



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

May 24, 2022

Mr. David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES
NUCLEAR POWER STATION, UNITS 1 AND 2 – SUPPLEMENTAL
INFORMATION NEEDED FOR ACCEPTANCE OF PROPOSED ALTERNATIVE
TO USE ASME CODE CASE N-921 (EPID L-2022-LLR-0009)

Dear Mr. Rhoades:

By letter dated January 18, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22018A106), Exelon Generation Company, LLC submitted an application in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a, "Codes and standards," at Dresden Nuclear Power Station (Dresden), Units 2 and 3, and Quad Cities Nuclear Power Station (Quad Cities), Units 1 and 2. On February 1, 2022 (ML22032A333), Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (CEG or the licensee).

The January 18, 2022, letter states that the licensee is requesting a proposed alternative to requirements in Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code) and 10 CFR 50.55a(g)(4)(ii), "Applicable ISI Code: Successive 120-month intervals." ¹ The proposed alternative would allow the licensee to use ASME Code Case N-921, "Alternative 12-yr [Year] Inspection Interval Duration," which would extend the current inservice inspection (ISI) and containment ISI (CISI) intervals at Dresden and Quad Cities by 2 years. The application states that, in accordance with 10 CFR 50.55a(z)(1), the proposed alternative would provide an acceptable level of quality and safety.

On February 25, 2022, a public meeting (summary at ML22060A078) was held between the U.S. Nuclear Regulatory Commission (NRC) staff and CEG representatives regarding the proposed alternative. During the meeting, CEG clarified the scope of the proposed alternative and indicated that supplemental information could be provided to support the NRC staff's acceptance review. The NRC staff has reviewed the application and considered the statements made by CEG at the public meeting. The purpose of this letter is to provide the NRC staff conclusions regarding the staff's acceptance of this application for review.

¹ Although the cover letter references 10 CFR 50.55a(g)(4)(ii) as being within the scope of the requested alternative, the attachment states that the proposed alternative is limited to specified provisions of Section XI of the ASME BPV Code.

The application states that implementation of the ASME Code Case N-921 would support a minimum two refueling outages per inspection period and supports improved operation strategies such as skip ISI outages and divisional outages. However, the application further states that implementation of the proposed alternative at Dresden and Quad Cities would not result in a minimum of two refueling outages per inspection period for the current ISI and CISI intervals. The application states that these benefits would not be realized until the code case is implemented in future ISI or CISI intervals.

For the CISI programs, the proposed alternative would extend the current CISI intervals at Dresden and Quad Cities from September 8, 2028, to September 8, 2030. The NRC staff anticipates that any potential rulemaking to incorporate Code Case N-921 by reference into 10 CFR 50.55a would be completed well before September 8, 2028. Therefore, the NRC staff does not intend to accept for review the portion of the January 18, 2022, application that seeks an alternative for the third 10-year CISI intervals at Dresden and Quad Cities.

For the ISI programs, the current ISI intervals at Dresden and Quad Cities would be extended from 2023 to 2025. Based on the application and the licensee's statements made during the February 25, 2022, public meeting, the NRC staff understands that the proposed extension of the fifth 10-year ISI intervals at Dresden and Quad Cities is intended to be an alternative to specific requirements in 10 CFR 50.55a(g)(4)(ii), (g)(5), and (b)(5) and the 2017 Edition of the ASME BPV Code, Section XI, as incorporated by reference in 10 CFR 50.55a. If this understanding is confirmed by the licensee, the NRC staff may consider the proposed extension of the fifth 10-year ISI intervals at Dresden and Quad Cities in accordance with 10 CFR 50.55a(z). Based on this understanding, the NRC staff has 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 alternative in terms of regulatory requirements for the protection of public health and safety.

In order to make the January 18, 2022, application complete, the NRC staff requests that CEG supplement the application to address the information requested in the enclosure by June 13, 2022. This will enable the NRC staff to begin its detailed technical review. The need for this information and the response date were discussed with CEG representatives at the February 25, 2022, public meeting and during a May 24, 2022, conference call. In addition, the NRC staff identified that this information would be needed to support inspection interval extensions during the pre-application meetings held on November 4 and December 15, 2020, and November 16, 2021 (summaries at ML20323A033, ML20351A283, and ML21333A153, respectively).

The application will not be accepted for review using the standards in 10 CFR 2.101, and the NRC will cease its review activities associated with the application, if by the above date: (1) the proposed alternative is not revised as described above or (2) the information responsive to the NRC staff's request is not received. If the application is subsequently accepted for review, CEG will be advised of any further information needed to support the NRC staff's detailed technical review by separate correspondence.

If you have any questions, please contact me by email at Blake.Purnell@nrc.gov.

Sincerely,

/RA/

Blake Purnell, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-237, 50-249, 50-254, and
50-265

cc: Listserv

Enclosure:
Supplemental Information Needed

SUPPLEMENTAL INFORMATION NEEDED

PROPOSED ALTERNATIVE TO USE ASME CODE CASE N-921

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NOS. 50-237, 50-249, 50-254, AND 50-265

By letter dated January 18, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22018A106), Exelon Generation Company, LLC submitted an application in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a, "Codes and standards," at Dresden Nuclear Power Station (Dresden), Units 2 and 3, and Quad Cities Nuclear Power Station (Quad Cities), Units 1 and 2. On February 1, 2022 (ML22032A333), Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (CEG or the licensee). The proposed alternative would allow, in part, the current inservice inspection (ISI) intervals at Dresden and Quad Cities to be extended by 2 years.

On February 25, 2022, a public meeting (summary at ML22060A078) was held between the U.S. Nuclear Regulatory Commission (NRC) staff and CEG representatives regarding the proposed alternative. During the meeting, CEG clarified the scope of the proposed alternative and indicated that supplemental information could be provided to support the NRC staff's acceptance review.

The NRC staff has reviewed the application and considered the statements made by CEG at the public meeting. The NRC staff has concluded that the information below is necessary for the staff to make an independent assessment regarding the acceptability of the proposed alternative as it relates to changes to the ISI program at Dresden and Quad Cities. For the reasons discussed in the cover letter, the NRC staff is not requesting supplemental information regarding the containment ISI programs.

Regulatory Requirements

The regulations in 10 CFR 50.55a include, in part, requirements for the use of Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code) for the ISI of nuclear power plants. Specific editions and addenda of the ASME Codes have been incorporated by reference into 10 CFR 50.55a, subject to certain limitations. Section XI of the ASME BPV Code requires certain inservice examinations and tests to be completed within a defined 10-year interval (referred to as the inspection interval) for the service life of the plant.

Paragraph 10 CFR 50.55a(g)(4)(ii) requires, in part, that inservice examination of components and system pressure tests conducted during successive 120-month (i.e., 10-year) inspection intervals (i.e., after the initial 10-year interval) must comply with the latest edition and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(a) 18 months before the start of the 120-month inspection interval (or the optional ASME Code Cases as specified in 10 CFR 50.55a(g)(4)(ii)) subject to the conditions listed in 10 CFR 50.55a(b).

Enclosure

The regulations in 10 CFR 50.55a(z) state, in part, that alternatives to the requirements in paragraphs (b) through (h) of 10 CFR 50.55a may be authorized by the NRC if the licensee demonstrates that: (1) the proposed alternative provides an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The NRC staff understands that the proposed extension of the fifth 10-year ISI intervals at Dresden and Quad Cities is intended to be an alternative to specific requirements in 10 CFR 50.55a(g)(4)(ii), (g)(5), and (b)(5) and the 2017 Edition of the ASME BPV Code, Section XI, as incorporated by reference in 10 CFR 50.55a. However, as discussed below, supplemental information is needed to confirm this understanding.

Information Needed

1. Address 10 CFR 50.55a(g)(4) regarding code of record update.
 - a. Explicitly state whether the licensee is seeking an alternative under 10 CFR 50.55a(z) from (1) the 10 CFR 50.55a(g)(4)(ii) requirement to update the code of record every 10 years and (2) the 10 CFR 50.55a(g)(5)(i) requirement to revise the ISI program to meet the requirements of 10 CFR 50.55a(g)(4).
 - b. If seeking such an alternative, confirm that the code of record required by 10 CFR 50.55a(g)(4)(ii) for the duration of the proposed extension of the fifth 10-year ISI intervals at Dresden and Quad Cities is the 2017 Edition of the ASME BPV Code, Section XI, as incorporated by reference in 10 CFR 50.55a.
 - c. If seeking such an alternative, provide appropriate justification including a comparison of the requirements of (1) the current code of record and (2) the code of record required by 10 CFR 50.55a(g)(4)(ii) for the duration of the proposed extension to the fifth 10-year ISI intervals. For example, if Item 1.b is confirmed, the response would compare the 2007 Edition through 2008 Addenda to the 2017 Edition of the ASME BPV Code, Section XI, as incorporated by reference in 10 CFR 50.55a, including any associated NRC conditions.
2. Address 10 CFR 50.55a(b)(5) regarding code case updates.
 - a. Explicitly state whether the licensee is seeking an alternative under 10 CFR 50.55a(z) from the 10 CFR 50.55a(b)(5) requirement to use the latest versions of code cases approved in 10 CFR 50.55a during the subsequent 10-year interval.
 - b. If seeking such an alternative, provide appropriate justification including a comparison of the requirements of the code case requirements that would apply absent the proposed alternative to the code case requirements that will be implemented as a result of the proposed alternative.
3. Address 10 CFR 50.55a(g)(5) regarding impractical requirements.
 - a. Explicitly state whether the licensee is seeking an alternative under 10 CFR 50.55a(z) from the 10 CFR 50.55a(g)(5) requirement to request relief from impractical Code requirements no later than 12 months after the expiration of the 10-year interval for which relief is sought.

- b. If seeking such an alternative, provide a description of the licensee's proposed alternative procedure for processing impractical Code requirements.
- 4. Improve the technical justification of the proposed alternative.
 - a. Provide plant-specific details that demonstrate the full range of impacts the proposed alternative will have on the licensee's ISI program (e.g., inspection schedules, inspection interval schedules, and inspection period schedules).
 - b. Provide a focused discussion that appropriately reflects the intended scope of the alternative request. The discussion should focus on Dresden and Quad Cities specifically, rather than all plants on a 24-month refueling cycle. The discussion should focus on the current interval, rather than discuss subsequent intervals.
- 5. Improve the technical justification for extension of the previously approved alternatives.
 - a. Provide a more detailed discussion on the extension of previously approved alternatives applicable to the current ISI interval.
 - b. Describe how each previously approved alternative is impacted by redefining the inspection interval. This should include a description of all changes to these previously approved alternatives that are needed to apply these alternatives to the extended portion of the ISI interval. For the risk-informed alternatives, this information would include any changes to the methodology, peer reviews, and risk values.
 - c. If an approved alternative is impacted by the new inspection interval, describe the basis for extending the approved alternative. For the risk-informed alternatives, this would include information to demonstrate that the five key principles for risk-informed decision-making would continue to be met. These principles are listed in Section C of NRC Regulatory Guide 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," dated January 2018 (ML17317A256), and in other NRC guidance documents.
 - d. For each previously approved alternative, explain why the basis for the NRC staff's previous approval would remain valid or provide additional information to demonstrate that extending the duration of these alternatives meets the criteria in 10 CFR 50.55a(z)(1) or (2), as applicable.

Additional Considerations

In addition to providing the supplemental information above, the licensee should consider removing the discussions regarding the future benefits of the ASME Code Case N-921 and the burdens of the requirements in 10 CFR 50.55a. These discussions do not appear to support the licensee's demonstration that the proposed alternative would provide an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1). Removal of these discussions would improve the efficiency of the NRC staff's review.

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES
NUCLEAR POWER STATION, UNITS 1 AND 2 – SUPPLEMENTAL
INFORMATION NEEDED FOR ACCEPTANCE OF PROPOSED ALTERNATIVE
TO USE ASME CODE CASE N-921 (EPID L-2022-LLR-0009) DATED
MAY 24, 2022

DISTRIBUTION:

PUBLIC

RidsNrrOd Resource

RidsNrrDorl Resource

RidsNrrDorlLpl3 Resource

RidsRgn3MailCenter Resource

RidsNrrLASLent Resource

RidsNrrLASRohrer Resource

RidsAcrs_MailCTR Resource

RidsOgcMailCenter Resource

RidsNrrPMExelon Resource

RidsNrrPMDresden Resource

RidsNrrPMQuadCities Resource

RidsNrrDnrl Resource

RidsNrrDnrlNphp Resource

RidsNrrDnrlNvib Resource

RidsNrrDss Resource

RidsNrrDssScpb Resource

RidsNrrDro Resource

RidsNrrDrolqvb Resource

RidsNrrDraArcb Resource

SLav, NRR

JRankin, NRR

CNolan, EDO

DRudland, NRR

MBenson, NRR

AStubbs, NRR

JDozier, NRR

LSmith, NRR

ADAMS Accession No.: ML22062B649

OFFICE	DORL/LPL3/PM	DORL/LPL3/LA	DNRL/NVIB/BC	DSS/SCP/BC
NAME	BPurnell	SRohrer	ABuford (JTsoo for)	BWittick
DATE	5/12/22	3/7/22	3/7/22	5/12/22
OFFICE	DRA/ARCB/BC	OGC - NLO	DORL/LPL3/BC	DSS/D
NAME	KHsueh	MASpencer	NSalgado	JDonoghue
DATE	3/8/22	5/16/22	5/17/22	5/18/22
OFFICE	DORL/DD	DORL/LPL3/PM		
NAME	GSuber	BPurnell		
DATE	5/19/22	5/24/22		

OFFICIAL RECORD COPY