From: Mahesh Chawla
Sent: Thursday, November 17, 2022 5:07 PM
To: Elwood, Thomas B
Cc: Jennifer Dixon-Herrity; Diana Woodyatt; Scott Krepel; Vic Cusumano; Ahsan Sallman; Santosh Bhatt; Mathew Panicker; Ravi Grover; Andrea Keim; Kerri Kavanagh; Jeremy Dean; Gerry Stirewalt; Kenneth Erwin; Donald Palmrose
Subject: Final - LIC-109 Acceptance Review (Unacceptable for Review with Opportunity to Supplement) - Callaway Plant, Unit 1 - LAR for proposed changes to TS and Exemption Request Regarding use of Framatome GAIA Fuel - EPID L-2022-LLA-0150 & L-2022-LLE-0030

Dear Mr. Elwood,

By letter dated October 12, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML2228A115), Ameren Missouri (the licensee) submitted a license amendment request and a regulatory exemption for Callaway Plant, Unit 1. The proposed license amendment request (LAR) would revise the Technical Specifications to allow use of Framatome GAIA fuel with M51 as a fuel cladding material. Since the Framatome GAIA fuel will use M5 fuel rod cladding, a 10 CFR 50.46 and 10 CFR 50 Appendix K exemption request is included as part of this license amendment request (LAR). In accordance with 10 CFR 50.12, "Specific exemptions," Ameren Missouri requests exemptions from the requirements specified in 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," and 10 CFR 50 Appendix K, "ECCS Evaluation Models," paragraph I.A.5, regarding the use of zircaloy or ZIRLO1 as a fuel rod cladding material at Callaway Plant Unit 1. This request would not exempt Callaway Plant Unit 1 from any other requirements of 10 CFR 50.46 or 10 CFR Part 50, Appendix K regarding acceptance criteria, evaluation model features and documentation, reporting of changes or errors, etc.

Ameren Missouri is implementing a plan that provides for the option of transitioning from the use of fuel manufactured by Westinghouse Electric Company (Westinghouse), as currently used in the Callaway reactor core, to the use of fuel manufactured by Framatome, Inc. Implementation of the plan has already begun, as four Framatome lead fuel assemblies were placed into service (in non-limiting locations) during operating cycle 25. The plan will proceed to and through the point in time when a management decision will be made on whom to award the fuel contract for subsequent Callaway operation. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), an application for an amendment to a license (including the technical specifications) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations. The NRC staff has reviewed your application and concluded that the information listed below is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment and exemption in terms of regulatory requirements for the protection of public health and safety and the environment.

REQUEST FOR SUPPLEMENTAL INFORMATION

1. Regarding control rod ejection accident analysis, Enclosure 1, pdf page 12 states: “The results of the analysis are available for NRC review (Reference 45).” The Reference 45 in Enclosure 1 is ANP-4012P, "Callaway Rod Ejection Accident Analysis," dated July 2022. Please submit ANP-4012P as a supplement to the license amendment request (LAR) or make it readily available on an electronic portal.
2. It is not clear in the LAR whether the location of the 8 GAIA fuel assemblies in the Cycle 27 core are in **limiting or non-limiting locations.** In Enclosure 1, pdf page 4/24, the second paragraph states:

"Note that the technical reports were written to support a full transition to Framatome GAIA fuel including intermediate batch load quantities of fuel. Operation with eight assemblies starting in operating cycle 27 is bounded by the evaluations performed although not explicitly stated in all locations. A separate license amendment request will be required at a later date, to address the potential transition to Framatome GAIA fuel." The demonstration analysis presented in the attachments to Enclosure 1 are all based on Framatome methodologies.

Please clarify if the highlighted sentence in the above statement implies that the 8 GAIA assemblies in Cycle 27 core are in limiting positions, such that the demonstration analysis presented in the attachments to Enclosure 1 is bounding for these assembly locations.

3. In response to question 2, in case the GAIA assemblies are in **limiting locations**, please clarify what Technical Specifications (TS) would be applicable during Cycle 27 operation. The LAR does not include the Framatome fuel TS 3.2 "Power Distribution Limits" and Framatome methodologies in TS 5.6.5, "Core Operating Limit Report."

To make the application complete, the NRC staff requests that the licensee supplement the application to address the information requested by mutually agreed upon date. This will enable the NRC staff to begin its detailed technical review. If the information responsive to the NRC staff's request is not received by the mutually agreed upon date, the application will not be accepted for review pursuant to 10 CFR 2.101, and the NRC will cease its activities associated with the application. If the application is subsequently accepted for review, you will be advised of any further information needed to support the staff's detailed technical review by separate correspondence.

On November 17, 2022, a clarification teleconference was held between your representatives and the NRC staff to discuss the requested supplemental information. At the conclusion of the call, you agreed to provide the response to this request in a supplement on the docket within 13 working days. We look forward to your response on the docket by December 7, 2022.

If you have any questions, please contact me. Thanking you,

Sincerely,

Mahesh Chawla, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
ph: 301-415-8371

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DATE	11/15/2022	11/15/2022

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