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CNS-16-064

September 7, 2016

10 CFR 50.90

U.S. Nuclear Regulatory Commission (NRC)  
Attention: Document Control Desk  
Washington, D.C. 20555-0001

Subject: Duke Energy Carolinas, LLC (Duke Energy)  
Catawba Nuclear Station, Units 1 and 2  
Docket Numbers 50-413 and 50-414  
License Amendment Request (LAR) to Adopt National Fire Protection  
Association (NFPA) 805 Performance-Based Standard for Fire Protection for  
Light-Water Reactor Generating Plants  
Revised Response to Probabilistic Risk Assessment (PRA) Request for  
Additional Information (RAI) 24  
(TAC Nos. MF2936 and MF2937)

- References:
1. Letters from Duke Energy to the NRC, dated September 25, 2013 (ADAMS Accession Number ML13276A503), January 13, 2015 (ADAMS Accession Number ML15015A409), January 28, 2015 (ADAMS Accession Number ML15029A697); February 27, 2015 (ADAMS Accession Number ML15065A107), March 30, 2015 (ADAMS Accession Number ML15091A339), April 28, 2015 (ADAMS Accession Number ML15119A533), July 15, 2015 (ADAMS Accession Number ML15198A036), August 14, 2015 (ADAMS Accession Number ML15231A010), September 3, 2015 (ADAMS Accession Number ML15310A123), December 11, 2015 (ADAMS Accession Number ML15350A014), January 7, 2016 (ADAMS Accession Number ML16011A121), March 23, 2016 (ADAMS Accession Number ML16096A262, and June 15, 2016 ADAMS Accession Number ML16169A107)
  2. Letter from the NRC to Duke Energy, "Catawba Nuclear Station, Units 1 and 2 - Request for Additional Information Regarding License Amendment Request to Implement a Risk-Informed, Performance-Based Fire Protection Program (TAC Nos. MF2936 and MF2937)", dated July 7, 2016 (ADAMS Accession Number ML16187A066)

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3. Letter from the Duke Energy to NRC, " License Amendment Request (LAR) to Adopt National Fire Protection Association (NFPA) 805 Performance-Based Standard for Fire Protection for Light-Water Reactor Generating Plants Response to NRC Request for Additional Information (RAI) and Revision to RAI Response (TAC Nos. MF2936 and MF2937)", dated August 2, 2016 (ADAMS Accession Number ML16217A456)

The Reference 1 letters comprise in their entirety Duke Energy's request for NRC review and approval for adoption of a new fire protection licensing basis which complies with the requirements in 10 CFR 50.48(a), 10 CFR 50.48(c), and the guidance in Regulatory Guide (RG) 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," Revision 1, dated December 2009. The September 25, 2013, reference LAR was developed in accordance with the guidance contained in Nuclear Energy Institute (NEI) 04-02, "Guidance for Implementing a Risk-Informed, Performance-Based Fire Protection Program Under 10 CFR 50.48(c)," Revision 2.

The Reference 2 letter, from the NRC to Duke Energy, transmitted RAIs necessary for the NRC to continue its review of the September 25, 2013, reference LAR. The Reference 3 letter dated August 2, 2016 (ML16217A456), provided Duke Energy's response to the RAI.

The purpose of this letter is to provide a revision to a response provided in the Reference 3 letter dated August 2, 2016 (specifically, PRA RAI 24). The NRC requested the revision of PRA RAI 24 during a telephone conference call on August 24, 2016. The enclosure to this letter provides the revised PRA RAI 24 response. For the specified RAI, the format of the enclosure is to restate the RAI question, followed by its associated response.

The conclusions of the No Significant Hazards Consideration and the Environmental Consideration contained in the September 25, 2013 reference LAR are unaffected by this submittal.

There are no new regulatory commitments contained in this letter.

Pursuant to 10 CFR 50.91, a copy of this LAR supplement is being sent to the appropriate State of South Carolina official.

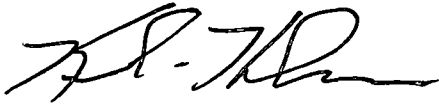
Inquiries on this matter should be directed to Sherry Andrews at (803) 701-3424.

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I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 7, 2016.

Very truly yours,

A handwritten signature in black ink, appearing to read 'K. Henderson', with a long horizontal flourish extending to the right.

Kelvin Henderson  
Vice President, Catawba Nuclear Station

Enclosures

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xc:

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Enclosure 1

Revised PRA RAI 24 Response

## **Probabilistic Risk Assessment (PRA) Request for Additional Information (RAI) 24**

In its letter dated June 15, 2016, the licensee stated that “a gap was identified in the NFPA 805 safe shutdown analysis related to the reactor coolant pump seals and the time available to start the Standby Shutdown Facility’s (SSF) standby make-up pump (SMUP).” The NRC staff’s understanding of the licensee’s PRA is that the SSF is an important contributor to keeping the risk from fires low, and that RCP seal LOCAs are an important contributor to fire risk. Because of the potential importance of the scenarios, the NRC staff requires additional information to determine whether the risk results following the RCP analysis update will remain acceptable or whether additional modifications or evaluations are needed. Please provide the following:

- Summarize the PRA models in which the time available to start the SSF SMUP are used.
- Describe the changes to the PRA input values that may occur when the time available will change.
- Provide the risk results (total CDF, total LERF, change-in-risk associated with transition to NFPA-805) of a sensitivity study based on a reasonable bounding estimate of the change in the time available.
- If the risk results indicate that the risk acceptance guidelines would be exceeded after the RCP analysis update, describe what actions can be taken to bring the risk results below the acceptance guidelines.

### **Duke Energy Response:**

**The Catawba Fire PRA uses the Westinghouse Owners’ Group (WOG) 2000 Reactor Coolant Pump Seal LOCA model to determine the probability of a potential reactor coolant pump seal LOCA following an event. A time available of 13 minutes is used to calculate the Human Error Probability (HEP) associated with starting the SSF SMUP. CNS is currently pursuing finalization of an analysis to address the gap related to the reactor coolant pump loss of seal cooling and the time available to start the SSF SMUP. A draft of this analysis has been provided to CNS. It indicates that the time from the start of the event to when the SSF SMUP would need to be actuated is greater than the 13 minutes assumed in the PRA. Therefore, the time available of 13 minutes, currently used for this action’s HEP, is bounding and does not need to be updated as a result of this pending analysis. Implementation Item 20 in Table S-3 of Attachment S tracks the completion of the reactor coolant pump seal response time evaluation.**