[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[Docket No. 50-261; NRC-2025-1800]

Duke Energy Progress, LLC;

H. B. Robinson Steam Electric Plant, Unit No. 2;

Exemption

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing an exemption in response to a request dated May 8, 2025, as supplemented by letter dated August 21, 2025, from Duke Energy Progress, LLC, to allow the implementation of the American Society of Mechanical Engineers Code Case N-921 after the start dates of the sixth Inservice Inspection (ISI) interval at H. B. Robinson Steam Electric Plant, Unit No.2.

DATES: The exemption was issued on December 23, 2025.

ADDRESSES: Please refer to Docket ID **NRC-2025-1800** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to https://www.regulations.gov and search for Docket ID **NRC-2025-1800**. Address questions about Docket IDs in Regulations.gov to Bridget Curran; telephone: 301-415-1003; email: Bridget.Curran@nrc.gov. For technical questions, contact the individual listed in the “For Further Information Contact” section of this document.

- **NRC’s Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at https://www.nrc.gov/reading-rm/adams.html. To begin the search, select “Begin ADAMS Public Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to PDR.Resource@nrc.gov. The exemption request dated

May 8, 2025, as supplemented by letter dated August 21, 2025, is available in ADAMS under Accession Nos. ML25128A041 and ML25233A035, respectively.

- **NRC's PDR:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: John Klos, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-5136; email: John.Klos@nrc.gov.

SUPPLEMENTARY INFORMATION: The text of the exemption is attached.

Dated: December 29, 2025.

For the Nuclear Regulatory Commission.

Lee Klos, Project Manager,
Plant Licensing Branch II-1,
Division of Operating Reactor Licensing,
Office of Nuclear Reactor Regulation.

Attachment - Exemption

NUCLEAR REGULATORY COMMISSION

Docket Nos. 50-261

Duke Energy Progress, LLC.

H. B. Robinson Steam Electric Plant Unit No. 2

Exemption

I. Background.

Duke Energy Progress, LLC (Duke Energy, the licensee) is the holder of the Renewed Facility Operating License (RFOL) No. DRP-23 for H.B. Robinson Steam Electric Plant, Unit 2 (H.B. Robinson Unit 2) which is a Pressurized Water Reactor (PWR) located in Hartsville, South Carolina. The RFOL provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

On July 17, 2024, NRC issued a final rule incorporating by reference Regulatory Guide (RG) 1.147, Revision 21 (Agencywide Documents Access and Management System (ADAMS), Accession No. ML23291A003), into Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(3)(ii) (89 FR 58039). This RG determined American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI (ASME BPV XI) Code Case N-921, “Alternative 12-yr Inspection Interval Duration, Section XI, Division 1” to be conditionally acceptable. This code case allows NRC licensees to implement an inservice inspection (ISI) program based upon a 12-year ISI interval, as opposed to the traditional 10-year ISI interval required by ASME BPV XI, Article IWA-2431. RG 1.147, Revision 21, specifies four conditions on Code Case N-921. Condition 2 states, “This code case can only be implemented at the beginning of an ISI interval as part of a routine update of the ISI program.” The July 17, 2024, final rule also added 10 CFR 50.55a(y), which includes a definition for the term “inservice inspection interval.” This definition, in part, specifies that the length of the ISI interval is described in ASME BPV XI, Article IWA-2431.

II. Request/Action.

By application dated May 8, 2025 (ML25128A041), as supplemented by letter dated August 21, 2025, (ML25233A035), the licensee, pursuant to 10 CFR 50.12, "Specific exemptions," requested an exemption from certain requirements of 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(y) to allow the use of Code Case N-921 after the start dates of the sixth ISI interval at H. B. Robinson Unit 2, which is not in accordance with Condition 2 on Code Case N-921, as specified in RG 1.147, Revision 21. The sixth ISI interval at H. B. Robinson 2 began on February 19, 2023. The licensee stated that the proposed exemption does not impact the Inservice Testing (IST) program or snubber program, which are implemented under the requirements of the ASME Operation and Maintenance Code.

III. Discussion.

Pursuant to 10 CFR 50.12(a), the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security and (2) special circumstances are present. Under 10 CFR 50.12(a)(2), special circumstances are present when at least one of the following six conditions are met:

(i) Application of the regulation in the particular circumstances conflicts with other rules or requirements of the Commission; or

(ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule; or

(iii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated; or

(iv) The exemption would result in benefit to the public health and safety that

compensates for any decrease in safety that may result from the grant of the exemption; or

(v) The exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation; or

(vi) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption.

A. The Exemption is Authorized by Law

The exemption would authorize exemption from certain requirements of 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(y) to allow the use of Code Case N-921, after the start dates of the sixth ISI interval at H. B. Robinson Unit 2. As stated, 10 CFR 50.12(a) allows the NRC to grant an exemption from the requirements of 10 CFR part 50, including 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(y), when the exemption is authorized by law. An exemption is authorized by law where it is not expressly prohibited by statute or regulation. A proposed exemption is implicitly authorized by law if it will not present an undue risk to the public health and safety, is consistent with the common defense and security, and special circumstances are present, and no other provisions in law prohibit, or otherwise restrict, its application. The NRC staff has determined that no provisions in law expressly prohibit or otherwise restrict the application of the requested exemption. The NRC staff has also determined, as explained below, that the requested exemption will not present an undue risk to the public health and safety, is consistent with the common defense and security, and special circumstances are present. Therefore, the NRC staff concludes that the exemption is authorized by law.

B. The Exemption Presents no Undue Risk to Public Health and Safety

This exemption would allow the licensee to implement Code Case N-921 after the start dates of the sixth ISI interval at H. B. Robinson Unit 2. The action does not change the manner in which the plant operates and maintains public health and safety

because the exemption does not result in a change to the facility or the current operating license. The licensee stated that extending the ISI interval by two years does not impact the technical basis supporting any of the currently authorized 10 CFR 50.55a alternatives and does not create any particular challenge in reconciling the ISI inspection schedules to conform with the three four-year periods specified in Code Case N-921. Accordingly, the NRC staff reviewed the alternatives listed in Attachment 1 of the licensee's exemption request for ISI interval-related impacts and identified several common themes in these alternatives and evaluated the alternatives as described below.

Alternatives with No ISI Interval Relationship

The NRC staff noted that the authorized alternative identified by RA-19-0106 is unrelated to the length of the ISI interval. The NRC staff confirmed that this authorized alternative granted by letter dated June 19, 2020 (ML20097F088), was only applicable through the Fall 2024 refueling outage, which had already occurred at the time of the licensee's current submittal for an exemption. Therefore, the NRC staff's basis for approving this alternative is not impacted by extending the length of the ISI interval to 12 years.

Alternatives Based on Technical Reports with 10-Year ISI Intervals

The NRC staff noted that the authorized alternatives identified by RA-22-0256 and RA-22-0257 are based on technical reports, as identified below, which were originally developed based on the assumption of 10-year ISI intervals:

- EPRI Technical Report 3002015906, "Technical Bases for Inspection Requirements for PWR Steam Generator Class 1 Nozzle-to-Vessel Welds and Class 1 and Class 2 Vessel Head, Shell, Tubesheet-to-Head, and Tubesheet-to-Shell Welds," 2019 (ML20225A141).
- EPRI Technical Report 3002014590, "Technical Bases for Inspection Requirements for PWR Steam Generator Feedwater and Main Steam Nozzle-to-Shell Welds and Nozzle Inside Radius Sections," 2019

(ML19347B107).

- EPRI Technical Report 3002015905, “Technical Bases for Inspection Requirements for PWR Pressurizer Head, Shell-to-Head, and Nozzle-to-Vessel Welds,” 2019 (ML21021A271).

These assessments include flaw tolerance evaluations using probabilistic fracture mechanics and deterministic fracture mechanics, and a survey of inspection results from 74 domestic and international nuclear units. Based on the conclusions of the three reports, the licensee requested an alternative to the ASME Section XI examination requirements for the subject steam generator and pressurizer welds in RA-22-0256 and RA-22-0257, respectively.

While the analyses in these technical reports were developed based on the assumption of 10-year ISI intervals in calculating failure probability, the NRC staff noted that there are offsetting factors that account for potential impacts of a 12-year ISI interval. First, these technical reports and the licensee’s submittal for the authorized alternatives (see ML23256A088 and ML23264A853) contain generic and plant-specific sensitivity studies that considered a pre-service inspection followed by various scenarios for subsequent inservice inspections as well as a plant-specific limiting scenario, which was not specifically considered in these EPRI technical reports. The NRC staff finds that these sensitivity studies bound the impacts of a 12-year ISI interval, where the examinations may be more spread out in time but not eliminated. In addition, the analyses in these technical reports assume the existence of flaws in the subject welds. This is a conservative assumption, since the examination history of these locations does not indicate that significant cracking is occurring. Additionally, specific inspections to be completed by the licensee at pre-determined years as part of its performance monitoring plan are outlined in the respective approval letters for RA-22-0256 and RA-22-0257. The NRC staff noted that these scheduled inspections at the Duke Energy fleet addressed within RA-22-0256 and RA-22-0257 ensure that no more than 20 years elapses between the performance of an ASME Code, Section XI, examination for the respective

weld/component and is scheduled to occur regardless of the length of the ISI interval. Therefore, the NRC staff's basis for this performance monitoring plan in those alternatives is not impacted by extending the length of the ISI interval to 12 years. Finally, the licensee stated that alternatives RA-22-0256 and RA-22-0257, which addressed the steam generator welds and pressurizer welds, respectively, are authorized only through the end of the current license. Therefore, the licensee must reassess this examination requirement at the end of the license, regardless of the length of the ISI interval.

Accounting for these factors, as discussed above, the NRC staff finds that the NRC staff's basis for approving the alternatives in RA-22-0256 and RA-22-0257 is not impacted by extending the length of the ISI interval to 12 years.

Based on its review of the licensee's analysis of alternatives in Attachment 1 of the exemption request, the NRC staff concludes that the exemption would not result in any significant reduction in the effectiveness of the ISI programs implemented by the licensee at H.B. Robinson Unit 2. Further, based on the above, the NRC staff concludes that the exemption would not present an undue risk to the public health and safety.

C. The Exemption is Consistent with the Common Defense and Security

The requested exemption would allow the licensee to implement Code Case N-921 after the start dates of the sixth ISI interval at H. B. Robinson Unit 2. The change is administrative in nature, adequately controlled by the ISI Program criteria and ASME Code requirements and is not related to security issues. The length of the ISI interval is also not related to security issues. Thus, NRC staff determined that the common defense and security is not impacted by this exemption, and, therefore, the exemption is consistent with the common defense and security.

D. Special Circumstances

The regulation under 10 CFR 50.12(a)(2) states, in part, that "[t]he Commission will not consider granting an exemption unless special circumstances are present," and describes, in 10 CFR 50.12(a)(2)(i) – (vi), the conditions under which special

circumstances exist. In the licensee's exemption request submittal Section III, "Basis for Approval of Exemption Request," item (d), the licensee stated that three of the six special circumstances listed in 10 CFR 50.12(a)(2) are present:

(ii) Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

(iii) Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated.

(vi) There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption.

The NRC staff performed an independent review of the special circumstances claimed by the licensee.

For the special circumstances in 10 CFR 50.12(a)(2)(ii), the licensee stated that the purpose of the July 2024 final rule (89 FR 58039) was to identify ASME Code cases that the NRC determined to be acceptable for use. The licensee noted that NRC's approval of Code Case N-921 includes a condition that "This code case can only be implemented at the beginning of an ISI interval as part of a routine update of the ISI program." The licensee provided the following support to the claim that application of the regulation would not serve the underlying purpose of the rule:

- The licensee stated that the exemption would not inhibit the ability of the licensee to comply with the ASME BPV XI examination distribution requirements.
- Table 2 for H. B. Robinson Unit 2 of the licensee's submittal described the new inspection period dates and corresponding refueling outages.
- The licensee evaluated all NRC-authorized alternative requests in Attachment 1 of the licensee's submittal, consistent with NRC concerns expressed in the 89 FR 58039 final rule preamble (see NRC staff's independent review in

Section III.B above).

- The licensee stated that the site ISI program owners routinely modify the ISI examination schedule during the ISI interval due to various reasons, such as evolving availability of qualified personnel and equipment.

In the 89 FR 58039 final rule preamble, the NRC communicated that order and predictability of licensee ISI programs is a paramount consideration. The careful advance planning required by ASME BPV XI and 10 CFR 50.55a maximizes licensee effectiveness in successfully executing all ISI requirements. The successful execution of ISI requirements, in turn, contributes to nuclear safety by providing a data stream used to continuously evaluate the structural integrity of safety-related components. The NRC staff determined that the licensee provided adequate evidence that, if the NRC staff approves the proposed exemption, the ISI programs at H.B. Robinson Unit 2 will be managed in a manner that promotes order and predictability.

In the 89 FR 58039 final rule, the NRC added a new condition requiring that Code Case N-921 be implemented at the start of a new ISI interval. The basis for the condition is that implementation of Code Case N-921 in the middle of an ISI interval creates complications related to existing examination schedules and alternatives that were approved assuming a 10-year ISI interval. As discussed above, the licensee demonstrated that no currently approved alternatives are impacted by extending the length of the ISI interval to 12 years. Another concern identified by the NRC staff with allowing mid-cycle implementation of Code Case N-921 involves potential complications of reconciling ISI inspection schedules to conform with the three 4-year periods specified in Code Case N-921. As discussed above, the licensee stated that in anticipation of implementing Code Case N-921, it proactively adjusted examination schedules accordingly to maintain compliance with Code Case N-921 periodic distribution requirements. Therefore, the NRC staff concludes that application of the regulation would not serve the underlying purpose of the rule because the licensee demonstrated that mid-cycle implementation of Code Case N-921 will have no impact on the ISI

programs at H.B. Robinson Unit 2. Based on the above, the NRC staff determined that the special circumstances described in 10 CFR 50.12(a)(2)(ii) are present for the requested exemption. Since the regulations require that one of the special circumstances in 10 CFR 50.12(a)(2) be satisfied before NRC may grant an exemption, the NRC staff did not evaluate the licensee's additional claims that the special circumstances in 10 CFR 50.12(a)(2)(iii) and (vi) are also applicable.

E. Environmental Considerations

The NRC staff determined that the exemption discussed herein meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(25) because (i) there is no significant hazards consideration; (ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which an exemption is sought are among those identified in 10 CFR 51.22(c)(25)(vi), including requirements of an administrative, managerial, or organizational nature. Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to be prepared in connection with the issuance of the exemption. The basis for this NRC staff determination is discussed as follows with an evaluation against each of the requirements in 10 CFR 51.22(c)(25).

Requirements in 10 CFR 51.22(c)(25)(i) – There is no significant hazards consideration.

The criteria for determining whether an action involves a significant hazards consideration are found in 10 CFR 50.92(c). The exemption only involves an ISI program implementation change, which is administrative in nature. The exemption does not adversely affect plant equipment, operation, or procedures. Therefore, there are no significant hazard considerations, because granting the exemption would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any

accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

Requirements in 10 CFR 51.22(c)(25)(ii) – There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The exemption involves only an ISI program implementation change, which is administrative in nature, and does not involve any changes in the types or significant increase in the amounts of any effluents that may be released offsite.

Requirements in 10 CFR 51.22(c)(25)(iii) – There is no significant increase in individual or cumulative public or occupational radiation exposure.

Since the exemption involves only an ISI program implementation change, which is administrative in nature, it does not contribute to any significant increase in occupational or public radiation exposure.

Requirements in 10 CFR 51.22(c)(25)(iv) – There is no significant construction impact.

Since the exemption involves only an ISI program implementation change, which is administrative in nature, it does not involve any construction impact.

Requirements in 10 CFR 51.22(c)(25)(v) – There is no significant increase in the potential for or consequences from radiological accidents.

The exemption involves only an ISI program implementation change, which is administrative in nature and does not impact the potential for or consequences from accidents.

Requirements in 10 CFR 51.22(c)(25)(vi)(I) – The requirements from which the exemption is sought involve requirements that are of an administrative, managerial, or organizational nature.

The exemption involves only an ISI program implementation change regarding examination scheduling requirements and other requirements of an administrative, managerial, or organizational nature, because it is associated with the marginal extension from a 10-year to 12-year ISI interval.

Based on the above, NRC staff determined that the exemption meets the eligibility criteria for the categorical exclusion set forth in 10 CFR 51.22(c)(25).

Therefore, in accordance with 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this exemption request.

IV. Conclusions.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants Duke Energy Carolinas, LLC's request for an exemption from certain requirements of 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(y) to allow the implementation of ASME Code Case N-921 after the start dates of the sixth ISI interval at H. B. Robinson Unit 2.

This exemption is effective upon issuance.

Dated: December 23, 2025.

For the Nuclear Regulatory Commission.

/RA/

Aida Rivera-Varona, Acting Director,
Division of Operating Reactor Licensing,
Office of Nuclear Reactor Regulation.

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