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

June 4, 2026

Mr. Jonathan Huecker
Site Vice President
Catawba Nuclear Station
Duke Energy Carolinas, LLC
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 – AUTHORIZATION OF PROPOSED ALTERNATIVE RA-26-0110 FOR EXTENSION OF THE FOURTH ISI INTERVAL FOR NUCLEAR SERVICE WATER PUMP WELDED ATTACHMENTS AND SEISMIC SUPPORTS (EPID L-2026-LLR-0033)

Dear Mr. Huecker:

By letter dated May 12, 2026, Duke Energy Carolinas, LLC (Duke Energy, the licensee) submitted a relief request (RA-26-0110) proposing an alternative pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(z)(2) for the Catawba Nuclear Station (Catawba), Units 1 and 2. The licensee's proposed alternative requests a one-time, six-month extension of the Fourth Inservice Inspection (ISI) interval for American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI visual examinations of Nuclear Service Water system pump welded attachments and seismic supports, extending the Fourth ISI interval end date from June 28, 2026, to December 31, 2026.

The licensee indicated that system configuration and access limitations create an operational hardship and unusual difficulty for timely performance of the required ASME Code, Section XI visual examinations by the current ISI interval end date. Accordingly, pursuant to 10 CFR 50.55a(z)(2), the licensee requested authorization to delay its compliance with the ASME Code ISI interval end date by six months on the basis that compliance with the requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's proposed alternative and concludes, as set forth in the enclosed safety evaluation, that the licensee's proposed alternative meet the provisions of 10 CFR 50.55a(z)(1), rather than 10 CFR 50.55a(z)(2) as requested by the licensee. The NRC staff finds that the use of licensee's proposed alternative provides acceptable level of quality and safety for the affected components during the extended Fourth ISI interval. Therefore, the NRC staff authorizes the use of proposed alternative RA-26-0110 as requested in the licensee's letter dated May 12, 2026.

All other requirements in ASME Code, Section XI for which relief or an alternative were not specifically requested and approved as part of this subject request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact Shawn Williams, Senior Licensing Project Manager, at Shawn.Williams@nrc.gov.

Sincerely,

MICHAEL MARKLEY

Digitally signed by MICHAEL MARKLEY
Date: 2026.06.04 08:19:04 -04'00'

Michael T. Markley, Branch Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos.
50-413, 50-414

Enclosure:
Safety Evaluation

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

AUTHORIZATION OF ALTERNATIVE NO. RA-26-0110

FOR FOURTH INSERVICE INSPECTION INTERVAL EXTENSION

DUKE ENERGY CAROLINAS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 and 50-414

1.0 INTRODUCTION

By letter dated May 12, 2026 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML26132A155), Duke Energy Carolinas, LLC (the licensee) submitted a relief request (RA-26-0110) proposing an alternative pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(z)(2) for the Catawba Nuclear Station, Units 1 and 2 (Catawba). The licensee's proposed alternative requests a one-time, six-month extension of the Fourth Inservice Inspection (ISI) interval for American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI visual examinations of Nuclear Service Water (RN) system pump welded attachments and seismic supports, extending the interval end date from June 28, 2026, to December 31, 2026, due to operational hardship associated with system configuration and access limitations.

Pursuant to 10 CFR 50.55a(z)(2), the licensee requested to use a proposed alternative on the basis that strict compliance with the specified ASME Code, Section XI requirements during the current ISI interval would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Although the licensee requested authorization under 10 CFR 50.55a(z)(2), the U.S. Nuclear Regulatory Commission (NRC) staff finds that the technical justification provided by the licensee supports approval under 10 CFR 50.55a(z)(1). Specifically, the NRC staff determined that the technical basis—supported by plant-specific examination results, engineering evaluations, structural analysis margins, and operating experience—provides an acceptable level of quality and safety without reliance on hardship considerations. Therefore, authorization under 10 CFR 50.55a(z)(1) is appropriate.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a, "Codes and standards," incorporate by reference the ASME Code, Section XI, for ISI of nuclear power plant components.

Specifically, 10 CFR 50.55a(g)(4)(ii) requires that inservice examinations and tests conducted during successive 120-month ISI intervals comply with the requirements of the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(a), subject to the conditions listed in 10 CFR 50.55a(b), no more than 18 months before the start of the interval.

The NRC regulations in 10 CFR 50.55a(z), "Alternatives to codes and standards requirements," state:

> Alternatives to the requirements of 10 CFR 50.55a(b) through (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation. A proposed alternative must be submitted and authorized prior to implementation. The applicant or licensee must demonstrate that:
>
> (1) "Acceptable level of quality and safety." The proposed alternative would provide an acceptable level of quality and safety; or
>
> (2) "Hardship without a compensating increase in quality and safety." Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

For this request, the NRC staff evaluated the licensee's proposed alternative under 10 CFR 50.55a(z)(1), which authorizes alternatives that provide an acceptable level of quality and safety.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Proposed Alternative

The licensee has requested authorization to use a proposed alternative that would allow a one-time, six-month extension of the Fourth ISI interval for visual examinations of RN system pump welded attachments and seismic supports at Catawba. Specifically, the relief request proposes extension of the Fourth ISI interval end date from June 28, 2026, to December 31, 2026, for completion of the required ASME Code, Section XI visual examinations of the affected components.

For the Fourth ISI interval, the applicable Code of Record at Catawba is the ASME Code, Section XI, 2007 Edition with 2008 Addenda. The ASME Code, Section XI visual examinations of the ASME Class 3 pump welded attachments and seismic supports for RN pumps at Catawba are required to be performed during each ISI interval. These visual examinations are specified in the ASME Code, Section XI, Subsection IWD, Table IWD-2500-1, Examination Category D-A, Item Number D1.30 for the pump welded attachments, and the ASME Code, Section XI, Subsection IWF, Table IWF-2500-1, Examination Category F-A, Item Number F1.40 for the seismic supports.

3.2 NRC Staff Evaluation

The NRC staff reviewed the licensee's proposed alternative to extend the Fourth ISI interval for completion of the required ASME Code, Section XI visual examinations of the ASME Class 3 pump welded attachments and seismic supports pursuant to 10 CFR 50.55a(z)(1). The NRC staff evaluation considered whether the use of the licensee's proposed alternative provides an

acceptable level of quality and safety for the affected components during the extended Fourth ISI interval.

The NRC staff reviewed Section 4.0 of the enclosure and the drawings for lateral restraints on the RN pumps provided in Attachments 1 and 4 to the licensee's proposed alternative RA-26-0110. The NRC staff confirms that Catawba has a total of four RN pumps -1A and 1B for Catawba, Unit 1, and 2A and 2B for Unit 2, and that each RN pump consists of ten seismic supports in addition to the pump baseplate support on the RN Pumphouse operating floor. The NRC staff noted that several welded attachments and seismic supports (e.g., seismic supports #4 and #9) are located below the waterline when the RN pits are aligned to the standby nuclear service water pond. As a result, the required VT-1 and VT-3 visual examinations must be performed underwater. These visual examinations are conducted by qualified divers who demonstrate visual acuity and follow Code-compliant procedures, ensuring that underwater conditions do not reduce examination quality. The NRC staff also observed that the RN pumps and their seismic supports were replaced within the last seventeen years as part of planned pump refurbishment activities, not due to any observed structural deficiencies. The replacement seismic supports were evaluated in accordance with the American Institute of Steel Construction (AISC) Manual of Steel Construction, 7th Edition, and the RN pump assemblies were analyzed in accordance with ASME Code, Section III, 1971 Edition through the Summer 1972 Addenda. Structural analyses of these replacement supports demonstrated substantial design margin, with axial-bending and anchor utilization ratios remaining well below allowable limits. In addition, all replacement supports received preservice VT-1 and VT-3 visual examinations with acceptable results, providing further assurance of their structural adequacy. Operating experience at Catawba indicates that past VT-3 visual examinations identified corrosion on certain seismic supports, which were evaluated as acceptable in accordance with ASME Code, Section XI, Subsection IWF-3122.3 and addressed through cleaning and recoating. Past VT-1 visual examination results for RN pumps were acceptable, with no relevant indications.

Based on the above evaluations, including past plant-specific examination results, engineering evaluations, structural analysis margins, and operating experience, the NRC staff determines that the RN pump welded attachments and seismic supports at Catawba will continue to perform their intended functions during the extended Fourth ISI interval, and the use of licensee's proposed alternative provides an acceptable level of quality and safety. Therefore, the NRC staff finds the licensee's proposed alternative acceptable for the duration of the Fourth ISI interval, as extended to December 31, 2026.

4.0 CONCLUSION

As set forth above, the NRC staff finds that the licensee's proposed alternative is acceptable for a one-time, six-month extension of the Fourth ISI interval to complete the required ASME Code, Section XI visual examinations of RN system pump welded attachments and seismic supports at Catawba. The NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(1), and that the proposed alternative provides an acceptable level of quality and safety for the affected components during the extended Fourth ISI interval.

Therefore, the NRC staff authorizes the use of the licensee's proposed alternative RA-26-0110 for Catawba, Units 1 and 2, for the Fourth ISI interval, which is extended to December 31, 2026, for the completion of the required ASME Code, Section XI visual examinations.

All other requirements in ASME Code, Section XI for which relief or an alternative were not specifically requested and approved as part of this subject request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2 – AUTHORIZATION OF PROPOSED ALTERNATIVE RA-26-0110 FOR EXTENSION OF THE FOURTH ISI INTERVAL FOR NUCLEAR SERVICE WATER PUMP WELDED ATTACHMENTS AND SEISMIC SUPPORTS (EPID L-2026-LLR-0033) DATED JUNE 4, 2026

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