 2024				
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

Dominion Energy

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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Dominion Energy

NUCLEAR ENERGY ADVISORY COUNCIL
December 10, 2024, 7:00 PM
Waterford Town Hall

MINUTES

Members Present

Alternate Chair Mr. Jeffrey Semancik representing DEEP Commissioner Dykes

Mr. Craig Salonia	Mr. J. McGunnigle
Dr. James Sherrard	Mr. Bill Sheehan
Rep A. Nolan	Mr. A. Jordan

Members Not Present

Rep Kevin Ryan, Chair	Mr. R. Woolrich
Sen. C. Osten	

1. **Call to Order of Meeting**
   NEAC Alternate Chair Semancik called the meeting to order at 7:00 PM.

2. **Approval of Minutes of the September 20, 2024, NEAC meeting.**
   A motion was made to approve the minutes by Mr. Sherrard and seconded by Mr. McGunnigle. Minutes were approved without any corrections or objections. Mr. Sheehan and Rep Nolan abstained.

3. **Public Comment**
   There were no members of the public present.

4. **Council Business:**
   a. New Council member, Rep. Anthony Nolan, introduced himself and provided his background.
   b. Discussion of vacancies and candidates. The Council reviewed current membership and vacancies. Mr. Semancik noted that they received one resume for one volunteer for the Council. He will work with Rep Ryan and Sen Osten to see if Sen Pro Tempore would be willing to nominate.

5. **Discussion of NRC Correspondence Reviewed since past meeting.**
   The list of U. S. Nuclear Regulatory Commission (NRC) Correspondence was reviewed.
   a. Updated Inspection Plan for Millstone Power Station, Units 2 and 3 (Reports 05000336/2024005 and 05000423/2024005) dated August 29, 2024.
   b. Millstone Power Station, Unit 2 – Requalification Program Inspection dated October 7, 2024.
   c. Millstone Power Station, Units 2 and 3 – Security Baseline Inspection Report 05000336/2024402 and 05000423/2024402 dated October 8, 2024.
   d. Millstone Power Station, Unit No. 3 - Review of the Fall 2023 Steam Generator Tube Inspection Report (EPID L-2024-LRO-0023) dated October 21, 2024.

e. Millstone Power Station, Units 2 and 3 – Integrated Inspection Report 05000336/2024003 and 05000423/2024003 and Apparent Violation and Independent Spent Fuel Storage Installation Inspection Report 07200008/2024001 dated November 7, 2024.
f. Millstone Power Station, Unit 1 – SAFSTOR Inspection Report 05000245/2024001 dated November 12, 2024.
g. Millstone Power Station, Unit No. 3 – Issuance of Amendment No. 291 To Support Implementation of Framatome GAIA Fuel (EPID L-2023-LLA-0150) dated November 19, 2024.

6. Discussion of Other material reviewed

NEAC reviewed the following information:

a. Framatome GAIA Fuel Product Sheet available at https://www.framatome.com/solutions-portfolio/portfolio/product/A0528/pwr-fuel-assembly-gaia#:~:text=The%20innovative%20GAIA%20fuel%20design,efficiency%20and%20improved%20fuel%20utilization.
b. Dominion Serial No. 24-154, Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 End of Cycle 22 Steam Generator Tube Inspection Report dated May 20, 2024.
c. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2024-001, "Loss of Safety Function and Condition Prohibited by Technical Specifications for Loss of Secondary Containment Boundary" dated October 14, 2024.
d. Dominion Energy Nuclear Connecticut, Inc. Millstone Power Station Unit 3 Licensee Event Report 2024-002-00, "Door Latch Failure Resulted in Loss of Safety Function for Secondary Containment Boundary" dated November 26, 2024.
e. Dominion Energy Nuclear Connecticut. Inc. Millstone Power Station Unit 2 Licensee Event Report 2024-002-00, "Two Main Steam Safety Valves Failed to Lift within the Acceptance Criteria Resulting in a Condition Prohibited by Technical Specifications" dated November 26, 2024.

7. CY 2024 Annual Report Discussion

The Council discussed their observations of trends in safety and performance of Millstone Station during 2024. Agreed to highlight these in the annual report.

a. Dominion continues to operate Millstone Units 2 and 3 safely.
b. Dominion and the Three Yankees continue to safely store spent nuclear fuel.
c. The NRC continues to provide effective regulatory oversight.
d. While there was some improvement noted in reducing the number of operational events (forced outages, extended outages, and unplanned power changes), these events continue to challenge station performance. In particular, the Council noted outages continue to be extended beyond schedule.
e. The number of required Licensee event reports remains high indicating that issues continue to challenge safety systems rather than being identified and corrected at lower levels.
f. There appear to be a number of repeat issues.
    i. This warrants additional review of Dominion's problem identification and resolution (PI&R).

ii. The repeat nature of several events may be indicative of the loss of organizational knowledge. In particular, the number of changes in key management positions appears high.

g. There are an increased number of issues related to aging infrastructure at the site and the inspection and maintenance of those structures.

h. The multiple security related issues continue to occur. The Council lacks visibility into nature of these issues since publicly available reports contain no details.

8. **Approval of Regular Meeting Schedule for CY 2025**

The Council agreed to the following dates and topics for Council's regular 2025 public meetings.

a. March 27, 2025 – Millstone Annual Performance Meeting (US NRC Presentation)

b. June 12, 2025 – Discussion of Fusion (fusion company) and Regulation of Fusion (CT DEEP)

i. Mr. Semancik to request tour of fusion facility in MA.

c. September 25, 2025 – Millstone Operations Update (Dominion Presentation)

d. December 11, 2025 – Annual Report Writing Meeting

9. Adjournment

Motion was made to adjourn by Mr. Sheehan and seconded by Mr. Sherrard; no objections; unanimous vote in favor; meeting adjourned at 8:12 PM.