

From: [Valentin-Olmeda, Milton](#)
To: [Valentin-Olmeda, Milton](#)
Subject: RE: North Anna SPRA (Fukushima 50.54f) Audit Follow-Up Clarification Question on Plant Modifications
Date: Wednesday, January 02, 2019 1:16:02 PM

From: Valentin-Olmeda, Milton
Sent: Thursday, November 29, 2018 3:07 PM
To: 'Diane Aitken' <diane.aitken@dominionenergy.com>
Cc: St. Peters, Courtney <Courtney.St.Peters@nrc.gov>; Reisi Fard, Mehdi <Mehdi.Reisifard@nrc.gov>; Sebrosky, Joseph <Joseph.Sebrosky@nrc.gov>; Titus, Brett <Brett.Titus@nrc.gov>
Subject: North Anna SPRA (Fukushima 50.54f) Audit Follow-Up Clarification Question on Plant Modifications

Diane,

As discussed in our 11/29/18 conference call, part of the ongoing audit of the seismic probabilistic risk assessment (PRA) submittal (ADAMS Accession No. ML18093A445), here is a follow-up clarification question associated to plant-response portion of the submittal.

Follow-up Question 4.01 (Topic #16)

The licensee provided an updated response via the Dominion ePortal to the plant-response model audit question 4 (Topic #16) sent on October 9, 2018 (ADAMS Accession No. ML18282A150). This updated response identifies plant modifications to achieve seismic risk improvements. The update also addresses FLEX diesel generator (DG) failure rates and a surrogate Human Failure Event (HFE) for transport of FLEX equipment. The response provided a sensitivity study that increased the FLEX DG failure rates by a factor of 10 and the human error probability of the HFE in question by a factor of five.

In light of the [updated response](#), please address the following items:

- a) Update the cost benefit analysis by using a mean annual offsite dose impact of 25 rem/year and by including the on-site exposure and onsite economic cost.
- b) For the base case (no sensitivities considered), include the LERF decrease associated with the elimination of the following three pairs of failures: SEIS-RS-P-1AB-RLY with SEIS-EE-BKR-HJ8-RLY, SEIS-RS-P-1AB-RLY with SEIS-RS-P-3AB-RLY, and SEIS-RS-P-1AB-RLY with SEIS-RS-P-2AB-RLYSS.
- c) For the sensitivity case values (FLEX DG and HEF), include the CDF decrease associated with the elimination of the following two pairs of failures: SEIS-EE-BKR-HJ8-RLY with SEIS-SW-P-1AB-RLY and SEIS-RS-P-1AB-RLY with SEIS-CH-P-1ABC-RLY.

- d) If eliminating the risk associated with pairs of seismically induced relays chatter events does not decrease the seismic CDF by 1E-05 per year or the LERF by 1E-06 per year in the updated analysis, then include combinations of three or four relay chatter failure events whose elimination do decrease the seismic CDF by 1E-05 per year or the LERF by 1E-06 per year.
- e) Include the bases for the cost estimates. In particular, include the cost bases for installing seismically qualified relays to replace relays that contribute significantly to seismic risk. Also, provide the cost basis for implementing procedural changes that would provide guidance to operators to reset relays following a seismic event, if it can be shown that this operation action can reduce the seismic CDF by 1E-05 per year or seismic LERF by 1E-06 per year.

For each item, please provide all qualitative arguments that may support your conclusions, and the basis for values used or assumptions made in your analysis.

We look forward to hearing back from you regarding the date for when to expect a response to this follow-up audit question. Prompt and complete responses will prevent delays in our review schedule.

Please give me a call if you have any questions regarding this email.

Respectfully,

Milton Valentín, PM
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