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August 1, 2018
Serial: RNP-RA/18-0050

10 CFR 50.90

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

H.B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
RENEWED LICENSE NO. DPR-23

**SUBJECT: RESPONSE TO SUPPLEMENTAL REQUEST FOR ADDITIONAL
INFORMATION REGARDING LICENSE AMENDMENT REQUEST PROPOSING
TO ADD A QUALIFIED OFFSITE CIRCUIT TO TECHNICAL SPECIFICATION
3.8.1, "AC SOURCES - OPERATING" AND THE USE OF LOAD TAP
CHANGERS IN THE AUTOMATIC MODE OF OPERATION ON THE STARTUP
TRANSFORMERS**

Ladies and Gentlemen:

By letter dated September 27, 2018, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17270A041), as supplemented by letters dated May 16 and July 11, 2018 (ADAMS Accession Nos. ML18137A353 and ML18192C179), Duke Energy Progress, LLC (Duke Energy), submitted a license amendment request for the H. B. Robinson Steam Electric Plant, Unit 2 (Robinson). 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 on the new 230 kilovolt (kV) and the replacement 115 kV startup transformers.

By email dated July 30, 2018, NRC staff informed Duke Energy that additional information is required to complete the review. The Duke Energy response to the request for additional information is in the enclosure to this letter.

In accordance with 10 CFR 50.91, "Notice for Public Comment; State Consultation," a copy of this letter is being provided to the designated South Carolina Officials.

If you should have any questions regarding this submittal, please contact Mr. Kevin Ellis, Manager - Regulatory Affairs, at 843-951-1329.

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I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 1, 2018.

Sincerely,

Ernest J. Kapopoulos, Jr.
Site Vice President

EJK/jrc

Enclosure: RESPONSE TO SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION
REGARDING LICENSE AMENDMENT REQUEST PROPOSING TO ADD A
QUALIFIED OFFSITE CIRCUIT TO TECHNICAL SPECIFICATION 3.8.1, "AC
SOURCES - OPERATING" AND THE USE OF LOAD TAP CHANGERS IN THE
AUTOMATIC MODE OF OPERATION ON THE STARTUP TRANSFORMERS

I declare under penalty of perjury that the foregoing is true and correct.

Executed on August 1, 2018.

Sincerely,

A handwritten signature in blue ink, appearing to read 'E. Kapopoulos', is written over the 'Sincerely,' text.

Ernest J. Kapopoulos, Jr.
Site Vice President

EJK/jrc

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cc (with Enclosure):

C. Haney, NRC Region II – Regional Administrator

J. Rotton, NRC Senior Resident Inspector – RNP

D. Galvin, NRR Project Manager – RNP

S. E. Jenkins, Chief, Bureau of Radiological Health (SC)

A. Wilson, Attorney General (SC)

ENCLOSURE

RESPONSE TO SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION
REGARDING LICENSE AMENDMENT REQUEST PROPOSING TO ADD A QUALIFIED
OFFSITE CIRCUIT TO TECHNICAL SPECIFICATION 3.8.1, "AC SOURCES - OPERATING"
AND THE USE OF LOAD TAP CHANGERS IN THE AUTOMATIC MODE OF OPERATION ON
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Background

By letter dated September 27, 2018, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17270A041), as supplemented by letters dated May 16 and July 11, 2018 (ADAMS Accession Nos. ML18137A353 and ML18192C179), Duke Energy Progress, LLC (Duke Energy), submitted a license amendment request (LAR) for the H. B. Robinson Steam Electric Plant, Unit 2 (Robinson). 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.

By email dated July 30, 2018, NRC staff informed Duke Energy that additional information is required to complete the review. The Duke Energy response to the request for additional information follows.

EEOB RAI-5

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.

LAR Section 3.3.3 includes summaries of transient voltage analyses for various plant configurations and grid transients with the new Startup transformer (SUT) load tap changer (LTC) in either the automatic or manual position. Section 3.3.3.6 provides a summary of the scenario designated Grid Transient - Plant Trip with Fast Bus Transfers to ensure that the 480 V degraded grid voltage relay (DGVR) and loss of voltage relay (LVR) do not time out. This section indicates that an analysis was performed with the LTC in the automatic position in the following statements:

"Transient Stability Analysis were performed for plant 100% power alignments (N1, N2, N3, N4, and N5). Multiple cases were analyzed for each bus alignment. One case was with the LTC in the automatic position.The Analysis performed with the LTC in automatic position used an initial time delay of half a second and an operating time delay of 2 seconds."

However, neither LAR Section 3.3.3.6 nor the July 11, 2018 Supplement discussed the results (or conclusions) of the transient analysis for this scenario with LTC in the automatic position. Applicable conclusions also do not appear to be in the transient analysis conclusion section of the LAR (LAR Section 3.3.3.7).

The NRC staff requests the licensee to provide a summary of the evaluation results from the transient analysis for the plant in 100% power alignments (N1, N2, N3, N4 and N5) with the new LTCs in the automatic position for the scenario "Grid Transient – Plant Trip with Fast Bus transfer," including whether the licensee evaluation of the transient analysis identified any adverse impacts on the DGVR and the LVR setpoints and any safety equipment used for operations.

Duke Energy Response

Transient Stability Analyses were performed for plant 100% power alignments (N1, N2, N3, N4, and N5) for the scenario "Grid Transient – Plant Trip with Fast Bus Transfer." Each of those bus alignments were evaluated with the LTCs in automatic. Acceptance criteria were that the E1/E2 bus voltage excursion would not result in the DGVR or LVR relays activating and timing out, resulting in transfer of the emergency busses to the onsite emergency power source, using the setpoints below:

- DGVR pickup voltage, adjusted for instrument uncertainty, of 437 V for the relay time of 9.5 seconds
- LVR pickup voltage of 360.8 V for relay time delay of 0.712 seconds

Satisfying the criteria above ensured there was no adverse impact on any safety equipment powered from emergency buses used by operations.

The Transient Stability Analyses with the LTCs in automatic for the five 100% power bus alignments evaluated for the scenario "Grid Transient – Plant Trip with Fast Bus transfer" demonstrated acceptable system response.