

NRR-PMDAPem Resource

From: Wentzel, Michael
Sent: Tuesday, August 01, 2017 3:25 PM
To: Catron, Steve; Kilby, Gary
Cc: Mack, Jarrett; Hanek, Olga; Guth, Mitch
Subject: APLA RAI Re: NUREG-2180

Steve and Gary,

Based on internal deliberation that has occurred since the July 10 clarification call, the NRC staff has revised draft RAI APLA RAI-02.01, as indicated in the yellow highlighted text below. Please let me know if you would like to discuss the revisions or if you need additional clarification.

Thanks,
Mike

APLA RAI-02.01 Fire PRA

In response to APLA RAI 02, the licensee stated that the fire PRA that will be used to support the risk-informed completion times (RICT) calculations will be the same fire PRA that was determined to be acceptable for the NFPA 805 transition and future self-approval. In a related response to APLA RAI 09, FPL states that “[a]t the time of implementation of the RICT program, core damage frequency (CDF), and large early release frequency (LERF) will be estimated based on modifications completed for NFPA 805 as well as other changes in the model. The RICT program will only be implemented if it satisfies the limitations and conditions in Section 4, item 6 of the NEI 06-09 [safety evaluation].”

As discussed in the May 28, 2015, safety evaluation on the amendment to transition the fire protection program to Section 50.48(c) of Title 10 of the *Code of Federal Regulations* (10 CFR), FPL used the guidance in frequently asked question (FAQ) 08-0046, "Closure of National Fire Protection Association 805 Frequently Asked Question 08-0046 Incipient Fire Detection Systems" to incorporate its very early warning fire detection system (VEWFDS) into the fire PRA. **When FAQ 08-0046 was released, there was limited test data and PRA experience available for in-cabinet applications.** In December 2016, the NRC staff published new guidance on modeling VEWFDS in NUREG-2180, "Determining the Effectiveness, Limitations, and Operator Response for Very Early Warning Fire Detection Systems in Nuclear Facilities, (Delores-VEWFIRE)," **which resulted from a confirmatory research program (including the evaluation of recent operating experience) to advance the state of knowledge for in-cabinet applications. The research program was unable to confirm several key assumptions from FAQ 08-0046 that were used in the calculation of risk. Upon further evaluation of operating experience and the results of recent testing, the program determined that the risk reduction available for cabinet fires that are monitored by a VEWFDS system using the new assumptions was significantly reduced. The method provided in NUREG-2180 is more robust and technically justifiable.** The methodology in NUREG-2180 is currently the best available guidance and replaces the guidance in FAQ 08-0046, which has been retired.

By letter dated November 17, 2016 (ADAMS Accession No. ML16253A111), the NRC staff informed the industry that, “[i]f a licensee is performing a periodic or interim PRA update, performing a fire risk evaluation in support of self-approval, or submitting a future risk informed license amendment request, the staff’s expectation is that they will assess the impact of new operating experience and information [e.g., NUREG-2180] on their PRA analyses and incorporate the change as appropriate per Regulatory Guide 1.200, Revision 2.”

- a) If FPL will use the methodology in NUREG-2180 please provide

1. An estimate of the current CDF and LERF for all quantified hazards using the NUREG-2180 methodology in the fire PRA.
2. If the current CDF and LERF estimates do not satisfy the limitations and conditions in Section 4, item 6 of the NEI 06-09 safety evaluation explain how these guidelines will be met before implementation of the RICT program.
3. If the methodology (e.g., approach, methods, data, and assumptions) has not been incorporated into the fire PRA (i.e., PRA model changes and documentation completed and the upgrade peer reviewed), explain when it will be incorporated into the PRA model of record that will be used to estimate RICTs (response may reference the response to APLA RAI 15 which requests a list of implementation items).

b) If FPL proposes not to use the methodology in NUREG-2180 please provide

1. Confirmation that the methodology in the retired FAQ 08-0046 is not the proposed methodology.
2. A description of the proposed methodology (e.g., approach, methods, data, and assumptions) that will be used in the fire PRA. The description should include a detailed comparison of that proposed methodology with the methodology in NUREG-2180.
3. Justification of the proposed methodology including comparison with available experimental results. Development and use of a proposed alternative may result in additional RAIs and significantly extend the time and resources required to complete the review.
4. An estimate of the current CDF and LERF for each quantified hazard with fire PRA results: (1) without credit for VEFWDS, (2) that would be obtained had the guidance in NUREG-2180 been applied, and (3) obtained using the proposed methodology.
5. If the current CDF and LERF estimates do not satisfy the limitations and conditions in Section 4, item 6 of the NEI 06-09 safety evaluation, explain how these guidelines will be met before implementation of the RICT program.
6. An evaluation on how using the proposed methodology instead of the NUREG-2180 methodology could impact the RICT estimates.
7. If the methodology (e.g., approach, methods, data, and assumptions) has not been incorporated into the fire PRA (i.e., PRA model changes and documentation completed and the upgrade peer reviewed), explain when it will be incorporated into the PRA model of record that will be used to calculate the RICTs (response may reference the response to APLA RAI 15 which requests list a of implementation items).

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