

NRR-PMDAPEm Resource

From: Thadani, Mohan
Sent: Monday, October 27, 2014 3:23 PM
To: Harding Jr, Thomas:(GenCo-Nuc)
Cc: Lilley, Michael:(GenCo-Nuc) (michael.lilley@exeloncorp.com); ONeal, Daniel
Subject: RE: Ginna NFPA-805 call
Attachments: Ginna follow up RAIs 10 27 14.docx

Tom:

We had a good discussion of the NFPA-805 draft RAI during the conference call on 10/23/2014. As agreed with Michael Lilley, attached please find the finalized RAI to be used for response to NRC.

Thanks,

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Hearing Identifier: NRR_PMDA
Email Number: 1670

Mail Envelope Properties (Mohan.Thadani@nrc.gov20141027152300)

Subject: RE: Ginna NFPA-805 call
Sent Date: 10/27/2014 3:23:00 PM
Received Date: 10/27/2014 3:23:00 PM
From: Thadani, Mohan

Created By: Mohan.Thadani@nrc.gov

Recipients:

"Lilley, Michael:(GenCo-Nuc) (michael.lilley@exeloncorp.com)" <michael.lilley@exeloncorp.com>
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Tracking Status: None
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Tracking Status: None

Post Office:

Files	Size	Date & Time
MESSAGE	509	10/27/2014 3:23:00 PM
Ginna follow up RAIs 10 27 14.docx		27379

Options

Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

Ginna RAIs

PRA RAI 11.02.1

With respect to PRA RAI 11.02, provide additional information to evaluate main control room (MCR) fire risk, as well as discuss if abandonment is credited for fires outside the MCR. The following question addresses fires, both inside and outside the MCR, which could lead to abandonment due to loss of control (LOC). This RAI does not replace the work to which Ginna has committed to complete the response to PRA RAI 11.02 with respect to CCDP values for MCR abandonment.

- a) Indicate if credit is taken for MCR abandonment for fires outside the MCR. If so, for what fire areas?
- b) Summarize the feasibility study done for the alternate shutdown procedure. According to the RAI response on MCR abandonment for MCR fire risk, the alternate shutdown procedure will be revised such that the required fire actions are called from the existing EOPs as well as the fire procedures. Provide a conclusion regarding the feasibility of this procedure.
- c) Identify the procedural criteria for abandonment due to LOC and discuss the process for how these criteria are implemented in the PRA
- d) The response to PRA RAI 11.02 indicates that for MCR fires leading to MCR abandonment the logic for abandonment was integrated into the logic model, and each scenario was treated specifically to the exact functional failures that the scenario caused. Ginna concludes that the continuum of complexity in their analysis covers the three bins in PRA RAI 11.02 as a result.

Provide a discussion on how fire affected equipment failure is included in the MCR abandonment scenarios for LOC driven abandonment. Include a description of how individual equipment, single spurious, and multiple spurious operational failures are developed for different scenarios. Questions to answer as a part of the discussion include the following: Do different abandonment scenarios have different sets of equipment failed, e.g. are there sets of ignition sources which fail different sets of equipment for abandonment? Was the treatment for fires outside the MCR due to LOC driven abandonment regarding this issue also applied to fires inside the MCR leading to abandonment due to LOC?

Please provide the answer to this question for MCR fires leading to abandonment due to loss of habitability as well.

- e) Provide the range of CCDP/CLERP values used to estimate the MCR abandonment CDF and LERF for abandonment due to LOC according to the different fire areas. Please distinguish between CCDPs for initiators which cannot be mitigated by remote shutdown operations (i.e. CCDP =1 always) and high CCDPs due to equipment failures (CCDP will exhibit a range), if this applies for your application

PRA RAI 19.1.1

With respect to the PRA RAI 19.1 response it is not clear how the qualitative reasons provided in the response are sufficient to address the large delta CDF exceedance due to the NUREG/CR-6850 fire ignition frequency sensitivity analysis. Please expand on the response to address the fire ignition frequency sensitivity risk results in accordance with the FAQ 08-0048. FAQ 08-0048 states that for those cases where the results from this sensitivity analysis indicate a change in the potential risk significance associated with elements of the Fire PRA or plant change evaluations which affects the decisions being made (e.g., what is acceptable with the new frequencies from EPRI 1016735 might not be acceptable with the current applicable set from NUREG/CR-6850), the licensee must address this situation by considering fire protection, or related, measures that can be taken to provide additional defense-in-depth. The defense in depth measures to address the delta CDF exceedance may be supported by qualitative and/or quantitative considerations (e.g., relevant sensitivity analyses, delta-risk calculation method, etc.).

PRA RAI 22.01.1

The PRA RAI 22.01 response notes that the Fire PRA assumes no core damage from an ISLOCA if the flow loss is within the capacity of makeup flow. ISLOCA sequences may need to be considered for the Fire PRA model if core damage results from no recirculation and from associated impacted equipment. Please discuss the basis for not including ISLOCA sequences due to these aspects.