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

March 7, 2022

LICENSEE: CONSTELLATION ENERGY GENERATION, LLC

FACILITIES: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3, AND QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

SUBJECT: SUMMARY OF FEBRUARY 25, 2022, MEETING WITH CONSTELLATION ENERGY GENERATION, LLC REGARDING A PROPOSED ALTERNATIVE TO EXTEND THE INSERVICE INSPECTION INTERVALS (EPID L-2022-LLR-0009)

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, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2 (collectively, the facilities). On February 1, 2022 (ADAMS Accession No. ML22032A333), Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (CEG or the licensee). The U.S. Nuclear Regulatory Commission (NRC) staff is currently performing an acceptance review of the licensee's application for the proposed alternative.

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 (ASME Code) for the inservice inspection (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 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. The proposed alternative is to adopt the ASME Code Case N-921 for the current inspection intervals at the facilities, which would allow these inspection intervals to be extended from 10 years to 12 years. Specifically, the proposed alternative would allow the extension of the Dresden and Quad Cities ISI intervals from 2023 to 2025 and containment ISI (CISI) intervals from 2028 to 2030.

On February 25, 2022, an observational public meeting was held between the NRC staff and CEG representatives to discuss the proposed alternative. By email dated February 8, 2022 (ADAMS Accession No. ML22039A204), the NRC staff requested that CEG participate in the public meeting to support the NRC staff's completion of the acceptance review of the application in a timely manner. The email also provided discussion topics for the meeting. The purpose of the meeting was for the NRC staff to:

1. Gain clarification of the scope of the proposed alternative;
2. Identify information needed to accept the application for review;
3. Identify any additional NRC approvals needed to implement the proposed alternative; and

4. Discuss the timeframe for the licensee to provide this supplemental information and any additional requests needed to implement the proposed alternative.

The meeting notice and agenda are available in ADAMS at Accession No. ML22041A672. A copy of the NRC staff's presentation is available in ADAMS at Accession No. ML22053A291. A list of attendees is enclosed.

Regulations

The regulations in 10 CFR 50.55a(g)(4)(ii) require, in part, that inservice examination of components and system pressure tests conducted during successive 120-month inspection intervals (i.e., after the initial 10-year interval) must comply with the latest edition and addenda of the ASME Code (or the optional ASME Code Cases) incorporated by reference in 10 CFR 50.55a(a) 18 months before the start of the 120-month inspection interval subject to the conditions listed in 10 CFR 50.55a(b). This is referred to as the Code of Record (CoR) update interval in the NRC staff's presentation and this meeting summary. Although the 10-year inspection interval and the CoR update interval coincide, they are separate and distinct requirements. In addition, 10 CFR 50.55a(g)(5)(i) requires the ISI program to be revised by the licensee, as necessary, to meet the requirements of 10 CFR 50.55a(g)(4).

The regulations in 10 CFR 50.55a(z)(1) 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 the proposed alternative provides an acceptable level of quality and safety.

Background

On November 16, 2021, the NRC staff held a pre-application meeting with the licensee regarding a planned fleetwide request for a proposed alternative to adopt ASME Code Case N-921 (summary under ADAMS Accession No. ML21333A153). During that meeting, the NRC staff noted that reviewing a fleet request may be challenging and the licensee should consider submitting for just one or two plants that are near the end of their current ISI interval. The NRC staff further noted that it would be challenging to justify extending usage of the same edition of the ASME Code beyond 10-years without providing a comparison between the current CoR and the CoR that is required by 10 CFR 50.55a for the next interval. This would be particularly challenging for plants that have just started their current interval since the CoR for the next interval cannot be determined.

Pre-application meetings with the license on a similar proposal were held on November 4, 2020, and December 18, 2020 (summaries under ADAMS Accession Nos. ML20323A033 and ML20351A283, respectively). On March 3, 2021 (ADAMS Accession No. ML21063A179), the licensee applied for a fleetwide exemption from certain requirements in 10 CFR 50.55a to, in part, allow the extension of the inspection intervals to 12 years. This exemption request was subsequently withdrawn, and, by letter dated April 8, 2021 (ADAMS Accession No. ML21077A177), the NRC staff identified the information that must be provided for the NRC staff to accept the proposed exemption for review should the licensee decide to resubmit.

Discussion

The following is a summary of the discussion including the licensee's responses to the NRC staff's questions and comments made during the meeting. The NRC staff's questions included in the presentation slides are not repeated here.

Compliance with 10 CFR 50.55a

The NRC staff noted that the proposed 12-year inspection interval would not align with the 120-month CoR update interval. During the November 16, 2021, pre-application meeting, the NRC staff asked the licensee to address this issue in the application, but this issue was not addressed. Therefore, the NRC staff asked several questions to obtain clarification of how the licensee would comply with the 120-month requirements in 10 CFR 50.55a(g)(4)(ii), (b)(5), and (g)(5).

The licensee stated that the proposed alternative included extending the CoR update interval by 2 years, such that the next update would occur after the end of the extended inspection intervals. Thus, the CoR update would not apply to the current inspection intervals. In addition, the licensee would continue to apply the same versions of the ASME Code cases currently being used though the extended period. The licensee would submit notifications of impracticality under 10 CFR 50.55a(g)(5) within 12 months of the end of the extended inspection intervals.

The licensee stated that it had cited 10 CFR 50.55a(g)(4)(ii) in its application and thought this was sufficient to convey that it was requesting to extend the CoR update inteval. However, the NRC staff noted that the application did not explicitly state that the licensee was seeking relief from the 120-month update interval requirement in 10 CFR 50.55a(g)(4)(ii). The NRC staff noted that changing the CoR update interval may require an exemption from 10 CFR 50.55a(g)(4)(ii); however, the staff stated that this was not a final decision. The staff stated that any decision regarding the need for an exemption would be made as the staff completes the acceptance review process. If an exemption is required, the NRC staff would let the licensee know in advance of issuing the letter requesting supplemental information.

The licensee noted that alternatives to the CoR update requirements have been approved in the past. In addition, the licensee noted that the NRC staff has approved alternatives to some additional requirements imposed by the NRC in 10 CFR 50.55a that are not part of the ASME Code. The NRC staff addressed this comment in its conclusion to the meeting (see below).

ISI During Extended Portion of Inspection Interval

The application requests approval of the proposed alternative near the end of the current ISI intervals at the facilities. The NRC staff would expect most, if not all, the required examinations for the current intervals to have been completed by the time the staff's review is completed. Therefore, the NRC asked the licensee to discuss the examinations that will be performed during the 2-year extension of the ISI intervals at the facilities.

The licensee stated that it would continue to meet requirements (e.g., leakage tests, system pressure tests, augmented examinations) that must be performed every outage. The examinations for the current ISI interval would not be extended unless there are lingering issues.

Justification for Extending the Inspection Intervals

The regulation in 10 CFR 50.55a(z)(1) requires the licensee to demonstrate that the proposed alternative provides an acceptable level of quality and safety. The NRC staff noted that the application focuses on generic benefits and benefits for future inspection intervals. This information does not address the criteria in 10 CFR 50.55a(z)(1). Therefore, the staff stated

that technical justification for extending the current inspection intervals at the specific facilities needs to be provided. In addition, the NRC staff would need a detailed discussion of how the inspection program would be revised at Dresden and Quad Cities. The licensee indicated that it would provide more plant-specific information to address this concern.

The NRC staff also noted that any changes to the probabilistic risk assessment that supports the licensee's risk-informed ISI program should be discussed.

Inspection Impacts

The application states, in part, that: "The proposed alternative does not impact inspections required to be performed prior to the end of the license renewal period." This implies that the proposed alternative would not change any inservice inspections. The licensee clarified that this statement was intended to indicate that the proposed alternative would not revise any license renewal commitments. The licensee indicated that it would revise the proposed alternative to clarify this statement.

Future ISI/CISI Intervals

The application requests approval of the proposed alternative for the current inspection intervals at the facilities, but describes the benefits for the next inspection intervals. However, the NRC staff noted that approval of the proposed alternative for only the current inspection intervals cannot have any effect on a future inspection interval. Therefore, the NRC staff asked if the proposed alternative included changes to the next inspection intervals. The license clarified that the current and next inspection intervals would not overlap. In addition, the licensee stated it would revise the application to focus more on the current interval.

The NRC staff also noted that changing the start date for the next interval is a change to the requirements for the next interval. Section XI of the ASME Code establishes the pattern for the 10-year inspection interval based on the date that the plant began commercial service. Section XI only allows for certain extensions of the intervals beyond the initial pattern. When the next interval starts, the requirements in Section XI of the ASME Code are assumed to apply unless the NRC staff has approved an alternative to those requirements in advance. The licensee disagreed with this assessment, but stated that it would consider the issue.

Extension of Approved Alternatives

The application lists previously approved alternatives that "will be extended from 10 years to 12 years." The NRC staff asked if the licensee was intending to request the extension of these alternatives as part of this application or if it would be submitting separate applications in the future. The NRC staff further stated that it would prefer separate applications to avoid potential complications with accepting this application for review. The NRC staff also stated that, although not required, revisions to approved alternatives are typically submitted in their entirety with the proposed revisions marked in the application. This makes it easier for the NRC staff to review revisions to proposed alternatives.

The licensee indicated that it assumed that approved alternatives would automatically be extended if the NRC staff approved the use of the ASME Code Case N-921. The licensee noted that when one-time interval extensions had been requested in the past, licensees had not requested extension of previously approved alternatives. The licensee declined to state whether or not it was or would be requesting approval of the changes to the previously

approved alternatives. The NRC staff stated that the licensee should not assume that previously approved alternatives would automatically be extended if the NRC staff approved the proposed alternative.

Additional Issues

The application lists a proposed alternative for extension that is currently under review by the NRC staff. The NRC staff stated that an application to extend this proposed alternative should not be submitted until after the current request is approved.

Timing of Request

During the November 16, 2021, pre-application meeting, the NRC staff noted that reviewing a fleet request for a proposed alternative to use the ASME Code Case N-921 may be challenging and the licensee should consider submitting for just one or two plants that are near the end of their current ISI interval. The licensee repeatedly stated that, based on this NRC staff comment, it had limited its proposed alternative to plants that were near the end of the inspection interval. Although the NRC staff did not refute this statement during the February 25, 2022, meeting, the staff notes that the current CISI intervals for Dresden and Quad Cities do not end until 2028.

Summary of Discussion

The NRC staff noted that the statements made by the NRC staff during the meeting were not final decisions. The NRC staff understands that the licensee will be preparing a supplement to the application to clarify the scope of the request and provide plant-specific technical justification for the extension of the inspection intervals. The licensee stated that it could support providing this supplemental information by March 16, 2022. The NRC staff noted that this was not a due date, but it would support completion of the acceptance review in a timely manner. The NRC staff stated that prior to issuance of any formal request for supplemental information, the staff would notify the licensee and provide an opportunity to clarify such a request. In addition, the staff stated that it would let the licensee know if a request for an exemption to certain requirements in 10 CFR 50.55a would need to be submitted to allow implementation of the proposed alternative. If needed, such an exemption request would be reviewed in parallel with the proposed alternative.

Conclusion

The NRC staff concluded the meeting by stating that in the past few years the staff has been relooking at the regulations in 10 CFR 50.55a to consider significant changes and improvements. This effort has resulted in greater attention to how changes that would extend the inspection intervals could be accomplished through licensing. The NRC staff noted that the licensee has gotten ahead of the rulemaking effort, so it is challenging for the staff to ensure that the licensee's proposed alternative is consistent with the staff's considerations in the rulemaking process.

Public Comments

One commenter noted that the ASME Code Case N-921 was developed so that it could be implemented at any time during the inspection interval. In addition, the commenter noted that a plain language reading of 10 CFR 50.55a(z) would allow the NRC staff to authorize proposed alternatives such as the one being requested.

A representative for both Constellation and the Nuclear Energy Institute noted that the NRC staff has approved alternatives to the regulations in 10 CFR 50.55a that are not requirements in the ASME Code.

Another commenter stated that conditions have changed, as reactors are getting older and there is an increased probability of aging-related cracks on vessels.

Public meeting feedback forms were not received. Please direct any inquiries to me at 301-415-1380 or Blake.Purnell@nrc.gov.

/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

Enclosure:
List of Attendees

cc: Listserv

LIST OF ATTENDEES

FEBRUARY 25, 2022, MEETING WITH CONSTELLATION ENERGY GENERATION, LLC

Name	**Affiliation**
Blake Purnell	NRC
Brian Wittick	NRC
Nancy Salgado	NRC
Matthew Mitchell	NRC
Angela Buford	NRC
David Rudland	NRC
Michael Benson	NRC
Angelo Stubbs	NRC
Russ Haskell	NRC
Brian Lee	NRC
Gregory Suber	NRC
Charles Kreuzberger	NRC
Steve Jones	NRC
Laura Smith	NRC
Jerry Dozier	NRC
Carol Moyer	NRC
John Tsao	NRC
Chris Hunt	NRC
Thomas Loomis	Constellation
Mark Weis	Constellation
Sailaja Mokkapati	Constellation
Heather Malikowski	Constellation
Richard Swart	Constellation
Rachel Luebbe	Constellation
Dave Gudger	Constellation
Joshua Sarrafin	Constellation
Thomas Basso	Constellation/Nuclear Energy Institute
Kevin Hall	Public
Mark Pyne	Duke Energy
Daniel Lamond	GSE TrueNorth Consulting
William Steigelmann	Public

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RidsNrrPMFitzPatrick Resource
RidsNrrPMLaSalle Resource
RidsNrrPMLimerick Resource
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RidsNrrPMREGinna Resource
RidsNrrDex Resource
RidsNrrDexEmib Resource
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MBenson, NRR
AStubbs, NRR
CKreuzberger, NRR
JDozier, NRR
CMoyer, RES
JTsao, NRR
CHunt, RIII

ADAMS Accession No. ML22060A078

OFFICE	NRR/DORL/LPL3/PM	NRR/DORL/LPL3/LA	NRR/DNRL/NVIB/BC	NRR/DORL/LPL3/BC
NAME	BPurnell	SRohrer	ABuford	NSalgado (JWiebe for)
DATE	3/3/22	3/1/22	3/3/22	3/4/22
OFFICE	NRR/DORL/LPL3/PM			
NAME	BPurnell			
DATE	3/7/22			

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