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**Subject:** Shearon Harris - Supplemental Information Needed for Acceptance of RCS Flow Rate Reduction and Related Requests (EPID L-2020-LLA-0040)  
**Date:** Monday, April 06, 2020 3:32:00 PM  
**Attachments:** [Shearon Harris Nuclear Plant Supplemental Information Needed for the Reactor Coolant System LAR.pdf](#)

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**SUBJECT:** SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 –  
SUPPLEMENTAL INFORMATION NEEDED FOR ACCEPTANCE OF  
REQUESTED LICENSING ACTION RE: LICENSE AMENDMENT  
REQUEST TO REDUCE THE MINIMUM REQUIRED REACTOR COOLANT  
SYSTEM FLOW RATE AND UPDATE THE LIST OF ANALYTICAL  
METHODS USED IN THE DETERMINATION OF CORE OPERATING  
LIMITS (EPID L-2020-LLA-0040)

Ms. Maza,

By letter dated March 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20066L112), Duke Energy Progress, LLC (the licensee) submitted a license amendment request (LAR) for the Shearon Harris Nuclear Power Plant, Unit 1 (Harris). The proposed amendment would modify Technical Specifications (TSs) requirements in support of analysis development for Harris Cycle 24, introduction of reload batches of Framatome, Inc. GAIA fuel assemblies, and update the formatting and content of the references list contained in the Core Operating Limits Report specifications.

The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this license 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 of Title 10 of the *Code of Federal Regulations* (10 CFR), whenever a holder of a license, including a construction permit and operating license under this part, and an early site permit, combined license, and manufacturing license under part 52 of this chapter, desires to amend the license or permit, application for an amendment must be filed with the Commission, as specified in §§ 50.4 or 52.3 of this chapter, as applicable, fully describing the changes desired, 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.

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 April 23, 2020. 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, and the NRC will

cease its review 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.

The information requested and associated time frame in this letter were discussed with Art Zaremba of your staff on April 6, 2020.

If you have any questions, please contact me at 301-415-1387 or by e-mail at [Tanya.Hood@nrc.gov](mailto:Tanya.Hood@nrc.gov).

Sincerely,

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SUPPLEMENTAL INFORMATION NEEDED  
FOR REVIEW OF LICENSE AMENDMENT REQUEST  
TO REDUCE THE MINIMUM REQUIRED REACTOR COOLANT SYSTEM FLOW RATE AND  
UPDATE THE LIST OF ANALYTICAL METHODS USED IN THE DETERMINATION OF CORE  
OPERATING LIMITS  
DUKE ENERGY PROGRESS, LLC  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NO. 50-400

By letter dated March 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20066L112), Duke Energy Progress, LLC (the licensee) submitted a license amendment request (LAR) for the Shearon Harris Nuclear Power Plant, Unit 1 (Harris). This LAR requests the Nuclear Regulatory Commission (NRC) to modify Technical Specifications (TSs) requirements in support of analysis development for Harris Cycle 24, introduction of reload batches of Framatome, Inc. GAIA fuel assemblies and update the formatting and content of the references list contained in the Core Operating Limits Report specifications.

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," Section 50.36, "Technical specifications," establishes the regulatory requirements related to the content of Technical Specifications (TSs). Pursuant to 10 CFR 50.36, TSs are required to include items in the following categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings, (2) limiting conditions for operation, (3) surveillance requirements, (4) design features, and (5) administrative controls.

The requested licensing action is based, in part, on two submitted loss-of-coolant accident (LOCA) analyses, a small-break and a large-break LOCA. These analyses indicate that they will support batch loading of the Framatome GAIA fuel assembly design. However, the NRC staff did not identify any information specifically requesting to implement the GAIA fuel assembly topical report, ANP-10342NP-A, "GAIA Fuel Assembly Mechanical Design," (ADAMS Accession No. ML19309D916), or justifying the use of the GAIA fuel assembly design. Specifically, a disposition of Harris Updated Final Safety Analysis Report (UFSAR) Chapter 15 safety analyses, as was provided to justify the reactor coolant system flow rate reduction, would be required to show that facility operation remains compliant with applicable regulatory requirements upon batch introduction of the GAIA fuel assembly design<sup>1</sup>. Material to address the five limitations and conditions contained in the NRC staff safety evaluation approving

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<sup>1</sup> For UFSAR Chapter 15 analyses excluding LOCA analyses, these would include primarily General Design Criteria (GDCs) 10, 11, 12, 13, 15, 20, 25, 26, 27, 28, and 31, contained in Appendix A to 10 CFR 50. Specific requirements apply to each analysis and are not provided to preserve brevity.

ANP-10342NP-A would also be required. The NRC staff notes that Limitation 4 of the SE approving ANP-10342NP-A was deleted, which would require limitations and conditions 1-3 and 5 to be addressed.

The NRC staff has reviewed the information submitted by the licensee and determined that additional information is required to complete its review. The specific supplemental information needed is addressed below:

1. Provide a disposition of the effects of the proposed GAIA fuel assembly introduction on the Harris UFSAR Chapter 15 safety analyses, excepting the small-break and a large-break LOCA analyses already provided.
2. Provide information justifying the implementation of ANP-10342NP-A for batch loading of the GAIA fuel assembly design.
3. Provide information to indicate how the licensee has satisfied the limitations and conditions associated with the SE approving ANP-10342P-A, including particularly a rod control cluster assembly ejection accident that is consistent with Limitation 5.<sup>2</sup>

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<sup>2</sup> The NRC staff notes that Section 3.5.21.1 of the SE approving Amendment No. 164 to the Harris Operating License (ADAMS Accession No. ML18060A401) discusses rod control cluster assembly ejection accident acceptance criteria that are consistent with those envisioned in limitations and conditions 5 of ANP-10342NP-A.