

## **NRR-PMDAPEm Resource**

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**From:** Mahoney, Michael  
**Sent:** Monday, November 13, 2017 12:22 PM  
**To:** PT Vu  
**Cc:** Jeff Thomas (Jeff.Thomas@duke-energy.com)  
**Subject:** Request for Additional Information - McGuire Nuclear Station, Units 1 and 2 - IRLT (CACs MF9020 and MF9021; EPID L-2016-LLA-0032)

PT,

By letter dated December 19, 2016 (Agencywide Documents Access Management System (ADAMS) Accession No. ML16363A349) as supplemented by letter dated May 25, 2017 (ADAMS Accession No. ML17156A563), Duke Energy, (the licensee), requested changes to the Technical Specifications (TSs) for McGuire Nuclear Station (McGuire), Units 1 and 2. The proposed change would permit the existing Containment 10 CFR 50 Appendix J Type A Integrated Leakage Rate Test (ILRT) intervals to be extended from 10 years to 15 years and the Type C test (LLRT) intervals for qualifying containment isolation valves (CIVs) to be extended from 60 months up to 75 months on a permanent basis.

In order to complete its review, the U.S. Nuclear Regulatory Commission staff requests the following additional information. Please provide your response to the following requests for additional information (RAIs) within 30 days of the date of this correspondence.

### **RAI-02**

Section 3.1.6.3 on page 16 of Enclosure 1 of the LAR states, "The EPRI methodology used to estimate the increase in LERF is conservative." Section 7.0 on page 35 of Attachment 5 of the LAR also states, "The EPRI methodology used to estimate the increase in LERF is conservative. Therefore, even though the increase in LERF is near the Regulatory Guide 1.174 threshold, the conservative methodology adds margin."

Section 3.1.6.3 on page 16 of Enclosure 1 and page 36 of Attachment 5 of the LAR both state, "Therefore, increasing the ILRT interval to 15 years is considered to be insignificant since it represents a very small change to the MNS risk profile."

Based on the discussion above, address the following:

- a. With the total LERF for both Unit 1 (7.83E-6/yr) and Unit 2 (8.59E-6/yr) being close to the 1E-5/yr threshold, confirm that the "conservative methodology" made in this ILRT analysis maintain  $\Delta$ LERF within Region II of RG 1.174. When citing conservatism in the base PRA model, confirm that calculation of the differential risk for the application is also conservative (i.e., the risk estimated for the before versus after condition uses the same assumptions, etc., except for the change to any basic event values affected by the application, ensuring that the before value is not overestimated such that subtracting it from the after value could underestimate the risk increase).
- b. Even if the conservative methodology maintains  $\Delta$ LERF within Region II of RG 1.174, the change to the MNS risk profile is not considered to be very small, and therefore not insignificant. Justify the reasoning for considering this LAR to be insignificant to the risk profile and to represent a very small change if the LAR is within Region II of RG 1.174.

### **RAI-03**

According to Regulatory Issue Summary 2007-06 the NRC staff expects that licensees fully address all scope elements with Revision 2 of Regulatory Guide (RG) 1.200 by the end of its implementation period (i.e., one

year after the issuance of Revision 2 of RG 1.200). Revision 2 of RG 1.200 endorses, with exceptions and clarifications, the combined American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) PRA standard (ASME/ANS RA-Sa-2009).

On page 13 of Enclosure 1 of the LAR, the licensee states, "The technical adequacy of the MNS PRA is consistent with the guidance of Regulatory Guide 1.200 Revision 2." Given the guidance listed above:

- a. Confirm that the peer reviews of the Internal Flood PRA in September 2011, the LERF PRA in December 2012, and the Internal Events PRA in June 2015, cited on page 37 of Attachment 5 of the LAR were reviewed against the 2009 ASME/ANS PRA Standard, as clarified by RG 1.200, Revision 2. If not, please identify any gaps between the peer review and the requirements in RG 1.200, Revision 2.
- b. Identify when the peer review of the Fire PRA and the High Winds PRA was performed, and confirm that the peer review of the High Winds PRA, cited on page 37 of Attachment 5 of the LAR was reviewed against the 2009 ASME/ANS PRA Standard, as clarified by RG 1.200, Revision 2. If not, please identify any gaps between the peer review and the requirements in RG 1.200, Revision 2.

#### **RAI-04**

For the disposition of F&O WPR A3-1 in Attachment 5 on page 58 of the LAR, the licensee states, "Failure of the Main Steam and Feedwater lines due to wind pressure or missile is modeled as failing both diesel generators." As a result, wind pressure fragilities are a major contributor to the MNS plant CDF. Next, the licensee states, "The re-evaluation provided a significantly higher wind loading. Incorporating this re-evaluation, along with adding separate failure modes for wind pressure and missiles in to the PRA, reduced the calculated CDF / LERF risk."

Based on the information provided in the disposition, it is unclear how a significantly higher wind loading for the Main Steam and Feedwater lines would reduce CDF and LERF, unless the licensee meant the higher wind loading is actually a higher threshold for withstanding wind loading. It is also unclear how adding separate failure modes would reduce CDF and LERF. Clarify how assuming a higher wind load and how adding separate failure modes for the Main Steam and Feedwater lines reduces the plant CDF and LERF.

#### **RAI-05**

For the disposition of F&O SF A5-01, the licensee states, "No impact on quantification of Fire PRA or Change Evaluations: seismic-fire interaction is purely qualitative per NUREG/CR-6850."

The NRC agrees there is no quantitative impact on the Fire PRA due to fire-seismic interactions, however this finding is qualitative in nature, and the licensee does not address the qualitative risk from lack of fire brigade training requirements on fire-seismic interactions. Identify how the training requirements in the fire brigade training program addresses fire-seismic interactions. If there is no requirement in the fire brigade training program, identify how the licensee's fire brigade is trained to handle fire-seismic interactions. If no such requirement or training exists, evaluate the qualitative impact of fire-seismic interactions on the Fire PRA.

Once this email is added to ADAMS, I will provide the accession number for your reference.

Thanks  
Mike

#### **Michael Mahoney**

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