



Callaway Plant

November 14, 2018

ULNRC-06469

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

10 CFR 50.54(f)

Ladies and Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
RENEWED FACILITY OPERATING LICENSE NPF-30
REQUEST FOR EXTENSION OF SEISMIC PROBABILISTIC RISK
ASSESSMENT SUBMITTAL**

References:

1. NRC Letter, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3 of the Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated March 12, 2012 (ML12053A340)
2. ULNRC-06102, "Ameren Missouri Seismic Hazard and Screening (CEUS Sites) Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated March 28, 2014 (ML14090A448)
3. NRC Letter, "Final Determination of Licensee Seismic Probabilistic Risk Assessments Under the Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1 'Seismic' of the Near-Term Task Force Review of Insights from the Fukushima Daiichi Accident," dated October 27, 2015 (ML15194A015)
4. ULNRC-06377, "Request For Extension of Seismic Probabilistic Risk Assessment Submittal," dated June 15, 2017 (ML17166A474)
5. NRC Letter, "Callaway Plant, Unit 1 – NRC Response to Request for Extension of Seismic Probabilistic Risk Assessment Submittal," dated August 22, 2017 (ML17200D113)
6. NRC Letter, "Callaway Plant, Unit 1 – Staff review of Spent Fuel Pool Evaluation Associated with Reevaluated Seismic Hazard Implementing Near-Term Task Force Recommendation 2.1: Seismic", dated January 23, 2018 (ML18003B419)

Union Electric Company (Ameren Missouri) hereby requests an extension of the December 31, 2018, due date for submittal of the Seismic Probabilistic Risk Assessment (SPRA) for Callaway Plant Unit 1. Ameren Missouri is requesting that the due date be extended to September 30, 2019.

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Reference 1 to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 1 of Reference 1 requested each addressee located in the Central and Eastern United States (CEUS) to submit a Seismic Hazard Evaluation and Screening Report. Reference 2 provided the Seismic Hazard and Screening Report for Callaway Plant. Based on the results of the screening evaluation provided in Reference 2, it was determined that Callaway Plant screens in for a required risk evaluation in the form of a Seismic PRA (SPRA), a spent fuel pool evaluation, and a high frequency confirmation (relay chatter) evaluation. Reference 3 was issued by the NRC and provided the required submittal dates for the SPRAs and remaining high frequency and spent fuel pool seismic evaluations in order for licensees to complete their responses to the March 12, 2012 request for information (Reference 1). In Reference 4, Callaway requested an extension of the submittal date for the SPRA until December 31, 2018. In Reference 5, the NRC approved the extension request for the SPRA and the corresponding seismic Mitigating Strategies Assessment (MSA).

Ameren Missouri has completed the spent fuel pool evaluation for Callaway Unit 1, as reviewed by the NRC per Reference 6. The effects of high frequency exceedance on plant equipment will be assessed as part of the SPRA.

In order to complete the SPRA evaluation for the Callaway Plant, an extension of 9 months beyond the current December 31, 2018 due date is needed. This would move the submittal date to September 30, 2019. Ameren Missouri discussed the need for this extension with NRC staff via telephone in October 2018. As noted in that discussion, the in-progress results received for Callaway's SPRA are not believed to be a realistic representation of the seismic risk at the plant. Since the first extension request, the focus has been on identifying possible drivers for those results and performing refinements to the SPRA model. Until recently, these refinement efforts were largely unsuccessful in developing significant changes in the model results. Refinement efforts made within the past 3 months, however, appear to be more impactful, and the SPRA model is beginning to identify drivers and more realistic insights into the seismic risk for the Callaway Plant. To support the NRC performing an effective review of the results, additional time is required to fully complete the seismic PRA refinement and analysis that realistically quantifies the seismic risk at Callaway Plant.

A peer review was performed of the Callaway SPRA in accordance with NEI 12-13, "External Hazards PRA Peer Review Process Guidelines", in June of 2018. The peer review team concluded that the Callaway SPRA meets most of the PRA Standard requirements. However, the peer review team noted that a number of the modeling approaches in the fragility analysis and plant response analysis for the Callaway SPRA are overly conservative and have resulted in a seismic CDF result that appears unrealistic for this plant design and operation.

Following the peer review, the seismic PRA model has been used to guide and prioritize a number of refinements to the fragility analysis for specific components. Consequentially, the current risk estimates and insights are converging to results that are more in line with expectations and industry experience. None of the fragility refinements required advanced fragility analysis techniques or any assumptions for modification to the plant. The refinements are based instead on more realistic estimates and treatment of either the existing seismic demand or the actual seismic capacity of individual components. The Callaway risk profile is extremely flat (i.e., no individual components are driving the risk estimates) which is an indication of a balanced design, but it also means that a relatively large number of fragility refinements are needed for a more realistic risk estimate.

In addition to the unanticipated flat risk profile and resultant extensive refinements required, the Callaway SPRA initial project schedule did not provide an adequate amount of time to complete the SPRA Peer Review and then resolve the resulting Facts and Observations. The effort to resolve the Facts and Observations resulting from the Peer Review effort typically requires a six-month duration. With the extension of the SPRA submittal date, Ameren Missouri will have adequate time to address the Facts and Observations and utilize the NRC endorsed method to conduct an Independent Assessment Team process to closeout the Facts and Observations.

Ameren Missouri has developed a detailed schedule for the required activities, and it indicates that the final Callaway Unit 1 SPRA can be submitted to the NRC on or before September 30, 2019. Ameren Missouri is therefore requesting that the SPRA submittal due date be extended to that date.

Depending on the results of the SPRA, a seismic MSA could be required. If a seismic MSA is required for the Callaway Plant, an extension until December 31, 2019 is requested. This provides an additional three months to complete the MSA evaluation beyond the SPRA submittal date.

Continued plant operation during the extension period is justified based on considerations that include consistency with the NRC overall schedule for submittal of all Near-Term Task Force related plant SPRAs, the defense-in-depth provided by compliance with all NRC Orders regarding beyond design basis events, completion of the NRC endorsed Expedited Seismic Evaluation Process and all actions identified by that process, the inherent nuclear power plant design margins, and completion of the evaluation demonstrating the beyond design basis seismic robustness of the Callaway Plant Unit 1 spent fuel pool. No plant vulnerabilities have been identified and no safety concerns have been raised by the continuous review of the insights from the in-process SPRA for the Callaway Plant. Therefore, there is no undue risk associated with delaying submittal of the SPRA results for NRC review.

This letter does not contain new commitments. If you have any questions, please contact Justin Hiller at 314-225-1141 or Bruce Huhmann at 573-694-6741.

Sincerely,



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