



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 19, 2022

Mr. Fadi Diya
Senior Vice President and
Chief Nuclear Officer
Ameren Missouri
Callaway Energy Center
8315 County Road 459
Steedman, MO 65077

SUBJECT: CALLAWAY PLANT, UNIT NO. 1 – SUPPLEMENTAL INFORMATION NEEDED
FOR ACCEPTANCE OF REQUESTED LICENSING ACTION RE: AMENDMENT
TO ALLOW USE OF FRAMATOME GAIA FUEL (EPID L-2022-LLA-0083)

Dear Mr. Diya:

By letter dated June 2, 2022, Union Electric Company, dba Ameren Missouri (the licensee) submitted a license amendment request (LAR) for Callaway Plant, Unit No. 1 (Callaway). The proposed amendment would revise the technical specifications (TSs) to allow the use of Framatome GAIA fuel at Callaway. The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this amendment request. 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, "Application for amendment of license, construction permit, or early site permit," of Title 10 of the *Code of Federal Regulations* (10 CFR), an application for an amendment to a license (including the TSs) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34, "Contents of applications; technical information," 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 delineated in the enclosure to this letter is necessary to enable the staff to make an independent assessment regarding the acceptability of the proposed amendment in terms of regulatory requirements for the protection of public health and safety and the environment.

In order to make the application complete, the NRC staff requests that the licensee supplement the application to address the information requested in the enclosure by August 5, 2022. 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 above date, the application will not be accepted for review pursuant to 10 CFR 2.101, "Filing of application," 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 NRC staff's detailed technical review by separate correspondence.

We transmitted the draft information to you by email on July 8, 2022, and at your request, we held a clarification call on July 14, 2022. The information requested and associated timeframe in this letter were discussed with Mr. Thomas Elwood of your staff during this clarification call.

If you have any questions, please contact me at (301) 415-8371 or via e-mail at Mahesh.Chawla@nrc.gov.

Sincerely,

/RA/

Mahesh L. Chawla, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:
Supplemental Information Needed

cc: Listserv

SUPPLEMENTAL INFORMATION NEEDED

LICENSE AMENDMENT REQUEST FOR TRANSITION TO FRAMATOME GAIA FUEL

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT NO. 1

DOCKET NO. 50-483

By letter dated June 2, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22153A174), Ameren Missouri (the licensee) submitted a license amendment request (LAR) for Callaway Plant, Unit No. 1 (Callaway). The proposed amendment would revise the technical specifications (TSs) to allow the use of Framatome GAIA fuel at Callaway.

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed this LAR and found that the licensee's application has insufficient technical information to accept this LAR. Please provide the responses to the following information that is required to further assess the NRC staff's acceptance of the LAR:

1. Enclosure 1 of the licensee's letter identifies that the results of the control rod ejection event analysis will be available for review by the NRC staff but does not identify a timeline for availability. More detailed information concerning the schedule for providing this analysis appears necessary to support a determination of the NRC staff's review timeline.
2. In general, the limitations and conditions, established by NRC staff, for each technical report associated with GAIA fuel, and requested by the licensee to be added to its licensing basis, are not dispositioned or addressed.
3. The licensee proposes a unique TS structure, which includes parallel sets of TS requirements for TSs 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)"; 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor"; and 3.2.3, "Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology," with one set of requirements based on Westinghouse fuel and methods, and the other based on those of Framatome. While the licensee would allow both fuel types to be present in limiting locations for several cycles, only one set of these TS requirements would apply for each cycle. Framatome has performed confirmatory analysis for its fuel, and the two sets of parallel TS operating limits would be similar. However, differences remain, such as with respect to TS required actions and surveillances. The basis for selecting one or the other of the parallel sets of TS requirements as governing for a given cycle is not clear and does not necessarily appear to be associated with which type of fuel has the limiting operating margin. The application does not appear to include sufficient information justifying why the TS requirements for the fuel type considered to "govern Core Operating Limits Report development" adequately protect the other fuel type, which could be more limiting with respect to operating margin.

Enclosure

4. Enclosure 1, Attachment 12 (ANP-3969P) identifies that evaluation of the inadvertent loading and operation of a fuel assembly in an improper position event will be provided by the licensee. However, the NRC staff could not locate the analysis or disposition of this event in the licensee's submittal. This information should be provided, and the licensee should clarify the expected schedule to support a determination of the NRC staff's review timeline.

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DATED JULY 19, 2022

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ADAMS Accession No.: ML22199A177***by email**

OFFICE	NRR/DORL/LPL4/PM*	NRR/DORL/LPL4/LA*	NRR/DORL/LPL4/BC*
NAME	MChawla (SLingam for)	PBlechman	JDixon-Herrity
DATE	7/18/2022	7/18/2022	7/19/2022
OFFICE	NRR/DORL/LPL4/PM*		
NAME	MChawla (SLingam for)		
DATE	7/19/2022		

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