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Cc: [Danna, James](#)
Subject: Request for Additional Information Related to Seabrook License Amendment Request Regarding Degraded Voltage Time Delay Setpoint (L-2020-LLA-0012)
Date: Tuesday, July 21, 2020 3:51:00 PM
Attachments: [L-2020-LLA-0012 FICB RAIs.pdf](#)

Ken/Christine,

By letter dated January 24, 2020, as supplemented by letter dated May 20, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML20027A239 and ML20142A204, respectively), NextEra Energy Seabrook, LLC (NextEra, the licensee) submitted a license amendment request (LAR) to revise the degraded voltage time delay setpoint for Seabrook Station, Unit No. 1. Specifically, the LAR would decrease the trip setpoint and allowable value for the 4.16 kV Bus 5 and Bus 6 degraded voltage time delays listed in Technical Specifications (TS) Table 3.3-4. In reviewing the submitted information, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review.

On July 8, 2020, the NRC staff sent NextEra the DRAFT RAIs to ensure that the questions are understandable, the regulatory basis is clear, there is no proprietary information contained in the RAI, and to determine if the information was previously docketed. On July 21, 2020, the NRC and NextEra held a clarifying call. During the call, NextEra requested a response date of 30 days from the date of this email. The NRC staff informed Exelon that this timeframe is acceptable. The attached is the final version of the RAIs. These RAIs will be put in ADAMS as a publicly available document.

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REQUEST FOR ADDITIONAL INFORMATION REGARDING

DEGRADED VOLTAGE TIME DELAY SETPOINT

NEXTERA ENERGY SEABROOK, LLC

SEABROOK STATION, UNIT NO. 1

DOCKET NO. 50-443

By letter dated January 24, 2020, as supplemented by letter dated May 20, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML20027A239 and ML20142A204, respectively), NextEra Energy Seabrook, LLC (NextEra, the licensee) submitted a license amendment request (LAR) to revise the degraded voltage time delay setpoint for Seabrook Station, Unit No. 1. Specifically, this amendment will modify the trip setpoint and allowable values (AVs) found in Technical Specifications (TS) 3.3-4, "Engineered Safety Actuation System Instrumentation Trip Setpoints" for the degraded voltage time delay relays for Function Unit 9.b "4.16 kV Bus E5 and E6 Degraded Voltage":

| Function 9.b | Trip Setpoint | Allowable Value |
|--------------|--|---|
| Existing | ≥ 3933 volts with a ≤10 second time delay | ≥ 3902 volts with a ≤10.96 second time delay |
| Proposed | ≥ 3933 volts with a ≤ 6 second time delay | ≥ 3902 volts with a ≤ 6.72 second time delay |

Background

In its letter dated January 24, 2020, the licensee proposed to revise the trip setpoint and allowable value of the Function 9.b in Table 3.3-4. In this letter, Pages 4 and 5, the licensee stated in parts:

"The 62D time delay relay setpoint shall be selected to ensure that (a) the minimum time delay is greater than the block start 4kV motor loads maximum start times (4.5 seconds), (b) the maximum time delay is less than the 7 seconds minimum trip time criteria used for sizing of the block start MOV TOL heaters.

Based on the calculated maximum time that the buses would be subjected to a degraded voltage condition coincident with a safety injection signal of 6.787 seconds (6.72 seconds allowable value + 0.067 second undervoltage relay time delay), the block start MOVs will not trip in the event of a SI during a degraded voltage condition.

The design calculation has been revised to acknowledge the revised 62D time delay relay setpoint of 6.0 seconds but retains the analysis of the previous 10 second time delay relay setpoint as conservative."

However, the licensee has not provided sufficient documentation basis to explain the changes. The NRC staff has determined that additional information is needed to complete its review of the proposed amendment.

Regulatory Basis

Title 10 of the Code of Federal Regulations (10 CFR) Part 50 "Domestic Licensing of Production and Utilization Facilities," Section 50.36, "Technical specifications," paragraph (a)(1), states in part, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications (TSs) in accordance with the requirements of this section."

10 CFR Part 50.36(c)(1)(ii)(A) of 10 CFR, states that limiting safety system settings (LSSS) are settings for automatic protective devices related to those variables having significant safety functions. This clause requires, in part, that where a LSSS is specified for a variable on which a safety limit has been placed, the setting be chosen so that automatic protective action will correct the abnormal situation before a safety limit is exceeded.

10 CFR 50.36(c)(3) states that, "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

10 CFR 50 Appendix A, General Design Criteria (GDC) 13, "Instrumentation and control," states in part, "Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges."

Regulatory Guide (RG) 1.105, Revision 3, "Setpoints for Safety-Related Instrumentation," dated December 1999 (ADAMS Accession No. ML993560062), describes a method acceptable to the NRC staff for complying with the NRC's regulations for ensuring that setpoints for safety-related instrumentation are initially within and remain within the technical specification limits.

RIS 2011-12, Revision 1, clarifies voltage studies necessary for DVR (second level undervoltage protection) setting bases and Transmission Network/Offsite/Station electric power system design bases for meeting the regulatory requirements specified in General Design Criterion 17, "Electric Power Systems," to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 Appendix A. The RIS states, in part:

"Licensee voltage calculations should provide the basis for their DVR settings ensuring safety-related equipment is supplied with adequate voltage (dependent on equipment manufacturers design requirements), based on bounding conditions for the most limiting safety-related load (in terms of voltage) in the plant."

RIS 2006-17, "NRC Staff Position on the Requirements of 10 CFR 50.36, 'Technical Specifications,' Regarding Limiting Safety System Settings, During Periodic Testing and Calibration of Instrument Channels," dated August 24, 2006 (ADAMS Accession No. ML051810077), discusses issues that could occur during testing of limiting safety system settings (LSSSs) and which, therefore, may have an adverse effect on equipment operability. The RIS also represents an approach that is acceptable to the NRC staff for addressing As-Found and As-Left Tolerance Limits for use in licensing actions.

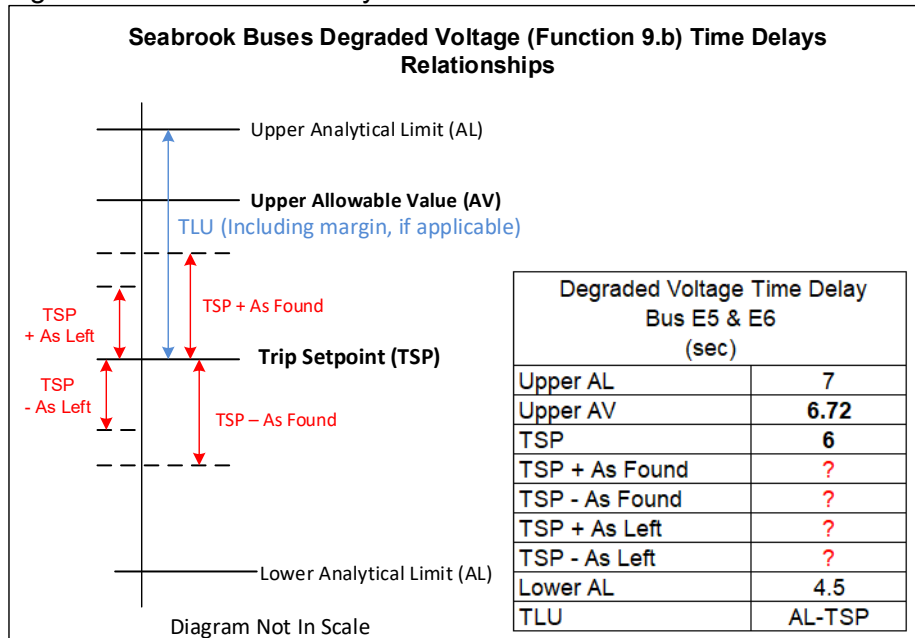
RAI # 1

Provide a summary of the relevant calculation information that determined the new time delay setpoint for the 4.16 kV Bus 5 and 6 degraded voltage time delay relays, reducing the delay from a nominal 10 seconds (10.96 seconds allowable value) to 6 seconds (6.72 seconds allowable value). The summary should include the relay setting design basis, including the trip setpoint, the setting and tolerances to be used during calibration and required surveillances, the uncertainties associated with these settings, the expected relay drift between surveillances, measurement and test equipment uncertainties, and the as-found and as-left tolerance acceptance values to be applied during initial calibration and technical specification-related surveillances. Alternatively, the full setpoint uncertainty calculation may be provided for convenience but is not necessary.

This information is needed to enable the staff to understand the relationships among the trip setpoint, the as-left and as-found surveillance test acceptance criteria as further depicted below, in order to verify that the regulatory requirements and guidance above are being met regarding the selection and periodic surveillance of the setpoint and allowable time delay of Function 9.b. (Refer to Figure 1 below).

In the summary of the calculation, please indicate how the as-left and as-found surveillance test acceptance criteria were determined. This information is needed by the staff to evaluate whether key criteria within RIS 2006-17 are being met.

Figure 1 - Staff Confirmatory Review



RAI # 2

- a) Provide the full 62D time delay relay catalog number and vendor performance specification datasheet, which provides the performance specification including accuracy, drift, associated drift interval, and the setting range of time delays of this device.
- b) If any of these values are not provided in the manufacturer's datasheet, but are treated as assumptions within the calculation, provide a justification for the values used in these assumptions.

This information is needed to enable the staff to evaluate and understand how the vendor performance specifications were used to establish the as-found, as-left, and Allowable Value so as to address the performance monitoring criteria within RIS 2006-17.