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ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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NRA/SS: R0
Docket No.: 50-423
License No.: NPF-49

**DOMINION ENERGY NUCLEAR CONNECTICUT, INC.**
**MILLSTONE POWER STATION UNIT 3**
**ALLOY 600 AGING MANAGEMENT PROGRAM SUBMITTAL**
**RELATED TO LICENSE RENEWAL COMMITMENT 15**

Commitment Item No. 15 of NUREG-1838, the Safety Evaluation Report (SER) for the renewed operating license for Millstone Power Station Unit 3 (MPS3) requires the submission of a revised aging management program (AMP) description for the management of nickel-based alloy (also referred to as Alloy 600) components to the Nuclear Regulatory Commission (NRC). NUREG-1838 included nickel-based alloy aging management in the Inservice Inspection Program: Systems, Components, and Supports AMP. After considering industry developments and operating experience, Dominion Energy Nuclear Connecticut, Inc. has developed a separate, new AMP to address nickel-based alloy aging management. In accordance with Commitment Item No. 15, the nickel-based alloy AMP inspection program is based on industry guidance and addresses the ten program elements of NUREG-1801. The MPS3 Alloy 600 AMP description is provided in the attachment for NRC review and approval.

If you have any questions or require additional information, please contact Shayan Sinha at (804) 273-4687.

Sincerely,

James E. Holloway
Vice President – Nuclear Engineering & Fleet Support

Commitments made by this letter: None
Attachment: Alloy 600 Aging Management Program Description

cc: Regional Administrator, Region I
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**ATTACHMENT**

# Alloy 600 Aging Management Program Description

**DOMINION ENERGY NUCLEAR CONNECTICUT, INC.**

**MILLSTONE POWER STATION UNIT 3**

## 1.0 BACKGROUND

At the time of submittal of the Millstone Power Station Unit 2 (MP2) and Unit 3 (MP3) License Renewal Application (LRA), NUREG-1801, Generic Aging Lessons Learned (GALL) Report, Rev. 0 was in effect (Reference 6.1). GALL, Rev. 0 is the standard to which the MP2/3 aging management programs (AMPs) were compared for technical adequacy. The results of this review are documented in NUREG-1838 (Reference 6.2) and provided the technical basis for the MP2/3 renewed licenses.

GALL, Rev. 0 contains an aging management program in Section XI.M11, "Nickel-Alloy Nozzles and Penetrations," for nickel-based alloys. In the MP2/3 LRA, Dominion Energy Nuclear Connecticut, Inc. (DENC) did not have a separate nickel-based alloys program. Instead four existing AMPs for managing the effects of aging on nickel-based alloy components were credited. These AMPs were:

1. Inservice Inspection (ISI) Program: Systems, Components & Supports (Reference 6.3)
2. Boric Acid Corrosion (Reference 6.4)
3. Steam Generator Structural Integrity Program (Reference 6.5)
4. Chemistry Control for Primary Systems (Reference 6.6)

The "ISI Program: Systems, Components & Supports" section of the MP2/3 License Renewal Safety Evaluation Report (SER) contains the only detailed discussion of GALL XI.M11. At the time when NUREG-1838 was being finalized, the industry position on the management of Alloy 600 components was still evolving. DENC committed to following industry developments. DENC also committed to submitting an Alloy 600 aging management plan to the Nuclear Regulatory Commission (NRC) for approval by no later than 2 years before MP2 and MP3 enter their respective periods of extended operation (PEOs). For MP3, this is License Renewal Commitment #15.

The MP2/3 LRA stated that the "ISI Program: Systems, Components & Supports" section was consistent with the GALL, with limited exceptions. Because the "ISI Program: Systems, Components & Supports" section addresses five GALL programs, the NRC Staff reviewed it in subsections corresponding to the GALL programs. The discussion in Section 2.0 of this document updates the Alloy 600 subsection and describes its conversion into a separate AMP. Section 3.0 will demonstrate the adequacy of the new program to provide reasonable assurance that the effects of aging on in-scope components will be managed during the PEO.

This AMP is only applicable to MP3.

## 2.0 DISCUSSION

In the MP2/3 LRA, the ISI Program's "Nickel Alloy Nozzles and Penetrations" section is stated as being consistent with GALL XI.M11 AMP, with an exception. This exception concerned Reactor Vessel Top Head Inspections.

At the time NUREG-1838 was being finalized, the industry was still developing a long-term Alloy 600 management plan and reactor vessel (RV) head inspections were being performed in accordance with First Revised Order, EA-03-009 (Reference 6.7). As

discussed in NUREG-1838, DENC would develop a long-term Alloy 600 aging management program based on approved industry requirements. This program would be submitted to the NRC for review and approval two years before MP3 enters the PEO. Commitment #15 in Table 19.6-1 of the MP3 FSAR describes this action.

The Dominion Nuclear Fleet Alloy 600 Management Plan, ER-AA-MAT-11 (Reference 6.8), manages the aging effects of primary water stress corrosion cracking (PWSCC) in Alloy 600 base metal and associated Alloy 82/182 dissimilar metal welds and Alloy 690 base metal and associated Alloy 52/152 dissimilar metal welds. The program requires bare-metal visual, liquid penetrant, eddy-current, and ultrasonic examinations to detect cracking of the in-scope components in accordance with the MP3 ISI Program. This program was developed in accordance with American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI (Reference 6.9), which was codified by the regulatory requirements of 10 CFR 50.55a.

The program implementing procedures define the requirements and scope of the program. The procedures identify the specific base metal and dissimilar metal weld locations included in the program and the susceptibility of each location to PWSCC. The MP3 Alloy 600 locations are listed in Attachment 4 of ER-AA-MAT-11.

The Alloy 600 inspection activities for the pressure boundary base metal and dissimilar metal weld locations are performed in accordance with the MP3 Fourth 10-Year Interval ISI Program (Reference 6.10). This program includes the procedures for performing the inspections, the acceptance criteria for each examination technique, and the requirements for reviewing and dispositioning inspection results. Augmented inspection requirements in the MP3 ISI program specifically address Class I Alloy 600 pressure retaining welds. The requirements are in accordance with current applicable industry requirements including ASME Code Cases N-722-1, N-729-6, and N-770-5 (References 6.11, 6.12, and 6.13) and MRP-335, Revision 3-A (Reference 6.32) subject to the conditions stipulated in 10 CFR 50.55a(g)(6)(ii)(D), (E), and (F).

The program has proactively addressed industry operating experience for PWSCC of the Alloy 600 or 690 base metals and associated dissimilar metal welds. Based on both Millstone-specific experience and industry-wide experience, the following mitigations have been performed:

- Water jet peening of the MP3 reactor vessel head (fall of 2020),
- Weld overlays for the MP3 pressurizer surge, spray, safety, and relief nozzle dissimilar metal welds (fall of 2005 & spring of 2007),
- Water jet peening of the MP3 reactor vessel hot leg dissimilar metal welds (spring of 2019).

Mitigation is also planned for the Steam Generator Head Drain in the spring of 2025.

The Alloy 600 Inspection program has evolved to implement the requirements of applicable NRC publications and industry guidance, including References 6.14, 6.15, and 6.16. The Dominion Nuclear Fleet Alloy 600 Management Plan is described in Program Description ER-AA-MAT-11 and is applicable to all Alloy 600/82/182 components in primary systems at Dominion nuclear plants. Attachment 4 of ER-AA-

MAT-11 provides a comprehensive list of all identified Alloy 600/82/182 pressure boundary and non-pressure boundary locations for MP3. The list will be updated if:

- Alloy 600/82/182 components are replaced with PWSCC resistant components or are mitigated by methods such as Structural Weld Overly (SWO) or Mechanical Stress Improvement Process (MSIP™), etc.
- The estimated susceptibility to cracking or consequences associated with cracking or leaks is significantly changed due to any reason.
- Additional information that could impact the Alloy 600 Management Plan becomes available.

Alloy 600/82/182 components in Attachment 4 of ER-AA-MAT-11 are qualitatively ranked according to:

1. Material defect probability (the probability of the onset of PWSCC), which is strongly dependent upon operational time and temperature.
2. Plant availability impact (the safety and/or economic consequences of the discovery of PWSCC defects/leaks that must be repaired).

The Alloy 600 Management Plan credits inspections performed under existing inspection processes. Inspection requirements for each type of component are listed in the column under the Management Strategies heading. Defects found during inspections shall be dispositioned in accordance with applicable regulatory and code requirements, utilizing the corrective action program.

# 3.0 EVALUATION USING NUREG-1801, GENERIC AGING LESSONS LEARNED (GALL) REPORT ELEMENTS

## 3.1 SCOPE

Attachment 4 of ER-AA-MAT-11 provides a comprehensive list of all identified Alloy 600/82/182 pressure boundary and non-pressure boundary locations for MP3. The MP3 locations are as follows and are discussed in more detail in ETE-CEP-2012-1002 (Reference 6.17) and ETE-CEP-2012-1003 (Reference 6.18):

- Reactor Vessel (RV)
  - Closure head
    - 78 Alloy 600 control rod drive mechanisms head penetrations
    - 1 Alloy 600 vent line nozzle
    - Alloy 82/182 J-groove welds for above
  - Bottom Head
    - 58 Bottom Mounted Instrumentation Nozzles
    - Alloy 82/182 J-groove welds for above
  - 4 Hot Leg Nozzle-to-Safe End Alloy 82/182 Welds mitigated with water jet peening
  - 4 Cold Leg Nozzle-to-Safe End Alloy 82/182 Welds
- Pressurizer
  - 3 Safety Line Nozzle-to-Safe End Welds mitigated with weld overlays
  - 1 Relief Line Nozzle-to-Safe End Weld mitigated with weld overlays
  - 1 Spray Line Nozzle-to-Safe End Weld mitigated with weld overlays
  - 1 Surge Line Nozzle-to-Safe End Weld mitigated with weld overlays
- RV Flange Leakage Monitor Tube (Exempt from Code Case N-722-1)
- RV Core Guide Lugs/Welds
- RV Core Guide Lug Shell Cladding
- Clevis Inserts and Lock Keys
- Steam Generators
  - 4 Channel Head Drain Lines (Alloy 600 Nozzles and 82/182 Welds)
  - Steam Generator Tubes Alloy 600 Thermally Treated (TT)
  - Steam Generator Tubesheet Cladding
  - Steam Generator Tube-Tubesheet Autogenous Weld
  - Steam Generator Partition Divider Plate: Stub Runner/Divider Plate
  - Steam Generator Stub Runner to Divider Plate Weld
  - Steam Generator Divider Plate to Tube Sheet Cladding Weld; Divider Plate to Channel Head Cladding Weld

The Alloy 600 Management Plan Attachment 4, Item 7 is the RV flange leakage monitor tube, which is noted as being exempt from Code Case N-722-1. The RV flange leakage monitor tube exemption is discussed in more detail in ETE-CEP-2012-1002.

## 3.2 PREVENTIVE ACTIONS

The Alloy 600 Management Plan is an inspection program and is designated condition monitoring. The Alloy 600 Management Plan does not include preventive actions.

The Alloy 600 Management plan relies on "ISI Program: Systems, Components & Supports," Boric Acid Corrosion, and Steam Generator Structural Integrity Program AMPs for inspection requirements. Preventive action is provided by the Chemistry Control for Primary Systems AMP.

## 3.3 PARAMETERS MONITORED/INSPECTED

The Alloy 600 Management Plan monitors for indications of cracking due to PWSCC in Alloy 600 components in the MP3 primary systems.

## 3.4 DETECTION OF AGING EFFECTS

The Alloy 600 Management Plan requires visual, surface, and volumetric examinations to detect cracking of in-scope components due to PWSCC. In-scope Alloy 600 components and welds inspection plans are based on the guidance of MRP-126 (Reference 6.14), ASME Section XI Code Cases N-722- 1, N-729-6, and N-770-5, and MRP-335, Revision 3-A (Reference 6.32). These inspections are performed as directed by the ISI Program (Reference 6.9), the Steam Generator Program (Reference 6.19), or the Boric Acid Corrosion Program (References 6.20, 6.21, 6.22).

The "ISI Program: Systems, Components & Supports" AMP requires Alloy 600 inspections according to the regulatory requirements of 10 CFR 50.55a and industry guidance including:

- Visual inspection scope and schedule in accordance with ASME Code Case N-722-1.
- Reactor vessel head inspections for the replacement reactor vessel head per ASME Code Case N-729-6.
- Class 1 piping and vessel nozzle butt weld examinations for mitigated and unmitigated joints in accordance with ASME Code Case N-770-5.

The Steam Generator Structural Integrity Program is based on Nuclear Energy Institute (NEI) 97-06, Steam Generator Program Guidelines and associated Electric Power Research Institute (EPRI) guidelines. The Steam Generator Program administrative procedure, ER-AA-SGP-101 (Reference 6.19) directs the Site Program Owners to document visual examinations as required by the Alloy 600 Management Plan.

The Boric Acid Corrosion Control Program (References 6.20, 6.21, 6.22) requires visual inspections of the reactor coolant system (RCS) and ASME Class 1, 2, and 3 borated water systems. Leaking components and adjacent structures and components that are targets of leakage are evaluated as directed by the program.

## 3.5 MONITORING AND TRENDING

The Alloy 600 Management Plan relies on periodic inspections required by the ISI Program, the Steam Generator Structural Integrity Program, and the Boric Acid Corrosion Control Program, to detect and address degradation of Alloy 600 components due to PWSCC. The Chemistry Control for Primary Systems also monitors and trends results to provide timely indication of abnormal chemistry conditions (Reference 6.23).

## 3.6 ACCEPTANCE CRITERIA

Inspection Criteria are as stated for each of the specific programs:

- ISI Program – Acceptance criteria are in accordance with ASME Section XI requirements.
- Steam Generator Structural Integrity Program – Acceptance criteria are in accordance with the requirements of MP3 Technical Specifications, the guidance of NEI 97-06 Steam Generator Program Guidelines and the EPRI Steam Generator Guidelines (refer to the Steam Generator Structural Integrity Program AMP for a detailed list of industry references).
- Boric Acid Corrosion Control Program – Acceptance criteria meet the requirements of Generic Letter (GL) 88-05 (Reference 6.24) and industry guidelines.
- Chemistry Control for Primary Systems – Action Level criteria with site specific optimization are based on the EPRI Pressurized Water Reactor (PWR) Primary Water Chemistry Guideline (Reference 6.25).

## 3.7 CORRECTIVE ACTIONS

The Alloy 600 Management Plan credits four programs for managing the effect of cracking due to PWSCC. Each program initiates corrective action by entering a condition report into the Central Reporting System (CRS) as follows:

For unresolved relevant indications (URIs) and Steam Generator program visual inspection URIs from the ISI Program, condition reports will be entered into the corrective action system in accordance with ER-AA-NDE-140 (Reference 6.26).

Steam Generator eddy current tube degradation condition reports are submitted in accordance ER-AA-SGP-102 (Reference 6.27).

The Boric Acid Corrosion Control Program completed evaluations are entered into the corrective action system by means of a condition report (Reference 6.22).

The Corrective Actions section of Primary System Chemistry procedure CY-AP-PRI-100 (Reference 6.28) directs submittal of a condition report if parameters are outside the limit values.

If evaluations determine ASME Section XI Class 1, 2, 3 components and their supports require repair or replacement; then such repairs/replacements will be performed according to the Dominion Nuclear Fleet ASME Section XI Repair/Replacement Program (Reference 6.29).

## 3.8 CONFIRMATION PROCESS

Site quality assurance (QA) procedures, review and approval processes, and administrative controls are implemented in accordance with the requirements of 10 CFR 50, Appendix B.

Each of the four credited programs is implemented in accordance with the requirements of the Dominion Nuclear Fleet Facility Quality Assurance Program (Reference 6.30).

## 3.9 ADMINISTRATIVE CONTROLS

Administrative and implementation procedures are reviewed, approved, and maintained as controlled documents in accordance with the procedure control process and the Quality Assurance Program.

## 3.10 OPERATING EXPERIENCE

At the time the MP2/3 renewed licenses were issued in 2005, Alloy 600 aging management was included in the "ISI Program: Systems, Components, & Supports" AMP. It was stated that DENC would follow industry efforts investigating the aging effects applicable to nickel-based alloys (i.e., PWSCC in Alloy base metal and Alloy 82/182 weld metals), identify the appropriate aging management activities, and implement the appropriate recommendations resulting from this guidance.

The following examples of operating experience provide objective evidence that the Alloy 600 Program has been, and will be, effective in managing the aging effects for components within the scope of the program. As a result, there is reasonable assurance that aging effects will not prevent the in-scope components from performing their intended licensing basis functions during the PEO.

1. The MP3 RV head has an Alloy 600 control rod drive mechanism (CRDM) and vent nozzles which were welded with Alloy 82/182. These alloys are considered susceptible to PWSCC. Mitigation by water jet peening was completed in the fall of 2020.
2. The pressurizer spray line was repaired in the fall of 2005 through weld overlay. PWSCC was assumed but not confirmed. The remaining pressurizer nozzle welds were mitigated by weld overlay in the spring of 2007, in accordance with NRC-approved MP3 alternative request IR-2-47 R1.
3. Reactor vessel hot leg dissimilar metal welds were mitigated through water jet peening in the spring of 2019.

Internal and industry operating experience subsequent to the mitigation activities, indicates that the inspection methodologies employed by the Alloy 600 inspections program have been effective in identifying cracking due to PWSCC.

DENC has sought out the best available guidance from industry sponsored projects and research regarding Alloy 600 materials issues. This has been accomplished through active participation in industry associations and groups, at multiple levels. Continued participation in this area is driven by compliance with the requirements of NEI 03-08, "Guideline for the Management of Materials Issues" which is mandated by ER-AA-MAT-10, "Dominion Nuclear Fleet Reactor Coolant System Materials Degradation Management Program" (Reference 6.31).

## 4.0 AGING MANAGEMENT PROGRAM COMPARISON: MILLSTONE PROGRAM AND NUREG-1801 (GALL REPORT)

The Alloy 600 Management Plan discussed in Section 3.0 is consistent with the Nickel-Alloy Nozzles and Penetrations AMP described in Chapter XI of NUREG-1801, Rev. 0 (Reference 6.1) with two enhancements:

1. The program scope has been enhanced according to industry guidelines to include all Alloy 600/82/182 components in the primary system.
2. The inspection requirements have been updated to the requirements of ASME Section XI Code Cases N-722-1, N-729-6, and N-770-5 and MRP-335, Revision 3-A.

## 5.0 SUMMARY

MP3 License Renewal Commitment # 15 (per FSAR Table 19.6-1) states:

"The revised program description will be submitted at least two years prior to the period of extended operation for staff review and approval to determine if the program demonstrates the ability to manage aging in nickel-based components per 10 CFR 54.21(a)(3)."

The due date of Commitment # 15 is November 25, 2023.

The issuance of this submittal completes the revision and update of the MP3 Alloy 600 AMP. The program has been removed from the "ISI Program: Systems, Components, and Supports" AMP and made into a separate AMP. The MP3 Alloy 600 AMP is consistent with the GALL Report, Initial Issue (Rev. 0), with one enhancement as described in Section 4.0.

As demonstrated, the MP3 Alloy 600 AMP ensures that the effects of aging associated with the in-scope components will be adequately managed. As a result, there is reasonable assurance that aging effects will not prevent in-scope components from performing their intended licensing basis functions during the PEO.

## 6.0 REFERENCES

6.1 NUREG-1801, Generic Aging Lessons Learned (GALL) Report, U. S. Nuclear Regulatory Commission, July 2001.

6.2 NUREG-1838, Safety Evaluation Report Related to the License Renewal of the Millstone Power Station Units 2 and 3, Docket Nos. 50-336 and 50-23, U. S. Nuclear Regulatory Commission, October 2005.

6.3 ETE-MP-2013-1040 Rev.1, "Inservice Inspection Program: Systems, Components & Supports; License Renewal Aging Management Program (MP-LR-3701/MP-LR-4701)."

6.4 ETE-MP-2013-1043 Rev. 0, "Boric Acid Corrosion Control; License Renewal Aging Management Program (MP-LR-3705/MP-LR-4705)."

6.5 ETE-MP-2013-1046 Rev. 0, “Steam Generator Structural Integrity Program, License Renewal Aging Management Program (MP-LR-3714/MP-LR4714).”

6.6 ETE-MP-2013-1041 Rev. 0, “Chemistry Control for Primary Systems; License Renewal Aging Management Program (MP-LR-3702/MP-LR-4702).”

6.7 NRC Order EA-03-009, "Issuance of First Revised Order Establishing Interim Inspection Requirements For Reactor Pressure Vessel Heads At Pressurized Water Reactors," US Nuclear Regulatory Commission, 2004.

6.8 ER-AA-MAT-11, Alloy 600 Management Program Plan, Dominion Nuclear Fleet Program Description.

6.9 ER-AA-ISI-100, Dominion Inservice Inspection Program, Dominion Nuclear Fleet Administrative Procedure.

6.10 Millstone Unit 3, “MPS3 TEN-YEAR ISI PLAN for the Fourth Ten-Year Interval February 23, 2019 to February 22, 2029,” Revision 2.

6.11 ASME Boiler and Pressure Vessel Code Case N-722-1, “Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182,” January 26, 2009.

6.12 ASME Boiler and Pressure Vessel Code Case N-729-6, “Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds,” March 3, 2016.

6.13 ASME Boiler and Pressure Vessel Code Case N-770-5, “Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld filler Metal With or Without Application of Listed Mitigation Activities,” November 7, 2016.

6.14 EPRI Report 1009561, "Materials Reliability Program: Generic Guidance for Alloy 600 Management (MRP-126)," Electric Power Research Institute, Palo Alto, CA, November 2004.

6.15 WCAP-14572, Westinghouse Owners Group Application of Risk-Informed Methods to Piping Inservice Inspection Topical Report, Westinghouse Owners Group Topical Report, Revision 1-NP-A, February 1999.

6.16 NRC Regulatory Information Summary 2008-25, “Regulatory Approach for Primary Water Stress Corrosion Cracking of Dissimilar Metal Butt Welds in Pressurized Water Reactor Primary Coolant System Piping,” U.S. Nuclear Regulatory Commission, October 22, 2008.

6.17 ETE-CEP-2012-1002, Identification and Evaluation of RCS Alloy 600 Locations – Pressure Boundary Locations & Reactor Internals, Dominion Engineering Technical Evaluation, December 2021.

6.18 ETE-CEP-2012-1003, Identification and Evaluation of RCS Alloy 600 Locations – Steam Generator Locations, Dominion Engineering Technical Evaluation, December 2021.

6.19 ER-AA-SGP-101, Steam Generator Program, Dominion Nuclear Fleet Administrative Procedure.

6.20 ER-AP-BAC-10, Boric Acid Corrosion Control Program.

6.21 ER-AP-BAC-101, Boric Acid Corrosion Control Program (BACCP) Inspections, Dominion Nuclear Administrative Procedure.

6.22 ER-AP-BAC-102, Boric Acid Corrosion Control Program (BACCP) Evaluations, Dominion Nuclear Fleet Administrative Procedure.

6.23 CP 2802A, Primary Chemistry Control, Millstone Power Station Chemistry Procedure, Dominion Nuclear Connecticut.

6.24 Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," U.S. Nuclear Regulatory Commission, March 17, 1988.

6.25 EPRI 1014986, PWR Primary Water Chemistry Guidelines, Revision 7, Volumes 1 and 2, Electric Power Research Institute, Palo Alto, CA, April 2014.

6.26 ER-AA-NDE-140, Processing of Dominion NDE Data, Nuclear Fleet Nondestructive Examination Procedure.

6.27 ER-AA-SGP-102, Steam Generator Degradation Assessment, Dominion Nuclear Fleet Administrative Procedure.

6.28 CY-AP-PRI-100, Primary System Chemistry, Dominion Nuclear Fleet Administrative Procedure.

6.29 ER-AA-RRM-100, ASME Section XI Repair/Replacement Program Fleet Implementation Requirements, Dominion Nuclear Fleet Administrative Procedure.

6.30 Topical Report DOM-QA-1 Dominion Nuclear Facility Quality Assurance Program Description.

6.31 ER-AA-MAT-10, Reactor Coolant System Materials Degradation Management Program, Dominion Nuclear Fleet Program Description.

6.32 EPRI Report 3002009241, “Materials Reliability Program: Topical Report for Primary Water Stress Corrosion Cracking Mitigation by Surface Stress Improvement (MRP-335 Revision 3-A),” Electric Power Research Institute, Palo Alto, CA, November 2016.