



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

February 10, 2020

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

SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 – INTEGRATED INSPECTION
REPORT 05000336/2019004 AND 05000423/2019004

Dear Mr. Stoddard:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Millstone Power Station, Units 2 and 3. On January 23, 2020, the NRC inspectors discussed the results of this inspection with John Daugherty, Site Vice President and other members of your staff. The results of this inspection are documented in the enclosed report.

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

If you contest the violation or the significance or severity of the violation documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at Millstone Power Station, Units 2 and 3.

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

Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 2
Division of Reactor Projects

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

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 – INTEGRATED INSPECTION
REPORT 05000336/2019004 AND 05000423/2019004 DATED FEBRUARY 10,
2020

DISTRIBUTION:

DLew, RA (R1ORAMAIL Resource)
 RLorson, DRA (R1ORAMAIL Resource)
 DCollins, DRP (R1DRPMAIL Resource)
 BWellington, DRP (R1DRPMAIL Resource)
 JYerokun, DRS (R1DRSMAIL Resource)
 PKrohn, DRS (R1DRSMAIL Resource)
 DSchroeder, DRP
 MDraxton, DRP
 JFuller, DRP, SRI
 CHighley, DRP, RI
 EAllen, DRP, RI
 ARancourt, DRP, AA
 OLopez-Santiago, RI OEDO
 RidsNrrPMMillstone Resource
 RidsNrrDorLpl1 Resource
 ROPreports Resource

DOCUMENT NAME: G:\DRP\BRANCH2\A - Millstone\Inspection Reports\2019\2019-
004\Millstone 2019004 Report Final.docx
 ADAMS ACCESSION NUMBER: ML20044C873

<input checked="" type="checkbox"/> SUNSI Review		<input checked="" type="checkbox"/> Non-Sensitive <input type="checkbox"/> Sensitive		<input checked="" type="checkbox"/> Publicly Available <input type="checkbox"/> Non-Publicly Available	
OFFICE	RI/DRP	RI/DRP	RI/DRP		
NAME	JFuller	MDraxton	DSchroeder		
DATE	02/07/2020	02/10/2020	02/10/2020		

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000336 and 05000423

License Numbers: DPR-65 and NPF-49

Report Numbers: 05000336/2019004 and 05000423/2019004

Enterprise Identifier: I-2019-004-0046

Licensee: Dominion Energy Nuclear Connecticut, Inc.

Facility: Millstone Power Station, Units 2 and 3

Location: P.O. Box 128 Waterford, CT 06385

Inspection Dates: October 1, 2019 to December 31, 2019

Inspectors: E. Allen, Resident Inspector
S. Elkhiamy, Reactor Inspector
J. Fuller, Senior Resident Inspector
C. Highley, Resident Inspector
P. Ott, Operations Engineer
T. Setzer, Senior Operations Engineer
D. Silk, Senior Operations Engineer
S. Wilson, Health Physicist

Approved By: Daniel L. Schroeder, Chief
Reactor Projects Branch 2
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Millstone Power Station, Units 2 and 3, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

List of Findings and Violations

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000336/2019004-01 Open/Closed	None (NPP)	71111.12
The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate the applicable design basis for the Unit 2 emergency diesel generator (EDG) operating frequency into the fuel oil consumption calculation to ensure that one EDG could operate for 7 days as required by the current licensing basis. The failure to consider the bounding operating frequency of 61.2 Hz resulted in nonconservative fuel oil volume specified in the Unit 2 technical requirements manual (TRM).			

Additional Tracking Items

None.

PLANT STATUS

Both Units 2 and 3 began the inspection period at rated thermal power (RTP).

On October 17, 2019, Unit 2 commenced an unplanned power reduction to 81 percent RTP to allow for the backwash of all four condenser water boxes when it experienced increased condenser fouling during a storm. Unit 2 returned to full RTP on October 18, 2019.

On October 31, 2019, Unit 3 down powered to 80 percent RTP to allow for the backwash of the condenser water boxes when it experienced increased condenser fouling during a storm. Unit 3 returned to full RTP on November 2, 2019.

On December 17, 2019, Unit 3 was shutdown because the 'A' EDG could not be restored to operable status within the 14-day allowed outage time, requiring a technical specification shutdown. Unit 3 returned to full RTP on December 24, 2019, after repairs were made to the 3A EDG.

On December 27, 2019, plant operators manually tripped the Millstone Unit 2 reactor in response to a trip of 'A' steam generator feed pump (SGFP). After repairs were made to the 'A' SGFP, Unit 2 was returned to full RTP on December 29, 2019.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.02) (2 Samples)

- (1) The inspectors evaluated Unit 2 readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the following systems on November 1, 2019:
 - Reactor water storage tank (RWST) pipe insulation missing.
 - Roll up door left open to turbine building which froze instrumentation.
 - 'B' EDG room damper repair.

- (2) The inspectors evaluated Unit 3 readiness for seasonal extreme weather conditions prior to the onset of seasonal cold temperatures for the following systems on November 1, 2019:
- Control building chill water chiller trip due lower chill water temperature from summer.
 - Domestic water to demineralized water storage tank.
 - Charging pump cubicles area heaters.

External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated readiness to cope with external flooding for the Unit 2 service water pipe tunnel on October 27, 2019

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (2 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 2 'A' and 'B' service water headers during 'B' pump inservice testing on October 16, 2019
- (2) Unit 2 refueling water storage tank flow path to emergency core cooling pumps in below grade pipe trench on October 30 and November 4, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (6 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 2 'A' and 'B' EDG fuel oil day tank rooms (Fire Areas A-30 and A-31) on October 18, 2019
- (2) Unit 2 transformers (Fire Areas XR-2, XR-3, XR-4, XR-5, XR-6, and XR-7) on October 18, 2019
- (3) Unit 2 west battery room (Fire Area A-23) on October 22, 2019
- (4) Unit 3 technical support center (Fire Area TS-1) office area on October 9, 2019
- (5) Unit 3 transformers (Fire Areas XR-3, XR-4, XR-5, XR-6, XR-7, XR-8, XR-9) on October 18, 2019
- (6) Unit 3 east fuel oil vault (Fire Area EG-1) on November 23, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Underground Cables (IP Section 02.02c.) (1 Sample)

The inspectors evaluated cable submergence protection in the:

- (1) Unit 2 refueling water storage tank pipe tunnel both in the yard and through the auxiliary building on October 30 and November 4, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) Unit 2 'C' reactor building component cooling water (RBCCW) heat exchanger

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (2 Samples)

- (1) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered for Unit 3 on November 26, 2019.
- (2) The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam administered for Unit 2 on November 26, 2019.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

- (1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on November 26, 2019.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

Problem Identification and Resolution

The inspectors evaluated the licensee's ability to identify and resolve problems associated with licensed operator performance.

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (2 Samples)

- (1) The inspectors observed and evaluated Unit 2 licensed operator performance in the control room during an unplanned condenser backwash and unplanned power reduction to 82 percent RTP on October 17, 2019.
- (2) The inspectors observed and evaluated Unit 3 licensed operator performance in the control room during an unplanned power reduction to 82 percent RTP during a wind and rain storm on November 1, 2019.

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (2 Samples)

- (1) The inspectors observed and evaluated two Unit 2 licensed operator regualification program simulator examination scenarios. The inspectors observed licensed operators performance, the ability of the licensee to administer the evaluation, the post scenario critique, on November 12, 2019.
- (2) The inspectors observed and evaluated three Unit 3 licensed operator regualification program simulator examination scenarios. The inspectors observed licensed operators performance, the ability of the licensee to administer the evaluation, the post-scenario critique, on October 22, 2019.

71111.12 - Maintenance Effectiveness

Quality Control (IP Section 02.02) (1 Sample)

The inspectors evaluated maintenance and quality control activities associated with the following equipment performance activities:

- (1) Unit 2 quality and seismic classification of the Unit 2 clean fuel oil recovery systems for both EDGs on October 18, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Elevated risk for both units due to planned switchyard work to build new foundations for future bus support structures on October 25 - 26, 2019
- (2) Elevated risk for both units during surveillance testing of the 2A EDG, RPS matrix testing, and switchyard work prior to a thunderstorm on October 31, 2019
- (3) Elevated risk for both units during U3 'A' reserve station transformer (RSST) trouble shooting and repair of the grounding resistors on December 3, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (2 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 2 'A' EDG due to a failed service water flow instrument (CR 1134671) on October 30, 2019
- (2) Immediate operability determination for the Unit 2 pressurizer girth weld, which may not have received the correct post weld heat treatment during original fabrication (CR 1131816)

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Technical justification to change the maximum design basis moisture carryover value and incorporate new steam quality values into the plant calorimetric (Design Change MP2-19-01066)
- (2) Installation of new exhaust system for the Unit 3 'A' EDG (design change number DM3-00-0052-03) on December 3, 2019

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 2 'A' EDG service water flange gasket repair (WO 53203258860) on December 1, 2019
- (2) Unit 3 partial stroke of auxiliary feedwater flow control and containment isolation valves after fuses were pulled as part of troubleshooting for condition report (CR) 1128112 on October 3, 2019

- (3) Unit 3 failed post-maintenance testing of the new exhaust system installed on the 3A EDG under design change number DM3-00-0052-03 on December 3, 2019
- (4) Unit 3 testing of the 3A EDG after implementation of design change MP3-19-01093, spare magnetic pickup unit signal for 'A' EDG tachometer relay on December 11, 2019
- (5) Unit 3 post maintenance testing following the reinstallation of the old exhaust system on the 3A EDG on December 20, 2019
- (6) Unit 3 auxiliary feedwater control valve alternate power installation testing on December 21, 2019 (Work Order 53203249324)

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated forced outage activities associated with the Unit 3 'A' EDG failed post maintenance testing and technical specification required plant shutdown from December 17 to December 23, 2019
- (2) The inspectors evaluated forced outage activities associated with the Unit 2 manual reactor trip due to the 'A' SGFP trip from December 27 to December 29, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Inservice Testing (IP Section 03.01) (3 Samples)

- (1) Unit 2 'B' service water pump IST on October 16, 2019
- (2) Unit 2 'A' high pressure safety injection pump and check valve IST on Oct 29, 2019
- (3) Unit 3 'B' residual heat removal pump IST on October 16, 2019

RADIATION SAFETY

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

Walk Downs and Observations (IP Section 02.01) (1 Sample)

The inspectors walked down the following Unit 3 gaseous and liquid radioactive effluent monitoring and filtered ventilation systems to assess the material condition and verify proper alignment according to plant design:

- (1)
 - 3HVQ-RE49 samples ventilation exhaust from the engineered safety features (ESF) building
 - 3HVR-RE10B samples the ventilation exhaust from the auxiliary building, waste disposal building, fuel building, containment purge, and parts of the service building
 - 3HVR-RE19B samples ventilation exhaust from supplementary leak collection and release system (SLCRS), containment vacuum, and gaseous radwaste
 - 3CMS-RE22 samples containment

Calibration and Testing Program (Process & Effluent Monitors) (IP Section 02.02) (1 Sample)

The inspectors reviewed the following gaseous and liquid effluent monitor instrument calibrations and tests:

- (1)
 - Unit 2 component RM-9049 clean radwaste liquid process radiation monitor calibration dated April 6, 2018
 - Unit 3 component 3HVR-RIY19B SLCRS RM2 calibration records dated June 28, 2017
 - Unit 3 component 3HVR-10, 3HVR-19 and 3HVQ-49 radioactive gaseous and liquid effluent instrument source checks dated September 13, 2019

Sampling and Analysis (IP Section 02.03) (1 Sample)

The inspectors reviewed the following:

- (1) Radioactive Effluent Sampling and Analysis Activities
 - Observed simulated Unit 3 containment gaseous sample
 - No sampling or analysis activities were available to review during this inspection

Effluent Discharges

- Unit 2 waste gas decay tank 'F' gaseous batch release dated April 2, 2019
- Unit 2 containment vent gaseous release dated September 22, 2019
- Unit 2 spent fuel pool evaporation gaseous release dated November 7, 2019
- Unit 3 3SRW-TK1 groundwater underdrains storage tank liquid release dated November 19, 2019

Instrumentation and Equipment (IP Section 02.04) (1 Sample)

The inspectors reviewed the following radioactive effluent discharge system surveillance test results:

- (1)
 - Unit 2 Control room in-leakage verification - continuous sampling method completed October 26, 2018
 - Unit 2 waste gas process radiation monitor RM-9095 functional test completed September 11, 2019
 - Unit 3 Control room filter charcoal analysis - train B (SP 3614F.2) completed May 3, 2019
 - Unit 3 ventilation stack HVR-010A/B operational test completed September 4, 2019
 - Unit 3 supplemental leak collection and release system radiation monitor (3HVR*RIY19A/B) channel operability test completed September 9, 2019

Dose Calculations (IP Section 02.05) (1 Sample)

The inspectors reviewed the following to assess public dose:

- (1) Liquid and Gaseous Discharge Permits
 - Unit 2 waste gas decay tank 'F' gaseous batch release dated April 2, 2019

- Unit 2 containment vent gaseous release dated September 22, 2019
- Unit 2 spent fuel pool evaporation gaseous release dated November 7, 2019
- Unit 3 component 3SRW-TK1 groundwater underdrains storage tank liquid release dated November 19, 2019

Annual Radiological Effluent Release Reports

- Units 1, 2, and 3 2017 Annual Radiological Effluent Release Report
- Units 1, 2, and 3 2018 Annual Radiological Effluent Release Report

Abnormal Gaseous or Liquid Tank Discharges

- Units 1, 2, and 3 Annual Radiological Effluent Release Report for 2018, Section 2.1.4.2, abnormal gaseous release due to a damper alignment problem. The release was monitored and resulting dose was included in the report.

OTHER ACTIVITIES – BASELINE

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in the area of design control that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Evaluation and corrective actions associated with an abnormally higher moisture carryover in the Unit 2 main steam system, which was confirmed by two independent tests in March 2018 and April 2019.

71153 - Followup of Events and Notices of Enforcement Discretion

Personnel Performance (IP Section 03.03) (2 Samples)

- (1) The inspectors evaluated an unplanned manual reactor trip of Millstone Unit 2 after the 'A' SGFP tripped and licensee's performance on December 27, 2019
- (2) The inspectors evaluated an emergent down power of Millstone Unit 3 from 100 percent RTP to 80 percent RTP due to increased condenser fouling during severe weather and evaluated control room operator performance on October 31 and November 1, 2019.

INSPECTION RESULTS

EDG Usable Fuel Calculations Failed to Consider Appropriate EDG Frequency Variations			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000336/2019004-01 Open/Closed	None (NPP)	71111.12
<p>The inspectors identified a finding of very low safety significance and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to correctly translate the applicable design basis for the Unit 2 emergency diesel generator (EDG) operating frequency into the fuel oil consumption calculation to ensure that one EDG could operate for 7 days as required by the current licensing basis. The failure to consider the bounding operating frequency of 61.2 Hz resulted in nonconservative fuel oil volume specified in the Unit 2 technical requirements manual (TRM).</p> <p><u>Description:</u> The standby power supply for Millstone Unit 2 consists of two EDGs. Each EDG is provided with a separate fuel oil supply system, which consists of a diesel oil supply tank and associated piping, valves, and instrumentation controls. Technical specifications require a minimum of 12,000 gallons of fuel oil to be stored in each diesel oil supply tank (T-48A and T-48B). A cross-tie with two locked-closed valves for the diesel oil supply tanks is provided so that a total inventory of 24,000 gallons would be available to either one of the EDGs. In addition, a 25,000 gallon above ground fuel oil storage tank (T-148), which is common for both EDGs, is provided and credited to meet the requirement to maintain seven days of energy storage onsite.</p> <p>Section 8.3.1.2, Design Criteria, of the Millstone Unit 2 updated final safety analysis report (UFSAR) states that the emergency generators and their associated devices are designed, built, and tested in accordance with section 5.2.4 of IEEE standard 308, 1971 edition. Section 5.2.4(6), Energy Storage, of IEEE 308 states that "stored energy at the site shall have the capacity to operate the standby power supply while supplying post-accident power requirements to a unit for the longer of the following: (a) seven days, or (b) time required to replenish the energy from sources away from the generating unit's site following the limiting design basis event."</p> <p>As described in the NRC's safety evaluation report related to amendment number 212 (ML012920023), the NRC approved the licensee to credit the 25,000-gallon non-safety-related fuel oil storage tank to ensure that there will be an adequate and reliable fuel oil inventory for seven days of continuous EDG operation following a design basis event. The NRC's safety evaluation states, in part, that this is acceptable provided that the licensee update its TRM to include a requirement to maintain approximately 17,700 gallons of fuel in this non-safety-related tank.</p> <p>TRM 3.8.1.1.c specifies that while the plant is in Modes 1, 2, 3, and 4, the diesel oil storage tank (T-148) shall contain at least 17,662 total gallons of fuel. The TRM ACTION statement requires that "with the diesel oil storage tank volume less than 17,662 total gallons, restore diesel oil storage tank level within 48 hours or declare one emergency diesel generator nonfunctional."</p> <p>On October 2, 2019, the inspectors identified that the licensee's fuel oil consumption calculation (91-BOP-813-ES) failed to consider that the technical specification upper limit for</p>			

frequency is 61.2 Hz. The existing calculation was based on an operating frequency of 60 Hz. Therefore, the TRM value of 17,662 gallons was not enough to meet the current licensing basis for fuel oil supply. The licensee calculated that 19,628 gallons would be required to be maintained in the above ground storage tank (T-148) to meet the current licensing basis for fuel oil supply considering that the EDGs can operate at 61.2 Hz.

The licensee entered this issue in its corrective action program on October 2, 2019 as CR 1132335. On November 15, 2019, the NRC inspectors identified that the impact on the TRM had not been evaluated; therefore, the licensee initiated CR 1135890 to put administrative controls in place to control the nonconservative TRM. The licensee created a standing order to maintain the diesel oil storage tank (T-148) level above the new level of 19,628 gallons, which also accounts for instrument uncertainty.

The inspectors reviewed tank level over the past 12 months and identified that level was below 19,628 gallons for more than 48 hours, on three occasions, between March and August 2019. Therefore, the Unit 2 TRM Section 3.8.1.1.c was determined to be nonconservative and there was a reasonable doubt of the EDG's ability to meet the current licensing basis on three occasions in the previous 12 months.

The licensee also evaluated the impact for Unit 3 and determined that the calculation Unit 3 contained the same error and need to be revised. The inspectors, however, determined that the impact on the Unit 3 fuel oil consumption calculation was of minor significance, in that it had a minimal effect on the outcome of the calculation. The Unit 3 fuel oil system is different than the Unit 2 system.

Corrective Actions: The licensee entered the issue in its corrective action program and took corrective action to revise both the Unit 2 and Unit 3 calculations for fuel oil consumption using the higher frequency. The licensee also implemented an administrative change to its Unit 2 TRM to change the specified fuel oil volume that must be maintained in the non-safety-related above ground storage tank to ensure that at least one EDG can run for 7-days. Also, the licensee revised a recent maintenance rule functional failure evaluation associated with a small fuel oil leak on the 2A EDG on March 1, 2019. The licensee also reviewed this issue for past operability and reportability and determined that the issue 1) did not represent a condition prohibited by technical specifications because 12,000 gallons was maintained in the safety-related diesel oil supply tanks, and 2) did not result in an unanalyzed condition that significantly degraded plant safety, because the EDG could still perform its safety function for nearly seven days with significant margin to order additional fuel oil and refill the safety-related supply tanks.

Corrective Action References: CR 1130791, CR 1132335, CR 1135021, CA 7703542, CR 1135980, CR 1139947, CR 1139948

Performance Assessment:

Performance Deficiency: The inspectors determined that the failure to correctly translate the applicable design basis for Unit 2 EDG operating frequency into the fuel oil consumption calculation was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability,

reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the failure to correctly translate the applicable design basis for Unit 2 EDG operating frequency into the fuel oil consumption calculation adversely affected the capability and reliability of systems that respond to initiating events to prevent undesirable consequences.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component which maintained its operability.

Cross-Cutting Aspect: Not Present Performance. No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states that measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions.

Contrary to the above, from January 23, 1998, to October 2, 2019, the licensee failed to assure that the design basis for the EDGs was correctly translated into specifications, procedures, and instructions. Specifically, design control measures (calculations) failed to ensure that the bounding operating frequency (61.2 Hz) of the Unit 2 EDGs was used to calculate the EDG fuel oil consumption rate, which resulted in a nonconservative fuel oil volume specified by Unit 2 TRM Section 3.8.1.1.c.

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

Observation: Design Control Trend Review

71152

The inspectors evaluated a sample of CRs generated over the last eighteen months that were flagged by the licensee as design control or configuration control conditions adverse to quality. The inspectors reviewed a sample of these CRs and the licensee's actions to resolve them to determine whether an adverse trend existed in the area of design control. The inspectors determined that the issues were appropriately evaluated by the licensee staff for potential trends and resolved within the scope of the corrective action program. The inspectors met with the licensee's engineering staff to discuss the process for assigning configuration control flags to specific CRs and the engineering department's process for reviewing this data to determine whether additional corrective actions would be warranted to address an adverse trend, as applicable. The inspectors noted that the engineering department had a robust process for tracking design/configuration control CRs and demonstrated a low threshold for taking proactive action to address potential trends. However, the inspectors did note that the licensee's organizational effectiveness department does not require trend codes to be assigned to CRs that document old design issues. Through discussion with the licensee's corrective action program manager, the inspectors noted that the licensee's trending program is focused on identifying and correcting potential

adverse trends that are associated with current licensee performance. The inspectors reviewed a sample of CRs that document old design issues and determined that appropriate corrective actions were taken to correct the condition adverse to quality, but these issue were not part of the licensee's trending program.

EXIT MEETINGS AND DEBRIEFS

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

- On January 23, 2020, the inspectors presented the integrated inspection results to John Daugherty, Site Vice President and other members of the licensee staff.
- On November 21, 2019, the inspectors presented the Radioactive Gaseous and Liquid Effluent Treatment Monitor inspection results to John Daugherty, Site Vice President and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents	113565		
	Drawings	25203-24093	Turbine Building Elevation 14'-6" Barrier Boundaries	Revision 6
	Procedures	C OP 200.13-002	Unit 2 Cold Weather Preparations checklist	Revision 004-00
		C OP 200.13-003	Unit 3 Cold Weather Preparation Checklist	Revision 001-01
	Work Orders	53203233516		
71111.07A	Corrective Action Documents	CR 1133097		
		CR 1134162		
71111.12	Calculations	91-BOP-813-ES	MP2 EDG Operating Time With 24,000 Gallons of Diesel Fuel Oil Available at a Continuous Rated Load of 2750 kw	Revision 4
		97-DES001787-M2	Minimum Level Required in MP2 Diesel Oil Storage Tank T047A to Support Seven Day EDG Run	Revision 4
	Corrective Action Documents Resulting from Inspection	CA 7687619		
		CA 7703542		
		CR 1130791		
		CR 1132335		
		CR 1135021		
		CR 1135980		
		CR 1139947		
		CR 1139948		
	Engineering Changes	MP2-CD-1782	MEPL Determination Distribution List	11/4/1997
	Miscellaneous	CA 7688661	Reportability Evaluation for U2 EDG Clean Fuel Oil System Non-conformance with FSAR	10/9/2019
		DBS-2346B	Design Basis Summary Emergency Diesel Generator Fuel Oil	Revision 0
	Operability Evaluations	CA 7682760		
71111.13	Miscellaneous		Medium risk plan for the U3 A RSST out of service for trouble shoot and repair.	11/30/2019
			High risk plan for TOA 18-06800 (10/21/2019 - 12/31/2019)	10/18/2019

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.18	Calculations	EN 21002	Core Heat Balance	Revision 19
	Engineering Changes	DM3-00-0052-03	Installation of New Spread Exhaust Manifolds for Emergency Diesels, 3EGS*EGA & 3EGS*EGB	04/02/03
		MP3-19-01017	Turbine Driven Auxiliary Feedwater Control Valves Alternate Power and Control and Steam generator Wide Range Level Indication	Revision 1
		MP3-19-01093	Using Spare Magnetic Speed Pickup Unit Signal for A EDG Tachometer Relay	Revision 0
	Engineering Evaluations	DAR-SEE-19-3	Steam Generator Moisture Carryover Test at Millstone Unit 2	Revision 0
		MP-2-19-01066	Technical Justification to change Maximum Design Basis MCO and Incorporate new steam quality values into plant calorimetric	Revision 0
		MP2-SRS-SDD-003	Software Requirements Specification (SRS), and Software Design Description (SDD) for Core Calorimetric	Revision 9
	Procedures	A-MP-FE-001	Millstone Unit 2 Secondary Calorimetric Power Measurement	Revision 8
71111.19	Procedures	C MP 715E	General Practices for Flanges and Threaded Fasteners	Revision 005
		C MP 715E1	Work Control Practices for Threaded Fasteners	Revision 003
	Work Orders	53203249324	Unit 3, Aux feedwater control valve alternate power installation testing	Revision 0
71111.20	Corrective Action Documents	CR1138049		
71111.22	Procedures	SP 2604AO	HPSI pump inservice testing, greater than 1,750 psai, Facility 1	Revision 007
		SP 2604AO-001	'A' HPSI pump and check valve IST	Revision 004
		SP 2612F	'B' service water pump tests	10/16/2019
71124.06	Corrective Action Documents	CR1113313	Unit 2 'D' WGD T Discharged to the Unit 2 Stack	
		CR1136376	Corrective Action Report regarding 3RMS-RE29 local alarm horn was muffled during 2019 U3 ISFSI	11/20/2019
	Miscellaneous	MP-HPO-09054	2019 Radiological Environmental Monitoring Program - Land Use Census Report	
	Radiation Surveys	RP-AA-225, Attachment 5, Material Release Sample Plan	Release plan for 3SRW-TK1 Groundwater Underdrains Storage Tank dated November 19, 2019	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71152	Corrective Action Documents	1095111		
		1102043		