From:	Tam, Peter
Sent:	Tuesday, June 02, 2015 4:40 PM
To:	thomas.hardingjr@exeloncorp.com
Cc:	Goel, Vijay; Mathew, Roy; Dudek, Michael; Mozafari, Brenda; Helton, Shana; Zimmerman, Jacob
Subject:	Request conference call to discuss Ginna's 4/24/15 supplement for the proposed NFPA-805 amendment (TAC MF1393)

Tom:

As you and I discussed by phone this afternoon, following please find talking points to support the subject proposed conference call. We plan to use the talking points to guide us in the conference call to understand better Ginna's 4/24/15 supplemental information (ADAMS Accession No. ML15119A055), and also to provide you and your staff, perhaps retroactively, clarification of the RAI that led to the 4/24/15 supplement.

Please contact me to pick a date and time for the conference call. In that conference call, we will discuss disposition of the issues depicted by these talking points.

This email will be immediately docketed into NRC's Official Agency Record system, ADAMS, but we will withhold public release for 10 days pending your confirmation that there is no proprietary or security-related information in this email.

1. The staff found some discrepancies in the submittal provided by the licensee on April 24, 2015. Please provide clarifications to resolve the following:

   a) In Attachment 1, Page 2 (response to NRC Question 2), the licensee states: "The 2400 Amp pickup setting is not too low even though the estimate of the short time current has increased to 6,609 Amp RMS (Reference Rev. 8 of DA-EE-93-104-07, Page 243 [Attachment 2])."

      The staff could not find the "6,609 Amp" in Attachment 2, Page 243.

   b) In Attachment 1, Page 2 (response to NRC Question 2), the licensee states: "At 6,609 Amps RMS, the overcurrent portion of the COV-8 relay takes about 1 second to time out (Reference Page 245 of DA-EE-93-104-07, Rev. 8 [Attachment 2])."

      The staff could not find the "overcurrent portion of the COV-8 relay" in Attachment 2, Page 245.

   c) In Attachment 1, Page 2 (response to NRC Question 2): The licensee referred to Calculation DA-EE-92-111-01, Rev. 2 [Attachment 3]. The licensee stated that the maximum reset of the LOV [loss of voltage] relay is assumed to be 79.42% of 480V..."

      The staff finds the 79.42% is shown as the "*maximum dropout* of LOV" on Page 38 of Calculation DA-EE-92-104-07, Rev. 8 [Attachment 2], and as "*maximum analytical limit* of 381.2 voltage (79.42% of 480V)" on Page 31 of DA-EE-92-111-01, Rev. 2 [Attachment 3].

d) In Attachment 1, Page 3 (response to Question 2a): The licensee stated that the existing overcurrent setting of the COV-8 (2400 Amps) will provide thermal protection for the EDG (Reference Page 245 of DA-EE-93-104-07 Rev. 8 [Attachment 2]) during faulted conditions.

The staff could not find the "thermal protection for the EDG" in Reference Page 245 of DA-EE-93-104-07 [Attachment 2].

2. In response to NRC Question 2, the licensee stated: "Calculation DA-EE-92-111-01, Rev.2, "Diesel Generator A Dynamic Loading Analysis" provides insight on the relationship between EDG voltage and current. Page 8 of that calculation summarizes the LOV pickup duration for the various simulations. Since the maximum reset of the LOV relay is assumed to be 79.42% of 480V, page 8 also effectively summarizes the maximum amount of time that the voltage element of the COV-8 relay will be picked up (80%)."

The licensee also stated: "The above-mentioned simulation (DGA_FU9) suggests that it might be possible for the COV-8 relay to operate during a very low probability LOCA [Loss-of-Coolant Accident] sequencing event. However, for the more realistic LOCA sequencing scenarios involving contingencies (DG_FU6) and for manual motor starts after the LOCA sequencing event (DG_FU8), the COV-8 relay will not trip."

The staff notes that there is a potential for tripping the EDGs under the required design basis accident loading conditions. Please clarify whether the COV-8 relay settings have adequate margin to account for tolerances in relay setting, drift, inaccuracy in calculations due to data assumptions etc.

3. In response to NRC Question 3, the licensee states: "Actual motor starting simulations in DA-EE-92-111-01 [Attachment 3] demonstrate that the voltage element pickup will only be between 0.76 and 2.26 seconds rather than 5 seconds (See page 8 of DA-EE-92-111-01, Rev. 2)." Section 2.3 of Calculation DA-EE-92-111-01 [Attachment 3] stated that some scenarios may cause the Bus 14 loss of voltage (LOV) relay to inadvertently operate during the sequencing of loads. Section 2.4 of the calculation also identifies the need for further investigation in order to increase the existing margins ~~in order~~ to avoid an inadvertent operation of the LOV relay.

Please explain why the above condition (some scenarios may cause the Bus 14 loss of voltage (LOV) relay to inadvertently operate during the sequencing of loads) is considered acceptable, considering COV-8 undervoltage setting is approximately same as LOV relay. Please also explain the design function of LOV relay and consequences of inadvertently actuating the relay during sequencing or operation of the EDG.

4. In response to NRC Question 5, the licensee stated:

The DB-75 Amptector (52/EG1A1) is not bypassed on an SI. It is noted that 52/EG1A1 is the equipment designation being used for the DB-75 Amptector between the EDG and Bus 14 that is shown on page 245 of DA-EE-93-104-07, Rev. 8 [Attachment 2]. This device will isolate Bus 14 from the EDG if a fault exists on Bus 14. This Amptector is not considered a "diesel generator protective trip" because it sees only a portion of the EDG current (Bus 18 current not seen by this Amptector - See Drawing 33013-2539, Rev. 28).

Isolating Bus 14 because of a "bus fault" or a failure of one of the load breakers to clear a "fault or serious overload" is a desirable action during an SI event because Bus 18 can still be supplied by the EDG. This Amptector may also limit the amount of EDG damage during such an event. A "faulted" Bus 14 will not be of any use in mitigating an accident so there is no credible reason to bypass the Amptector during an SI [Safety Injection].

Regarding the above response, the licensee is requested to provide the following additional information:

a) The staff could not find the "DB-75 Amptector between the EDG and Bus 14 on Page 245 of DA-EE-93-104-07 [Attachment 2]. Please provide appropriate pages of Calculation of DA-EE-93-104-07.

b) Please provide time-current coordination curves for the 52/EG1A1, 52/EG1A2, 52/EG1B1, 52/EG1B2, and 52/EG1B3 breakers (which have built-in an Amptector protection device), showing the coordination with the upstream protection device (COV-8) and the most-limiting downstream protection device(s).

c) Please describe physical location of breaker 52/EG1B3 in relation to the DG "B".

d) Please confirm whether the maximum current which can pass through 52/EG1A1, 52/EG1A2, 52/EG1B1, 52/EG1B2, and 52/EG1B3 during worst case scenarios can cause tripping of these breakers.

e) Provide a description of the Amptector overcurrent protection devices of DG breakers 52/EG1A1, 52/EG1A2, 52/EG1B1, 52/EG1B2, and 52/EG1B3.

5. The licensee also provided a copy of the calculation DA-EE-98-089, Rev 1 [Attachment 4]. Section 2.2 of this calculation states: "Coordination of these relays [COV-8 relays] with any downstream devices is not relevant during the time period that an SI signal is present since the effective operation of these relays is blocked during that time."

   The staff finds that above statement will be no longer valid if the LAR "to not bypass these voltage-controlled overcurrent relays" is approved. Please provide an update or mark-up copy of the above calculation with changes based on the requested amendment.

6. Section 2.3 of calculation DA-EE-98-089, Rev 1 [Attachment 4] also states: "The 51/27 [COV-8] relays will also not coordinate with 52/EG1B3 for phase faults on Bus 17 or the feeder cable to Bus 17. Since this issue may cause a common mode failure for both Emergency Diesel Generators during a fire in the Screen House, setting changes to the 52/EG1B3 breaker is required."

   Please explain how a common mode failure for both Emergency Diesel Generators can occur during a fire in the Screen House, and how the changes made to the settings of 52/EG1B3 breaker helped to avoid the common mode failure.

Peter S. Tam

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