FENOC™
FirstEnergy Nuclear Operating Company

5501 North State Route 2
Oak Harbor, Ohio 43449

Brian D. Boles
Vice President,
Nuclear

419-321-7676
Fax: 419-321-7582

February 19, 2016
L-16-040

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

SUBJECT:
Davis-Besse Nuclear Power Station, Unit No. 1
Docket No. 50-346, License No. NPF-3
Response to Request for Additional Information Regarding
License Amendment Request to Revise Emergency Diesel Generator
Minimum Voltage and Frequency Surveillance Requirements (CAC No. MF6060)

By letter dated April 1, 2015 (Accession No. ML15091A143), as supplemented by letter dated October 14, 2015 (Accession No. ML15287A251), FirstEnergy Nuclear Operating Company (FENOC), submitted a license amendment request to amend the operating license for the Davis-Besse Nuclear Power Station, Unit No. 1. The proposed amendment would revise certain Technical Specification minimum voltage and frequency acceptance criteria for emergency diesel generator testing. The changes are necessary to address non-conservatism in the testing acceptance criteria.

By letter dated January 20, 2016 (ML16019A397), the Nuclear Regulatory Commission (NRC) staff requested additional information to complete its review of the license amendment. FENOC's response to this request is attached.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at 330-315-6810.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 19, 2016.

Sincerely,

Brian D. Boles

Brian D. Boles

Attachment: Response to January 20, 2016 Request for Additional Information

cc: NRC Region III Administrator
NRC Project Manager
NRC Resident Inspector
Executive Director, Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
Utility Radiological Safety Board

Attachment
L-16-040

Response to January 20, 2016 Request for Additional Information

By letter dated April 1, 2015, as supplemented by letter dated October 14, 2015, FirstEnergy Nuclear Operating Company (FENOC), submitted a license amendment request for Nuclear Regulatory Commission (NRC) staff review and approval. By letter dated January 20, 2016, the NRC staff requested additional information to complete its review of the license amendment. Each request for additional information is presented below in bold type, and is followed by the FENOC response.

1. **Transient analysis programs typically use a constant voltage at a generation source to establish a voltage profile in the auxiliary power system during system perturbations. The excerpts from MPR Calculation 0200-0087-RP01 provided with the October 14, 2015, letter, indicate that 4088 V was assumed at the EDG terminals for the analysis. Confirm that this parameter was held constant to evaluate:**

   a) The 4070 V setpoint established for breaker closure permissive.

   Response:

   The emergency diesel generator (EDG) voltage setpoint of 4088 volts alternating current (VAC) was held constant in the referenced EDG transient analysis. However, this analysis does not evaluate the 4070 VAC setpoint (3990 VAC plus 2 percent tolerance) established for the EDG breaker closer permissive relay. The analysis assumes the nominal setpoint of the EDG voltage permissive relay is 3990 VAC at the time the EDG output breaker closes. The tolerance of the EDG breaker closure permissive relay is not discussed in the analysis because its impact on the voltage and frequency response during transient loading is insignificant.

   b) The response of the EDG during the load sequencing process, starting at time of breaker closure when the voltage regulator is trying to maintain 4088 V at EDG terminals.

   Response:

   The EDG voltage setpoint of 4088 VAC was held constant in the referenced EDG transient analysis. The analysis evaluates the response of the EDG during the load sequencing process. The analysis evaluates the transient voltage and frequency response while the EDG voltage regulator is trying to maintain 4088 VAC at the EDG terminals during the load sequencing process. However, the EDG voltage is still building in the analysis to its setpoint of 4088 VAC when its output breaker closes at its nominal permissive setpoint of approximately 3990 VAC.

2. **Provide the procedurally controlled setpoint for EDG output voltage for the emergency mode of operation.**

   Response:

   As stated in the EDG 1 and EDG 2 monthly surveillance test procedures, plant operators verify the EDG output voltage is 4200 to 4250 Volts (V).

3. **The October 14, 2015, response to RAI 3 states: "The operating procedure requires a voltage between 4200 V and 4250 V on the bus prior to manually starting the motor driven feedwater pump (MDFP)." Clarify if the procedure requires EDG mode of operation changed from "emergency" mode to "droop" mode to vary output.**

   Response:

   Since the MDFP operating procedure does not provide steps to vary the EDG output voltage if the bus voltage is outside the 4200 V to 4250 V range, the operating procedure does not require the EDG mode of operation to be changed from emergency mode to droop mode.

   Inconsistencies were identified between the MDFP normal operating procedure and the emergency procedure that would start the MDFP. Requirements for loading the MDFP onto a diesel powered bus are being evaluated to ensure appropriate changes are made to the procedures. This issue was entered into the FENOC corrective action program.