

From: Scott Wall
Sent: Friday, September 6, 2024 11:18 AM
To: Brown, Jesse S:(Constellation Nuclear)
Cc: Para, Wendi:(Constellation Nuclear); Weis, Mark E:(Constellation Nuclear); Gantt, Danii M:(Constellation Nuclear)
Subject: FINAL RAI - Constellation Energy Generation, LLC – Fleet Request – Proposed Alternative to Utilize Code Case OMN-32 (L-2024-LLR-0030)

Dear Jesse Brown,

By letter dated April 30, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24122C614), Constellation Energy Generation, LLC (CEG, the licensee) requested to a proposed alternative to the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code), at the following units:

- Braidwood Station, Units 1 and 2
- Byron Station, Units 1 and 2
- Calvert Cliffs Nuclear Power Plant, Units 1 and 2
- Clinton Power Station, Unit 1
- Dresden Nuclear Power Station, Units 2 and 3
- James A. FitzPatrick Nuclear Power Plant
- LaSalle County Station, Units 1 and 2
- Limerick Generating Station, Units 1 and 2
- Nine Mile Point Nuclear Station, Units 1 and 2
- Peach Bottom Atomic Power Station, Units 2 and 3
- Quad Cities Nuclear Power Station, Units 1 and 2
- R.E. Ginna Nuclear Power Plant

Specifically, the proposed alternative requests the use of ASME Code Case OMN-32, “Alternative Requirements for Range and Accuracy of Pressure, Flow, and Differential Pressure Instruments Used in Pump Tests.”

The NRC staff has reviewed the submittal and determined that additional information is needed to complete its review. The specific question is found in the enclosed request for additional information (RAI). On September 6, 2024, the CEG staff indicated that a response to the RAIs would be provided by October 11, 2024.

If you have questions, please contact me at 301-415-2855 or via e mail at Scott.Wall@nrc.gov.

Scott P. Wall
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Docket Nos.: 50-456, 50-457, 50-454,
50-455, 50-317, 50-318,
50-461, 50-237, 50-249,
50-333, 50-373, 50-374,
50-352, 50-353, 50-220,
50-410, 50-277, 50-278,
50-254, 50-265, 50-244

Enclosure:
Request for Additional Information

cc: Listserv

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RAI (OMN-32)

REQUEST FOR ADDITIONAL INFORMATION

PROPOSED ALTERNATIVE TO AMERICAN SOCIETY OF MECHANICAL ENGINEERS

BOILER AND PRESSURE VESSEL CODE TO UTILIZE CODE CASE OMN-32

CONSTELLATION ENERGY GENERATION, LLC

BRAIDWOOD STATION, UNITS 1 AND 2

BYRON STATION, UNITS 1 AND 2

CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2

CLINTON POWER STATION, UNIT 1

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LASALLE COUNTY STATION, UNITS 1 AND 2

LIMERICK GENERATING STATION, UNITS 1 AND 2

NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

R.E. GINNA NUCLEAR POWER PLANT

DOCKET NOS. 50-456, 50-457, 50-454, 50-455, 50-317, 50-318,

50-461, 50-237, 50-249, 50-333, 50-373, 50-374, 50-352, 50-353,

50-220, 50-410, 50-277, 50-278, 50-254, 50-265, AND 50-244

By letter dated April 30, 2024 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24122C614), Constellation Energy Generation, LLC (CEG, the licensee) submitted a fleet alternative request to the U.S. Nuclear Regulatory Commission (NRC) proposing the use of an alternative to Inservice Testing (IST) requirements in specific editions and addenda of the American Society of Mechanical Engineers (ASME) *Operation and Maintenance of Nuclear Power Plants*, Division 1, OM Code: Section IST (OM Code), or its previous title, as incorporated by reference in Title 10 of the *Code of Federal Regulations* (CFR), Section 50.55a, in accordance with 10 CFR 50.55a, paragraph (z)(1) for the following CEG plants (with specified ASME OM Code Edition and Addenda):

- Braidwood Station, Units 1 and 2 (2012 Edition)
- Byron Station, Units 1 and 2 (2004 Edition through 2006 Addenda)
- Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (2012 Edition)
- Clinton Power Station, Unit 1 (2012 Edition)
- Dresden Nuclear Power Station, Units 2 and 3 (2017 Edition)
- James A. FitzPatrick Nuclear Power Plant (2004 Edition through 2006 Addenda)
- LaSalle County Station, Units 1 and 2 (LaSalle) (2004 Edition through 2006 Addenda)
- Limerick Generating Station, Units 1 and 2 (Limerick) (2012 Edition)
- Nine Mile Point Nuclear Station, Unit 1 (2012 Edition)
- Nine Mile Point Nuclear Station, Unit 2 (2012 Edition)
- Peach Bottom Atomic Power Station, Units 2 and 3 (2012 Edition)
- Quad Cities Nuclear Power Station, Units 1 and 2 (2017 Edition)
- R.E. Ginna Nuclear Power Plant (2012 Edition)

The NRC staff needs additional information to complete its review and approval of the licensee's submittal.

Mechanical Engineering & Inservice Testing Branch (EMIB) Questions

Applicable Regulation and Guidance

The NRC regulations in 10 CFR 50.55a(f)(4), "Inservice testing standards requirement for operating plants," state, in part, that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the inservice test requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in paragraphs 10 CFR 50.55a(f)(2) and (3) and that are incorporated by reference in

paragraph 10 CFR 50.55a(a)(1)(iv), to the extent practical within the limitations of design, geometry, and materials of construction of the components.

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

Alternatives to the requirements of paragraphs (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.

10 CFR 50.55a(b)(6), "Conditions on ASME OM Code Cases," states that licensees may apply ASME OM Code Cases listed in Revision 5 to NRC Regulatory Guide (RG) 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code," Revision 5, dated March 2024 (ML23291A006), as incorporated by reference in 10 CFR 50.55a, paragraph (a)(3)(iii).

Background

ASME OM Code Case OMN-6, "Alternate Rules for Digital Instruments," states that digital instruments may be selected such that the reference value does not exceed 90% of the calibration range of the instrument in lieu of the 70% of calibration range.

ASME OM Code Case OMN-32 is not currently approved for use in RG 1.192, Revision 5. The NRC staff has following comments on published Code Case OMN-32.

1. ASME OM Code Case OMN-32 does not include the requirements of ASME OM Code, Subsection ISTB, paragraph ISTB-3510(a) when a parameter is determined by an analytical method instead of measurements.
2. ASME OM Code, paragraph ISTB-3510(b)(2) of the ASME OM Code-2001 through 2004 editions including OMa-2005 Addenda states that "Digital instruments shall be selected such that the reference value does not exceed 70% of the calibrated range of the instrument." ASME OM Code, paragraph ISTB-3510(b)(2) of the ASME OMb-2006 Addenda through ASME OM Code-2022 edition states that "Digital instruments shall be selected such that the reference value does not exceed 90% of the calibrated range of the instrument." Further, Code Case OMN-6, "Alternate Rules for Digital Instruments," allows alternative requirements to ISTB-3510(b)(2) (OM-2001 through 2005a) and states that digital instruments may be selected such that the reference value does not exceed 90% of the calculated range of the instrument. The ISTB committee is requested to address how both 70% and 90% calibrations or Code Case OMN-6 are taken into account in Code Case OMN-32 while calculating the required instrument accuracy as specified in Table 1.

RAI-EMIB-01

ASME OM Code Case OMN-32 was approved by the ASME Operation and Maintenance Standards Committee in September 2023, with the NRC representative voting in the affirmative with comments. Code Case OMN-32 was subsequently published on the ASME website, but did not incorporate the NRC staff comments. The licensee proposes to adopt Code Case OMN-32, which the NRC has not accepted for use in RG 1.192 at this time. The licensee is requested to address the following aspects for the proposed implementation of Code Case OMN-32 at the Constellation Fleet nuclear power plants:

1. ASME OM Code, Subsection ISTB, paragraph ISTB-3510(a), "Accuracy," states the following:

Instrument accuracy shall be within the limits of Table ISTB-3510-1. If a parameter is determined by analytical methods instead of measurement, then the determination shall meet the parameter accuracy requirements of Table ISTB-3510-1 (e.g. flow rate determination shall be accurate to within $\pm 2\%$ of actual). For individual analog instruments, the required accuracy is percent of the full-scale. For digital instruments, the required accuracy is over the calibrated range. For a combination of instruments, the required accuracy is loop accuracy. [emphasis added]

The published ASME OM Code Case OMN-32 does not include the requirements if a licensee uses an analytical method to determine the parameters instead of an instrument.

- Please address the instrument accuracy parameters determined by the analytical method instead of an instrument (when no instrument is installed) at the CEG facilities in the Alternative Request while using Code Case OMN-32.

RAI-EMIB-02

ASME OM Code, paragraph ISTB-3510(b)(2) of the ASME OM Code-2001 through 2004 editions including OMa-2005 Addenda states that "Digital instruments shall be selected such that the reference value does not exceed 70% of the calibrated range of the instrument." ASME OM Code, paragraph ISTB-3510(b)(2) of the ASME OMb-2006 Addenda through ASME OM Code-2022 edition states that "Digital instruments shall be selected such that the reference value does not exceed 90% of the calibrated range of the instrument." Further, Code Case OMN-6, "Alternate Rules for Digital Instruments," allows alternative requirements to ISTB-3510(b)(2) (OM-2001 through 2005a) and states that digital instruments may be selected such that the reference value does not exceed 90% of the calculated range of the instrument.

- The licensee is requested to address how both 70% and 90% calibrations or Code Case OMN-6 (if used) are taken into account in Code Case OMN-32 while calculating the required instrument accuracy as specified in Table 1.

RAI-EMIB-03

Alternative Request, Section 2, second paragraph, states that CEG has verified that the currently approved Alternative and Relief Requests for all other sites listed in Table 2.1 are not impacted by the applicability of this Alternative Request.

1. Please describe any impact of this request on the authorized Alternative Request RP-04 at LaSalle for use of Code Case OMN-19, "Alternative Upper Limit for the Comprehensive Pump Test" (ML17024A265).
2. Please describe any impact of this request on the authorized Alternative Request 11-PRR-1 at Limerick for use of Code Case OMN-16, "Use of a Pump Curve for Testing" (ML20280A757) for emergency service water (ESW) pumps 0A-P548, 0B-P548, 0C-P548 and 0D-P548.

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