

From: [Hon. Andrew Murray, William R. \(Bill\) \(Bill.Murray@duke-energy.com\) \(Bill.Murray@duke-energy.com\)](#)
To: [Shoop, Undine](#)
Cc: [Shoop, Undine](#)
Subject: Brunswick Unit 1 and Unit 2 Request for Additional Information related the Emergency Amendment Request for One-Time Extension of EDG Completions Time
Date: Friday, November 24, 2017 11:09:00 AM

In a letter dated [November 22, 2017](#), (Agencywide Documents Access and Management System (ADAMS) Accession Nos. [ML17326B619](#)), Duke Energy Progress (the licensee) requested the subject amendment to Operating Licenses OLs DPR-71 and DPR-62.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and has determined that additional information is required to complete the review. The specific information requested is attached. The proposed questions related to containment review were discussed by telephone with your staff on [November 24, 2017](#). Your staff confirmed that the request for additional information (RAI) [below](#):

1. was understood,
2. [does not contain sensitive information](#), and
3. you will provide a response in [today](#) after receiving this request.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. Please note that if you do not respond to this request by the agreed-upon date or provide an acceptable alternate date, we may deny your application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108. If circumstances result in the need to revise the agreed upon response date, please contact me.

Andy Hon, PE

Project Manager (Brunswick Nuclear Plant 1 & 2, Sequoyah Nuclear Plant 1 & 2)

Plant Licensing Branch II-2

Division of Operating Reactor Licensing

Office of Nuclear Reactor Regulation

301-415-8480

OWFN 08E06

Mail Stop 08B1A

andrew.hon@nrc.gov

-

Request for Additional Information

-

Electrical Engineering Operating Reactors (EEOB) Branch

Branch Technical Position BTP 8-8 (mainly written for a single unit plant) does not require an accident to be considered during a AOT, but requires to consider a Loss of Offsite Power (LOOP) along with a single failure which could lead to an Station Blackout (SBO). The plant should be able to achieve cold shutdown. In a dual unit plant, we need to evaluate LOOP in both units and a [single failure in each unit](#). To meet the intent of BTP 8-8 for a dual unit plant - please discuss the sequence of events, and the loadings of SUPP-DG and the remaining EDG, under the following scenarios, to achieve cold shutdown of both units:

(1) LOOP in both units, EDG #4 (Unit 2) on maintenance, EDG #3 (Unit 2) fails - single failure in Unit 2; EDG #1 (Unit 1) fails – single failure in Unit 1 [Only SUPP-DG and EDG #2 available]

(2) LOOP in both units, EDG #4 (Unit 2) on maintenance, EDG #3 (Unit 2) fails - single failure in Unit 2; EDG #2 (Unit 1) fails – single failure in Unit 1 [Only SUPP- DG and EDG #1 available]

Mechanical Engineering and Inservice Testing (EMIB) Branch

The licensee is requesting to suspend monthly testing of EDGs 1, 2, and 3 per Surveillance Requirements (SR) 3.8.1.2, SR 3.8.1.3, and SR 3.8.1.6 for EDGs 1, 2, and 3 during the proposed extended completion times. For each EDG, provide the last date the surveillances were performed, and when the next surveillances are scheduled. To evaluate the common cause potential and extent of condition, please provide following additional information:

- (a) the manufacturer and model number for the emergency diesel generators (EDGs).
- (b) In Section 2.3 it is stated, “This crankshaft bow is believed to have occurred over several years of normal EDG operation, with low levels of bearing heating causing the bowed condition.” Expand on this statement and explain how low levels of bearing heating can cause a bowed crankshaft.
- (c) State whether any connecting rods were examined, and if so, state the results of the inspections.
- (d) Provide the dates for the last measurements of crankshaft runout for each of the EDGs (for EDG 4, prior to the latest measurement of 0.010 inches), and provide the measurements. Also provide the manufacturer’s maximum allowable crankshaft runout.
- (e) State whether EDGs 1, 2, and 3, have had an overspeed and overload condition in the past, similar to EDG 4.
- (f) Discuss the vibration data for EDG 4 for the past four years, and compare it to the vibration data for EDGs 1, 2 and, 3 for the past four years..
- (g) Provide any similar operating experience, similar to EDG 4, for the same make and model EDGs in the non-nuclear industry.
- (h) It is stated in Sections 2.1 and 3.3 that the SUPP-DG fuel oil tank has a capacity greater or equal to a 24-hour supply, and each of the two permanently installed FLEX diesels has an integral 526 gallon sub-base fuel tank. Discuss how the fuel oil supply for these diesels will be replenished if required during the requested Completion Time extension period.