



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

January 2, 2018

Ms. Tanya M. Hamilton  
Site Vice President  
Shearon Harris Nuclear Power Plant  
5413 Shearon Harris Road  
M/C HNP01  
New Hill, NC 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – REQUEST  
FOR ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT  
REQUEST PROPOSING CHANGES TO EMERGENCY DIESEL GENERATOR  
TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS  
(CAC NO. MF9828; EPID L-2017-LLA-0244)

Dear Ms. Hamilton:

By application dated June 5, 2017 (Agencywide Documents Access and Management System Accession No. ML17156A216), Duke Energy Progress, LLC (the licensee) submitted a license amendment request for the Shearon Harris Nuclear Power Plant, Unit 1 (HNP), requesting changes to the HNP Technical Specifications. The changes would restrict the steady-state voltage and frequency limits for emergency diesel generator (EDG) operation to ensure that accident mitigation equipment can perform as designed. The proposed changes would also increase the voltage limit for the EDG full load rejection test.

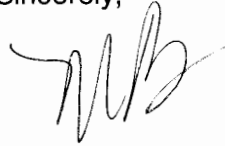
The U.S. Nuclear Regulatory Commission staff has determined that additional information is needed in order to complete its review. The enclosed request for additional information was e-mailed to the licensee in draft form on December 7, 2017, and the licensee determined it did not need a clarification call. However, a 45-day response date was requested. Please note that if a response to this letter is not received by January 22, 2018, or an acceptable alternate date is not provided in writing, we may deny the application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Part 2, Section 108, "Denial of application for failure to supply information."

T. Hamilton

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If you have any questions, please contact me at 301-415-2760 or by e-mail to [Martha.Barillas@nrc.gov](mailto:Martha.Barillas@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to be 'MB' with a stylized flourish.

Martha Barillas, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosure:  
Request for Additional Information

cc: Listserv

DUKE ENERGY PROGRESS, LLC  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
DOCKET NUMBER 50-400  
REQUEST FOR ADDITIONAL INFORMATION  
REGARDING A LICENSE AMENDMENT REQUEST PROPOSING CHANGES TO  
EMERGENCY DIESEL GENERATOR TECHNICAL SPECIFICATION  
SURVEILLANCE REQUIREMENTS  
CAC NUMBER MF9828  
EPID L-2017-LLA-0244

By Letter dated June 5, 2017 (Agencywide Documents Access management System Accession No. ML17156A216), Duke Energy Progress, LLC (the licensee) requested an amendment to Shearon Harris Nuclear Power Plant, Unit 1 (HNP). The proposed amendment would revise the Technical Specification (TS) Surveillance Requirements (SRs). SR 4.8.1.1.2.a.4, SR 4.8.1.1.2.e, SR 4.8.1.1.2.f.2, SR 4.8.1.1.2.f.4.b, SR 4.8.1.1.2.f.6.b, and SR 4.8.1.1.2.f.14 would restrict the steady-state voltage and frequency limits for emergency diesel generator (EDG) operation from plus or minus 10% of the nominal EDG voltage ( $6900 \pm 690$  volts) to plus or minus 4% of the nominal EDG voltage ( $6900 \pm 276$  volts), and frequency limit from plus or minus 0.8% of the nominal frequency ( $60 \pm 0.48$  hertz), to plus or minus 2% of the nominal frequency ( $60 \pm 1.2$  hertz). The licensee also requests to revise TS SR 4.8.1.1.2.f.11 to increase the voltage limit for the EDG full load rejection test from 110% to 120%.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined the following request for additional information (RAI) is needed in order to complete its review.

**Regulatory Requirements**

Title 10 of the *Code of Federal Regulations*, Appendix A of Part 50, General design criterion (GDC) 17, "Electric power systems," requires, in part, that an onsite electric power system and an offsite electric power system be provided to permit functioning of structures, systems, and components important to safety. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents. The onsite electric power supplies shall have sufficient independence, redundancy, and testability to perform their safety functions assuming a single failure.

Appendix A of 10 CFR Part 50, GDC 18, "Inspection and testing of electric power systems," requires that electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features, such as wiring, insulation, connections, and switchboards, to assess the continuity of the systems and the condition of their components. The systems shall be designed with a capability to test periodically (1) the operability and functional performance of the components of the systems, such as onsite power sources, relays, switches, and buses, and (2) the operability of the systems as a whole and, under

Enclosure

conditions as close to design as practical, the full operation sequence that brings the systems into operation, including operation of applicable portions of the protection system, and the transfer of power among the nuclear power unit, the offsite power system, and the onsite power system.

### **EEOB RAI 1**

Section 2.0, "Detail Description," of the license amendment request states:

"SR 4.8.1.1.2.f.2 verifies that during shutdown, on a rejection of a load of greater than or equal to 1078 kilowatts (kW), the EDG will maintain a voltage of  $6900 \pm 690$  volts and frequency of  $60 \pm 6.75$  Hz, with frequency stabilizing to  $60 \pm 1.2$  Hz within 10 seconds without any safety-related load tripping out or operating in a degraded condition. This SR is being revised to limit the frequency stabilizing value to  $60 \pm 0.48$  Hz within 10 seconds without any safety-related load tripping out or operating in a degraded condition."

The NRC staff notes that the proposed changes to SR 4.8.1.1.2.f.2 only change the frequency values and not the voltage values. SR 4.8.1.1.2.f.2 keeps plus or minus 10% of the nominal voltage ( $6900 \pm 690$  volts) instead of the plus or minus 4% of the nominal EDG voltage ( $6900 \pm 276$  volts), as proposed in the license amendment request.

Please provide a discussion addressing this discrepancy. In your discussion, provide a summary of the analysis that demonstrates the steady-state voltage values of plus or minus 10% of the nominal voltage ( $6900 \pm 690$  volts) is acceptable to SR 4.8.1.1.2.f.2 while only the frequency is changed in the proposed revision to the SR.

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TECHNICAL SPECIFICATIONS SURVEILLANCE REQUIREMENTS  
(CAC NO. MF9828; EPID L-2017-LLA-0244) DATED JANUARY 2, 2018

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**ADAMS Accession No. ML17360A013**

\*by e-mail

<b>OFFICE</b>	NRR/DORL/LPL2-2/PM	NRR/DORL/LPL2-2/LA	NRR/DE/EEOB/BC*
<b>NAME</b>	MBarillas	BClayton	JQuichocho
<b>DATE</b>	01/02/2018	12/29/2017	12/06/2017
<b>OFFICE</b>	NRR/DORL/LPL2-2/BC	NRR/DORL/LPL2-2/PM	
<b>NAME</b>	UShoop (RSchaaf for)	MBarillas	
<b>DATE</b>	01/02/2018	01/02/2018	

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