

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

October 1, 2019

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Serial No.: 19-325
NRA/SS: R2
Docket Nos.: 50-280/281
License Nos.: DPR-32/37

VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION ENERGY VIRGINIA)
SURRY POWER STATION UNITS 1 AND 2
RESPONSE TO MARCH 12, 2012 REQUEST FOR INFORMATION ENCLOSURE 2,
RECOMMENDATION 2.1, FLOODING FOCUSED EVALUATION / INTEGRATED
ASSESSMENT SUBMITTAL

By letter dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340), the U.S. Nuclear Regulatory Commission (NRC) issued a request for information to all power reactor licensees and holders of construction permits in active or deferred status, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.54(f), "Conditions of Licenses" (hereafter referred to as the "50.54(f) letter"). The request was issued in connection with implementing lessons learned from the 2011 accident at the Fukushima Dai-ichi nuclear power plant, as documented in the NRC's Near Term Task Force (NTTF) report (ADAMS Accession No. ML111861807). Enclosure 2, Recommendation 2.1 of the 50.54(f) letter requires licensees to perform a flood hazard reevaluation for their sites using present-day methods and regulatory guidance used by the NRC staff when reviewing applications for early site permits and combined licenses (ADAMS Accession No. ML12056A046). This information was provided to the NRC for Surry Power Station (SPS) in a flood hazard reevaluation report (FHRR) on March 12, 2015 (Serial No. 15-107/ADAMS Accession No. ML15078A291).

In September 2015, subsequent to the FHRR submittal, the NRC issued a letter to the industry indicating that new guidance was being prepared to provide for a graded approach to flooding reevaluations, allowing for more focused evaluations of local intense precipitation and available physical margin (APM) in lieu of an integrated assessment. The guidance, prepared by Nuclear Energy Institute as NEI 16-05, Revision 1 (ADAMS Accession No. ML16165A178), was endorsed by the NRC in JLD-ISG-2016-01 (ADAMS Accession No. ML16162A301). The guidance directs that each flood-causing mechanism not bounded by the design basis flood should follow one of the following five assessment paths:

- Path 1: Demonstrate Flood Mechanism is Bounded Through Improved Realism
- Path 2: Demonstrate Effective Flood Protection
- Path 3: Demonstrate a Feasible Response to Local Intense Precipitation (LIP)
- Path 4: Demonstrate Effective Mitigation
- Path 5: Scenario Based Approach

Non-bounded flood-causing mechanisms in Paths 1, 2, or 3 would only require a Focused

Evaluation (FE) to complete the actions related to external flooding required by the March 12, 2012 10 CFR 50.54(f) letter. Flood-causing mechanisms in Paths 4 or 5 require an Integrated Assessment (IA).

The reevaluated flood hazard, summarized by the NRC in the "Interim Staff Response to Reevaluated Flood Hazards" letter dated February 29, 2016 (ADAMS Accession No. ML16041A341), was utilized as input to this Flooding FE/IA. In all, eight flooding mechanisms were evaluated to determine if any challenged the Current Licensing Basis (CLB); three mechanisms were found to exceed the CLB at Surry Power Station. The mechanisms are listed below:

1. Local Intense Precipitation (LIP)
2. Failure of Dams and Onsite Water Control/Storage Structures (Intake Canal Failure)
3. Storm Surge (Deterministic Probable Maximum Storm Surge)

These mechanisms were evaluated for the need to improve realism as described in Section 6.1 of NEI 16-05, and in accordance with NEI 16-05, Appendix A, Reduction of Conservatism. The Flooding FE evaluated the impact of the reevaluated LIP and intake canal failure flood-causing mechanisms on the site strategy for effective flood protection in accordance with Paths 3 and 2, respectively, of NEI 16-05, Revision 1 guidance. The Flooding FE concludes that the strategies for maintaining key safety functions (KSFs) during the reevaluated LIP and intake canal failure events provide effective flood protection through the demonstration of APM, reliable flood protection features, and feasible overall site response.

The Flooding IA evaluated the impact of the reevaluated deterministic probable maximum storm surge flood hazard on the site strategy for effective flood protection and/or mitigation in accordance with NEI 16-05, Revision 1 Path 4 guidance. The Flooding Integrated Assessment reaffirms that Surry Power Station has appropriately addressed plant vulnerabilities to external flooding and will not require additional safety enhancements since mitigating strategies (FLEX) remain feasible for the reevaluated flood hazard.

Dominion Energy Virginia's responses to the NRC March 2012 Near-Term Task Force (NTTF) 10 CFR 50.54(f) request for information are captured in a Flooding Focused Evaluation / Integrated Assessment in alignment with the guidance provided in NEI 16-05. The Flooding Focused Evaluation / Integrated Assessment documents the Surry Power Station response to the unbounded reevaluated flood hazard mechanisms. It should be noted that this Flooding Focused Evaluation / Integrated Assessment Summary submittal supersedes the previous Flooding Focused Evaluation Summary for Surry Power Station Units 1 and 2, which was submitted on June 29, 2017 (Serial No. 17-276).

Attachment 1 provides the Surry Power Station Units 1 and 2 Flooding Focused Evaluation / Integrated Assessment Summary. Attachment 2 provides a list of commitments related to the SPS Flooding Focused Evaluation / Integrated Assessment.

The Surry Mitigating Strategies Assessment (MSA), which was submitted on January 27, 2017 (Serial No. 16-480/ADAMS Accession No. ML17033A162), listed "Modified FLEX" strategies in Section 2.3.2. It should be noted that the proposed "Modified FLEX" strategies were based on the assumption of an extended loss of ac power (ELAP) occurring coincident with the LIP flood hazard. However, assumption of an ELAP is only required if the LIP flood hazard is the cause of the ELAP. Since the SPS LIP flood hazard would not cause an ELAP, the ELAP does not have to be assumed. This position is consistent with NEI 12-06, Revision 2, "Flexible Coping Strategies (FLEX) Implementation Guide," Appendix G, Section 4.3, "Assessment for Alternate Mitigating Strategies," which states:

"The [Alternate Mitigating Strategies] AMS would be based on a sequence of events determined from using the flood as the initiating event. The AMS would not assume an ELAP and [loss of ultimate heat sink] LUHS unless or until such time as the flood event caused such consequences."

Therefore the "Modified FLEX" strategies in Section 2.3.2 of the Surry MSA are no longer required, and the items listed in Attachment 2 of this letter are considered to be the definitive list of commitments for Surry Power Station Units 1 and 2, with respect to flooding mitigating strategies.

If you have any questions regarding this information, please contact Shayan Sinha at (804) 273-4687.

Sincerely,



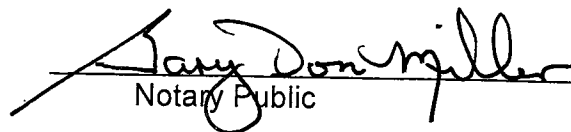
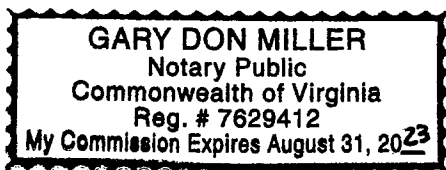
Mark D. Sartain
Vice President – Nuclear Engineering & Fleet Support

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Mark D Sartain, who is Vice President – Nuclear Engineering & Fleet Support of Virginia Electric and Power Company. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 1st day of October, 2019.

My Commission Expires: August 31, 2023


Notary Public

Commitments made in this letter: See Attachment 2

Attachments:

1. Flooding Focused Evaluation / Integrated Assessment Summary
2. List of Commitments

cc: U.S. Nuclear Regulatory Commission, Region II
Regional Administrator
Marquis One Tower
245 Peachtree Center Ave. NE
Suite 1200
Atlanta, Georgia 30303-1257

J. F. Uribe
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop O-12H4
11555 Rockville Pike
Rockville, MD 20852-2738

V. Thomas
Project Manager
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 04 F-12
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Surry Power Station