



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

May 15, 2018

Mr. William R. Gideon, Vice President
Brunswick Steam Electric Plant
Duke Energy Progress, LLC
8470 River Rd., SE (M/C BNP001)
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 – SUPPLEMENTAL INFORMATION NEEDED FOR ACCEPTANCE OF REQUESTED LICENSING ACTION RE: AMENDMENT REQUEST TO REVISE THE TECHNICAL SPECIFICATIONS TO RELOCATE THE PRESSURE-TEMPERATURE LIMIT CURVES TO A PRESSURE AND TEMPERATURE LIMITS REPORT (EPID L-2018-LLA-0094)

Dear Mr. Gideon:

By letter dated April 4, 2018, Duke Energy Progress, LLC (Duke Energy) submitted a license amendment request for Brunswick Steam Electric Plant, Units 1 and 2 (Brunswick). The proposed amendment to the Brunswick Technical Specifications (TSs) would revise and relocate the Pressure Temperature Limit Curves to a licensee-controlled Pressure and Temperature Limits Report. The request was submitted in accordance with guidance provided in U.S. Nuclear Regulatory Commission (NRC) Generic Letter 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996.

The purpose of this letter is to provide the results of the 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 proposed amendment in terms of regulatory requirements and the protection of public health and safety and the environment.

In order to make the application complete, the NRC staff requests that Duke Energy supplement the application to address the information requested in the enclosure by June 1, 2018. 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 the above date, 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 time frame in this letter were discussed with Mark Turkal of your staff on May 14, 2018.

If you have any questions, please contact the Project Manager, Dennis Galvin, at 301-415-6256 or Dennis.Galvin@nrc.gov.

Sincerely,



Dennis J. Galvin, 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:
As stated

cc: Listserv

SUPPLEMENTAL INFORMATION NEEDED

AMENDMENT REQUEST TO REVISE THE TECHNICAL SPECIFICATIONS TO RELOCATE
THE PRESSURE-TEMPERATURE LIMIT CURVES TO A PRESSURE AND TEMPERATURE

LIMITS REPORT

DUKE ENERGY PROGRESS, LLC

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

By letter dated April 4, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18094B058), Duke Energy Progress, LLC (Duke Energy) submitted a license amendment request (LAR) for Brunswick Steam Electric Plant, Units 1 and 2 (Brunswick). The proposed amendment to the Brunswick Technical Specifications (TSs) would revise and relocate the Pressure Temperature (PT) Limit Curves to a licensee-controlled Pressure and Temperature Limits Report (PTLR). The request was submitted in accordance with guidance provided in U.S. Nuclear Regulatory Commission (NRC) Generic Letter (GL) 96-03, "Relocation of the Pressure Temperature Limit Curves and Low Temperature Overpressure Protection System Limits," dated January 31, 1996.

In accordance with GL 96-03, Attachment 1, to implement a PTLR, requesting licensees are required, among other things, to propose to (1) use an NRC-approved methodology to develop the PTLR, (2) describe how the neutron fluence is calculated, and (3) provide the neutron fluence values that are used in the adjusted reference temperature calculation.

Duke Energy proposes to incorporate Boiling Water Reactor Owners' Group (BWROG) Licensing Topical Report BWROG-TP-11-022-A, Revision 1, "Pressure Temperature Limits Report Methodology for Boiling Water Reactors" (ADAMS Accession No. ML13277A557) into the new TS Section 5.6.7, to describe the previously reviewed and approved analytical methods used to determine the PT Limits. Regarding the reactor vessel neutron fluence, Table 1-1 of BWROG-TP-11-022-A, Revision 1, states that fluence methods and results must comply with Regulatory Guide (RG) 1.190, "Calculational and Dosimetry Methods for Determining Pressure Vessel Neutron Fluence," March 2001 (ADAMS Accession No. ML010890301), and have NRC approval for use with this licensing topical report. LAR Enclosure Attachment 1, Section 3.2, "Technical Analysis," subsection titled "Neutron Fluence Calculations," explains that the fluence calculations were updated using an NRC-approved methodology in accordance with RG 1.190. However, the LAR does not indicate the method used or otherwise provide information demonstrating conformance with BWROG-TP-11-022-A, Revision 1. The neutron fluence values that are used in the adjusted reference temperature calculation are included in LAR Enclosure Attachment 1, Section 3.2.

LAR Enclosure Section 3.1 discusses the amendments (ADAMS Accession No. ML031690683), issued on June 18, 2003, that approved the current Brunswick PT Limits for 32 effective full-power years and the associated vessel fluence methodology. The proposed PTLR in LAR Enclosure Attachment 6, in Section 3.0 "Methodology," indicates that the neutron fluence is calculated in accordance with RG 1.190 as documented in Westinghouse Report,

WCAP-17660-NP, Revision 0, "Neutron Exposure Evaluations for Core Shroud and Pressure Vessel Brunswick Units 1 and 2," November 2012. However, WCAP-17660-NP has not been submitted to the NRC.

The LAR does not clearly identify what NRC-approved neutron fluence methodology will be used with the PTLR in accordance with GL 96-03 and BWROG-TP-11-022-A, Revision 1. The LAR does not describe how the neutron fluence is calculated in accordance with GL 96-03. Duke Energy is requested to submit WCAP-17660-NP, or otherwise provide information that identifies the NRC-approved neutron fluence methodology used to develop the PTLR and that fully describes how the neutron fluence is calculated in accordance with RG 1.190.

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*by e-mail

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