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

May 14, 2025

Mr. John A. Krakuszeski
Site 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, UNIT 1 - REQUEST TO USE A PROVISION OF A LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE, SECTION XI (EPID L-2025-LLR-0019)

Dear Mr. Krakuszeski:

By letter dated February 6, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25037A163), as supplemented by letter dated February 10, 2025 (ML25041A317), Duke Energy Carolinas, LLC (the licensee) requested to use certain portions of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME B&PV Code), Section XI during the remainder of the fifth inservice inspection interval of Brunswick Steam Electric Plant, Unit 1.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv), the licensee submitted a request to utilize the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C, subject to conditions in 50.55a(b), for analytical evaluation of flaws in piping.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concluded, as set forth in the enclosed safety evaluation, that the use of Nonmandatory Appendix C of the 2021 Edition of the ASME B&PV Code, Section XI, subject to conditions in 50.55a(b), for the analytical evaluation of flaws in piping is acceptable. Accordingly, the NRC staff concluded that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff verbally approved this request on February 12, 2025 (ML25043A229), for the remainder of the fifth inservice inspection interval (ISI) at Brunswick Steam Electric Plant, Unit 1, which is scheduled to end on May 10, 2028.

If you have any questions, please contact the Project Manager at (301) 415-1380 or by email at Blake.purnell@nrc.gov.

Sincerely,

DAVID WRONA

Digitally signed by DAVID WRONA
Date: 2025.05.14 12:50:18 -04'00'

David Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-325

Enclosure:
Safety Evaluation

cc: Listserv

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO USE PROVISION OF LATER EDITION OF

ASME CODE, SECTION XI

DUKE ENERGY PROGRESS, LLC

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

DOCKET NO. 50-325

EPID: L-2025-LLR-0019

1.0 INTRODUCTION

By letter dated February 6, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25037A163), as supplemented by letter dated February 10, 2025 (ML25041A317), Duke Energy Carolinas, LLC (the licensee) requested to use certain portions of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME B&PV Code), Section XI during the remainder of the fifth inservice inspection (ISI) interval of Brunswick Steam Electric Plant (Brunswick), Unit 1.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv), the licensee submitted a request to utilize the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C, subject to conditions in 50.55a(b), for analytical evaluation of flaws in piping.

On February 12, 2025 (ML25043A229) via teleconference, the NRC verbally approved the use of the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C, subject to conditions in 50.55a(b), for the remainder of the Brunswick, Unit 1 fifth ISI interval. This safety evaluation documents the technical basis for the NRC's verbal approval.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(a)(1)(ii), the ASME B&PV Code, Section XI from the 1974 Edition through the 2021 Edition have been approved for incorporation by reference but limited to those provisions identified in paragraph (b)(2) of Section 50.55a.

Pursuant to 10 CFR 50.55a(g)(4)(iv), inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (a) of Section 50.55a, subject to the conditions listed in paragraph (b) of Section 50.55a, and subject to Commission approval. Portions of editions or

addenda may be used, provided that all related requirements of the respective editions or addenda are met.

3.0 TECHNICAL EVALUATION

3.1 Component Affected

All pressure-retaining piping and components described in the 2021 Edition of ASME Boiler and Pressure Vessel Code, Section XI, Nonmandatory Appendix C.

3.2 Applicable Code Edition and Addenda

The code of record for the fifth ISI interval is the 2007 Edition with 2008 Addenda of the ASME Code, Section XI.

3.3 Duration of Request

The request is for the remainder of the fifth ISI interval which commenced on May 11, 2018, and is scheduled to end on May 10, 2028.

3.4 Request and Basis for Request

The licensee requested to utilize the requirements of the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C which expands the applicability of analytical flaw evaluation procedures related to updated material property parameters.

3.5 NRC Staff Evaluation

The NRC staff has evaluated this request pursuant to 10 CFR 50.55a(g)(4)(iv). The NRC staff's evaluation focused on whether: (1) the subsequent editions and addenda of the ASME B&PV Code as requested for use is incorporated by reference in paragraph (a) of Section 50.55a, (2) the Code requirements subject to the conditions listed in paragraph (b) of Section 50.55a are met, (3) a request is submitted for the NRC approval, and (4) all related requirements of the respective editions and addenda are met. The NRC staff finds that if these four criteria are met, the requirements of 10 CFR 50.55a(g)(4)(iv) will also be met.

In evaluating the licensee's request (i.e., utilize Nonmandatory Appendix C from the 2021 Edition of the ASME B&PV Code, Section XI), the NRC staff confirmed that:

1. The 2021 Edition of the ASME B&PV Code, Section XI as requested for use, is incorporated by reference in 10 CFR 50.55a, and subject to conditions in paragraph (b)(2) of Section 50.55a.

2. There are no applicable provisions in 10 CFR 50.55a for the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C.

3. This submittal serves as the licensee's request for NRC approval to use the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C for analytical evaluation of flaws in piping.

4. The licensee has acknowledged that when the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C is used, the 2021 Edition of any other parts of the ASME B&PV Code that are referenced within Nonmandatory Appendix C will also be used.

Based on the above, the NRC staff determines that each of the four regulatory requirements for use of certain portions of later editions and addenda of the Code have been met, and that use of the 2021 Edition of the ASME B&PV Code, Section XI, Nonmandatory Appendix C during the remainder of the fifth ISI interval is acceptable.

4.0 CONCLUSION

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concluded, that the use of Nonmandatory Appendix C of the 2021 Edition of the ASME B&PV Code, Section XI, subject to conditions in 50.55a(b), for the analytical evaluation of flaws in piping is acceptable. Accordingly, the NRC staff concluded that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv). Therefore, the NRC staff verbally approved this request on February 12, 2025 (ML25043A229), for the remainder of the fifth ISI interval at Brunswick Steam Electric Plant, Unit 1, which is scheduled to end on May 10, 2028.

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