

## **NRR-DMPSPEm Resource**

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**From:** Galvin, Dennis  
**Sent:** Wednesday, April 18, 2018 3:05 PM  
**To:** Ellis, Kevin Michael  
**Cc:** Sahay, Prem  
**Subject:** Robinson RAIs – LAR to Revise TS to Add a 2nd Qualified Offsite Power Circuit and Revise UFSAR to Operate LTCs in Automatic Mode (CAC No. MG0276; L 2017-LLA-0308)  
**Attachments:** Robinson LAR - Transmission Upgrade Final RAI for Duke Energy L-2017-LLA-0308 2018-04-18.pdf

Mr. Ellis,

By letter dated September 27, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17270A041), Duke Energy Progress, LLC (the licensee) submitted a license amendment request (LAR) for H. B. Robinson Steam Electric Plant Unit No. 2. The proposed amendment would revise the Technical Specifications (TSs) to reflect the addition of a second qualified offsite power circuit. In addition, the proposed amendment requests approval to change the Updated Final Safety Analysis Report (UFSAR) to allow for the use of automatic load tap changers (LTCs) on the new (230 kilovolt (kV)) and the replacement (115kV) startup transformers.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed to complete its review. The enclosed RAIs were e-mailed to the licensee in draft form on April 12, 2018 (ADAMS Accession No. ML18102B081). An RAI clarification call was held on April 18, 2018. During the call, the licensee agreed to provide responses to the RAIs by May 18, 2018. The NRC staff agreed with this date.

As the NRC staff previously noted in the acceptance email dated October 27, 2017 (ADAMS Accession No. ML17300A698), the LAR does not request a specific implementation period for the amendment. The NRC staff recommends that a specific implementation period be identified in the correspondence responding to the RAIs.

If you have any questions, please contact me at (301) 415-6256.

Respectfully,

Dennis Galvin  
Project Manager  
U.S Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
Division of Operating Reactor Licensing  
Licensing Project Branch 2-2  
301-415-6256

Docket No. 50-261

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**Created By:** Dennis.Galvin@nrc.gov

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Tracking Status: None  
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REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST REGARDING REVISION TO TECHNICAL  
SPECIFICATION 3.8.1 AND ADDITION OF A SECOND QUALIFIED OFFSITE CIRCUIT WITH  
NEW STARTUP TRANSFORMERS AND LOAD TAP CHANGERS IN AUTOMATIC MODE

DUKE ENERGY PROGRESS, LLC

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2

DOCKET NO. 50-261

CAC NO. MG0276; EPID L-2017-LLA-0308

By letter dated September 27, 2018, (Agencywide Documents Access and Management System Accession No. ML17270A041), Duke Energy Progress, LLC (the licensee) submitted a license amendment request (LAR) for the H. B. Robinson Steam Electric Plant Station, Unit 2 (Robinson or HBRSEP). The proposed amendment would revise the Technical Specifications (TSs) to reflect the addition of a second qualified offsite power circuit. In addition, the proposed amendment requests approval to change the Updated Final Safety Analysis Report (UFSAR) to allow for the use of automatic load tap changers (LTCs) on the new (230 kilovolt (kV)) and the replacement (115 kV) startup transformers.

EEOB RAI-1

Section 3.3 of the LAR summarizes additional information the licensee generated to support the proposed change: (1) Grid Voltage Profile Summary (i.e., Grid Stability Study), (2) Steady State and Transient Load Flow Summaries, and (3) Short Circuit Analysis (i.e., Fault Analysis) Summary.

The reference section of the LAR does not list the actual calculations/analyses supporting this information. For example, calculation(s) that provide the basis for LAR Figure 3 is not identified. The staff requests this information to establish the basis for the summary results presented in the LAR.

Please provide a list of the calculations/analyses supporting the (Grid Stability Study), Steady State and Transient Load Flow Summaries/analysis, and Short Circuit Analysis (i.e., Fault Analysis) in Section 3.3 of the LAR, including document number, title, and revision number, etc.

EEOB RAI-2

Robinson was licensed to draft General Design Criteria (GDC) published in the in Federal Register on July 11, 1967, as described in the Robinson UFSAR Section 3.1 (ADAMS Accession No. ML17298A849). Robinson UFSAR Section 3.1.2.39, "Emergency Power," states, in part, that:

An emergency power source shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning of the

engineered safety features and protection systems required to avoid undue risk to the health and safety of the public. This power source shall provide this capacity assuming a failure of a single active components. (GDC 39).

NUREG-0800, the Standard Review Plan (SRP), Section 8.2 (ADAMS Accession No. ML100740246), Subsection III.1.E states in part that the NRC staff should evaluate the capacity and electrical characteristics of the offsite power system to ensure that there is adequate capability to supply the maximum connected load during all plant conditions.<sup>1</sup>

Section 3.3.1 of the LAR states in part that the automatic load tap changing transformers will compensate for the loss of nearby generation sources relied on for voltage support for Robinson. The LAR further states that the transmission system will be managed to ensure adequate Robinson switchyard voltage is maintained in per Figure 3 of the LAR, "Minimum Required Switchyard Voltage Profile Bounding Graph." Thus, with the addition of the load tap changers and changes in local generation sources, it appears that Figure 3 represents part of the design basis of the offsite power system, and thus it or equivalent information should be included in the UFSAR. However, Figure 3 was not included in the proposed UFSAR change sheets.

Please clarify whether information in Figure 3 of the LAR or its equivalent will be included in the UFSAR or explain why such information is not appropriately included in the UFSAR.

### EEOB RAI-3

Robinson UFSAR Section 3.1.2.39, "Emergency Power," states, in part, that:

An emergency power source shall be provided and designed with adequate independency, redundancy, capacity, and testability to permit the functioning of the engineered safety features and protection systems required to avoid undue risk to the health and safety of the public. This power source shall provide this capacity assuming a failure of a single active components. (GDC 39).

Section 8.2 Subsection III.1.E of the SRP states in part that the NRC staff should evaluate the preferred power source for each path ensure that there is adequate capability to supply the maximum connected load during all plant conditions. The design should also be examined to ensure that during transfer from one power source to another the design limits of equipment are not exceeded.

In Section 3.3.2.4 of the LAR, the licensee states, "In the normal or shutdown bus alignments and when EDG A or EDG B are running in parallel with an offsite power source for surveillance testing, the momentary short circuit ratings of E1/E2 switchgear, respectively, are exceeded. HBRSEP will implement changes to procedures prior to implementation of the transmission upgrade modifications in order to limit loads on the applicable emergency bus. Limiting loads on the applicable bus will bring the fault current within the duty cycle." The LAR did not discuss how the EDG test loading requirement in Robinson TS Surveillance Requirement 3.8.1.8 with power factor  $\leq 0.9$  will be met with the proposed limiting of loads on the applicable emergency buses E1/E2.

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<sup>1</sup> Section 8.2 Subsection III.1.E of the SRP provides guidance for evaluating conformance to 10 CFR 50, Appendix A, GDC 17, which is comparable to draft GDC 39. The NRC staff has used Section 8.2 Subsection III.1.E with due consideration.

Please provide a discussion on how EDG test loading requirements will be met when loads are limited and EDGs are running in parallel with an offsite power source.

EEOB RAI-4

In Section 3.3.3.7 of the LAR, the conclusion section for the Transient Load Flows Summary, the licensee states, “In bus alignments N2, N3, N5, and N6, the voltage excursions fell below the maximum DGVR pick-up voltage of 433 V. As such, it would be necessary to disable DGVR relay during RCP start as required in the existing plant configuration.”

However, bus alignment “N6” is not previously discussed in Section 3.3.3 of the LAR. For example bus alignment N6 is missing in the description of bus alignments in LAR Section 3.3.3 and from the discussion of bus transients – pump starts in Section 3.3.3.2 of the LAR. Therefore, the NRC staff is unable to review the licensee’s conclusion regarding bus alignment N6 in Section 3.3.3.7 of the LAR.

Please provide a discussion of bus alignment N6 sufficient to support the conclusion in LAR Section 3.3.3.7, including a description of the bus alignment N6 and applicable transients.