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

October 27, 2016

Mr. William R. Gideon
Site Vice President
Brunswick Steam Electric Plant
8470 River Rd. SE
M/C BNP001
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2 – SUPPLEMENTAL INFORMATION NEEDED FOR ACCEPTANCE OF LICENSE AMENDMENT REQUEST REGARDING CORE FLOW OPERATING RANGE EXPANSION (CAC NOS. MF8363 AND MF8364)

Dear Mr. Gideon:

By letter dated September 6, 2016 (Agencywide Documents Access and Management System Accession No. ML16271A187), Duke Energy submitted a license amendment request for the Brunswick Steam Electric Plant, Unit Nos. 1 and 2. The proposed amendment request would revise Technical Specifications (TSs) 3.1.7, 3.3.1.1, 3.4.1, and 5.6.5; add a new TS 5.6.7; and add a new condition to Appendix B of the Renewed Facility Operating Licenses, to support an expansion of the core power-flow operating range (i.e., Maximum Extended Load Line Limit Analysis Plus (MELLLA+)). The purpose of this letter is to provide the results of the U.S. Nuclear Regulatory Commission (NRC) staff's acceptance review of this amendment request. The acceptance review was performed to determine if there is sufficient technical information in scope and depth to allow the NRC staff to complete its detailed technical review. The acceptance review is also intended to identify whether the application has any readily apparent information insufficiencies in its characterization of the regulatory requirements or the licensing basis of the plant.

Consistent with Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), an amendment to the license (including the TSs) must fully describe the changes requested, and following as far as applicable, the form prescribed for original applications. Section 50.34 of 10 CFR addresses the content of technical information required. This section stipulates that the submittal address the design and operating characteristics, unusual or novel design features, and principal safety considerations.

The NRC staff has reviewed your application and concluded that the information delineated in the enclosure to this letter is necessary to enable the staff to make an independent assessment regarding the acceptability of the license amendment request in terms of regulatory requirements and the protection of public health and safety and the environment.

In order to complete its review, the NRC staff requests that you supplement the application to address the information requested in the enclosure by November 11, 2016. This will enable the NRC staff to begin its detailed technical review. If the information responsive to the NRC staff's request is not received by November 11, 2016, the application will not be accepted for review pursuant to 10 CFR 2.101, and the NRC will cease its review activities associated with the

application. If the application is subsequently accepted for review, you will be advised of any further information needed to support the staff's detailed technical review by separate correspondence.

The information requested and associated timeframe in this letter were discussed with your staff on October 19, 2016.

In addition, as we discussed with your staff at the separate audit entrance meeting on October 19. 2016, the NRC staff anticipates the backup analysis data be available under the audit process to enable the NRC to create a plant-specific computer model (TRACE). The sensitivity analyses performed with this model will enable the NRC staff to focus our review efforts. Accordingly, our final resources and schedule estimate will be contingent upon the timely availability of the plant-specific input data.

If you have any questions, please contact me (301) 415-8480 or Andrew.Hon@nrc.gov.

Sincerely,

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

Docket Nos. 50-325 and 50-324

Enclosure:
Supplemental Information Needed

cc w/encl: Distribution via Listserv

SUPPLEMENTAL INFORMATION NEEDED

LICENSE AMENDMENT REQUEST

DUKE ENERGY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2

DOCKET NOS. 50-325 AND 50-324

In order for the U.S. Nuclear Regulatory Commission (NRC) staff to ensure that with the implementation of Maximum Extended Load Line Limit Analysis Plus (MELLLA+), the operations of the Brunswick Steam Electric Plant, Unit Nos. 1 and 2, will continue to be consistent with General Design Criteria 10 and 12, the applicable acceptance criteria discussed in Chapter 15 of the Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants (NUREG-0800), and the anticipated transient without scram (ATWS) criteria discussed in the approved MELLLA+ Licensing Topical Report, please provide the following information:

1. Appropriate disposition for Limitation and Condition (L&C) 9.5 – Safety Limit Minimum Critical Power Ratio 2, Duke Energy should address experience with AREVA methods in MELLLA+ at high power to flow conditions.

2. Appropriate disposition for L&C 9.23 – MELLLA+ Eigenvalue Tracking. This explanation should address how the use of AREVA methods that are not covered by the General Electric-Hitachi letter will clarify L&C 9.23.

3. Differences between Unit Nos. 1 and 2 that can affect the analysis assumptions needed to be discussed for dual-unit review and approval.

4. ATWS instability (ATWS-I) analysis with Unit No. 2 specific assumptions. (Because of the significant differences in turbine bypass capacities between Unit Nos. 1 and 2 and the potential impact it can have on the competing effects that can lead to the results being more limiting at higher or lower turbine bypass capacities, the NRC staff needs the ATWS-I analysis with Unit No. 2 specific assumptions to conduct its review.)

Enclosure

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Sincerely,

/RA/

Andrew Hon, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
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Supplemental Information Needed

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