

VIRGINIA ELECTRIC AND POWER COMPANY
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U.S. Nuclear Regulatory Commission
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VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION ENERGY VIRGINIA)
NORTH ANNA POWER STATION UNITS 1 AND 2
FLOOD HAZARD MITIGATING STRATEGIES ASSESSMENT (MSA) REPORT
DISPOSITION OF "MODIFIED FLEX" STRATEGIES

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 to the 50.54(f) letter requested that licensees reevaluate flood hazards 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).

Concurrent with the reevaluation of flood hazards, licensees were required to develop and implement mitigating strategies in accordance with NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design Basis External Events" (ADAMS Accession No. ML12054A735). To proceed with implementation of Order EA-12-049, licensees used the current licensing basis flood hazard or the most recent flood hazard information, which may not be based on present-day methodologies and guidance, in the development of their mitigating strategies.

By letter dated December 16, 2016 (ADAMS Accession No. ML16357A405), Virginia Electric and Power Company submitted the flood hazard mitigating strategies assessment (MSA) for North Anna Power Station (NAPS) Units 1 and 2. Section 2.3.2 of the MSA identified "Modified" FLEX mitigating strategies to address the site-specific reevaluated Local Intense Precipitation (LIP) flood hazard as follows:

1. "Modified FLEX" strategy for locally realigning and controlling Auxiliary Feedwater (AFW) flow during the site-specific reevaluated LIP flood hazard.

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2. "Modified FLEX" strategy to enhance the station's ability to cope with an [Extended Loss of AC Power] ELAP occurring in Modes 5 and 6 during the site-specific reevaluated LIP flood hazard.
3. "Modified FLEX" strategy to enhance [Emergency Switchgear Room] ESGR flood protection during the site specific reevaluated LIP flood hazard.

The proposed "Modified FLEX" strategies above were based on the assumption of an 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 NAPS 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 LUHS unless or until such time as the flood event caused such consequences."

The NRC endorsed NEI 12-06, Revision 2, in Revision 1 to JLD-ISG-2012-01, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" [ADAMS Accession Number ML15357A163].

Therefore, since an ELAP occurring during a LIP flood hazard is no longer assumed, the "Modified FLEX" strategies discussed in our December 16, 2016 MSA letter are no longer considered necessary for implementation. Consequently, the "Modified FLEX" strategies have been dispositioned as follows:

1. The NAPS abnormal weather procedure has been revised to direct installation of temporary AFW Pump House (PH) flood protection for the Unit 1 AFW PH doors prior to the LIP to preclude site-specific reevaluated LIP flood hazard flood water from entering the Unit 1 AFW PH. (Note: The site-specific reevaluated LIP flood hazard was assessed and determined to have insignificant impact on plant equipment in the Unit 2 AFW PH. Since local operator actions in the AFW PH were only required to address an ELAP during the LIP flood hazard, which is no longer assumed, no additional actions are necessary to address this item).
2. This item was specific to an ELAP occurring in Modes 5 and 6 during the LIP flood hazard; consequently, a "Modified FLEX" strategy is no longer required since an ELAP is no longer assumed to occur during the LIP flood hazard.
3. This item is being addressed by the flood barrier modifications being implemented as a result of the NAPS Focused Evaluation.

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