

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.



Commitments made in this letter: See Attachment 2

Attachments:

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

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