



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

July 28, 2023

Mr. John A. Krakuszeski
Site Vice President
Brunswick Steam Electric Plant
Duke Energy Progress, LLC
8470 River Rd., SE (M/C BNP001)
Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2 – SUMMARY
OF REGULATORY AUDIT IN SUPPORT OF ALTERNATIVE REQUEST
RA-22-0308 FOR INSERVICE INSPECTION OF THE TORUS METALLIC LINER
(EPID L-2022-LLR-0089)

Dear Mr. Krakuszeski:

By letter dated December 15, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22349A655), Duke Energy Progress, LLC (Duke Energy) requested an alternative (RA-22-0308) to certain requirements of the 2007 Edition through 2008 Addenda of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWE to conduct alternative visual examinations of the torus metallic liner at Brunswick Steam Electric Plant, Unit Nos. 1 and 2 (Brunswick).

To support its review, the U.S. Nuclear Regulatory Commission (NRC) staff conducted a virtual regulatory audit from June 5, 2023, through June 15, 2023, to support its review of the alternative request. During the regulatory audit, the NRC staff reviewed documents and held discussions with members of Duke Energy and its representatives. The regulatory audit summary is enclosed with this letter.

If you have any questions, please contact me at (301) 415-1383 or by email at Perry.Buckberg@nrc.gov.

Sincerely,

/RA/

Perry H. Buckberg, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-325 and 50-324

Enclosure:
Regulatory Audit Summary

cc: Listserv

REGULATORY AUDIT SUMMARY
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
IN SUPPORT OF ALTERNATIVE REQUEST RR-22-0308 FOR
INSERVICE INSPECTION OF THE TORUS METALLIC LINER
DUKE ENERGY PROGRESS, LLC
BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 AND 50-324

1.0 BACKGROUND

By letter dated December 15, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22349A655), Duke Energy Progress, LLC (Duke Energy, the licensee) requested an alternative (request RA-22-0308) to certain requirements of the 2007 Edition through 2008 Addenda of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWE to conduct alternative visual examinations of the torus metallic liner at Brunswick Steam Electric Plant, Unit Nos. 1 and 2 (Brunswick).

Information that the NRC staff relies upon to make the safety determination must be submitted on the docket. However, the NRC staff may review supporting information retained as records under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.71 and/or 10 CFR 54.37, which, although not required to be submitted as part of the licensing action, would help the NRC staff better understand the licensee's submitted information. To support its review of the alternative request, the NRC staff issued a regulatory audit plan on May 12, 2023 (ML23130A390), which included audit questions to the licensee. The purpose of the audit was to review the documentation related to the subject of its application (e.g., calculations and reports) that were not submitted on the Brunswick docket, to acquire additional understanding about the alternative request, and to determine whether additional information is needed to be docketed to complete the NRC staff's safety evaluation.

2.0 AUDIT ACTIVITIES

Attachment 1 of this audit summary lists the individuals that took part in or attended the audit. The NRC audit team held a virtual entrance meeting with the licensee on June 5, 2023, and the virtual regulatory audit was conducted from June 5, 2023, through June 15, 2023. Throughout the audit period, the NRC audit team used an internet-based portal provided by the licensee to review primarily non-docketed information related to the alternative request and technical discussions of the audit questions and responses were held according to the audit plan.

There were no open items from audit discussions and no deviations from the audit plan. A summary of non-docketed information provided by the licensee in response to the May 12, 2023, audit questions and June 5, 2023 through June 15, 2023 audit discussions is presented in Attachment 2 of this audit summary.

3.0 RESULTS OF THE AUDIT

The NRC staff will continue to review the documents which the licensee placed in the portal as the NRC staff begins drafting its safety evaluation. The NRC staff will draft a Request(s) for Additional Information if the safety evaluation will rely on information posted to the portal.

Attachments:

1. List of Participants
2. List of Documents Reviewed During Audit

List of Participants

U.S. Nuclear Regulatory Commission (NRC) Audit Team

| <u>Name</u> | <u>Position</u> |
|-----------------|-----------------------------------|
| Buckberg, Perry | Senior Project Manager |
| Istar, Ata | Civil Engineer |
| Tsao, John | Senior Materials Engineer |
| Lee, Brian | Safety and Plant Systems Engineer |
| Widrevitz, Dan | Materials Engineer |

Duke Energy Team

Sigmon, Chet
Vaughan, Jordan
Treadway, Ryan
Franklin, Sean
Mays, Steve
Staller, Angela
Tedder Jr., Rowland
Miller, Ryan
Goelz, John
Galloway, Heather
Duc, Joshua
Pyne, Mark
Nichols, Steven

Documents Reviewed During Audit

The licensee provided responses and supporting documents (e.g., analyses, calculations, reports, drawings, and procedures) on the document portal for the NRC Audit Team to review. Below is a summary of the documents provided.

Responses to audit questions **R1 ESEB** through **R5 ESEB** and **R6 NVIB** through **R15 NVIB** from the May 12, 2023, regulatory audit plan, with supporting documents which included:

- 0RIP-1009 - Torus Liner Revised Acceptance Criteria.pdf
- BG0249A - Design Basis Document – Torus Liner Inspections and Preservation
- Engineering Evaluation Report 94-0065 – Unit 2 Torus Re-coating and Corrosion Assessment
- Engineering Change (EC) document ECC0000420060000
 - EC0000420060000 OPT-20.5.1 Mark-ups 50000
 - EC0000420060000 Attachment A - PM 82-068 - Control point measurements 40000
 - EC0000420060000 Attachment B -1SP-94-109 - Control point measurements 20000
 - EC0000420060000 Attachment C -A Review of Trends of Corrosion Loss and Pit Depth in Long-Term Exposures 10000
 - EC0000420060000 Attachment D -Metallurgy Report Maximum Pit Depth Projection for BNP U1 U2 Torus Liners 30000
- Bio-Dur 561 Data Sheet
- NDE-NE-ALL-7402 Rev 003 Fusion Copy - Visual Examination of IWE Components
- OPT-20.5.1 – Primary Containment Inspection
- B1R21 Torus Liner Bay 1-16 Exam Report
- B1R21 2016 UCC Torus Exam Final Report
- B1R24 Torus Liner CISI AUG Exam Report
- B2R22 2015 Torus Visual VT-3 Exam Record
- B2R22 2015 UCC Torus Exam Final Report
- B2R25 March 2021 Torus Visual Exam Records
- B2R25 March 2021 UCC Torus Exam Final Report
- B2R26 February 2023 Torus Visual Exam Records
- B2R26 February 2023 UCC Project Summary
- R15 NVIB BNP1 Torus Exam Plan
- R15 NVIB BNP2 Torus Exam Plan
- Duke Entrance Meeting Acceptance Criteria Presentation
- Second and Third Interval Torus Inspection Markups
- Pit Depth Measurement Documentation
- Coating Thickness Documentation
- Responses to June 12 and June 13 Audit Team clarification questions

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ADAMS Accession No.: ML23201A204

NRR-106

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|--------|--------------------|----------------------|--------------------|
| OFFICE | NRR/DORL/LPL2-2/PM | NRR/DORL/LPL2-2/LA | NRR/DSS/SCP/BC |
| NAME | PBuckberg | RButler | BWittick |
| DATE | 7/20/2023 | 7/25/2023 | 7/25/2023 |
| OFFICE | NRR/DNRL/NVIB/BC | NRR/DEX/ESEB/BC | NRR/DORL/LPL2-2/BC |
| NAME | ABuford | ITseng (GThomas for) | DWrona |
| DATE | 7/27/2023 | 7/24/2023 | 7/28/2023 |
| OFFICE | NRR/DORL/LPL2-2/PM | | |
| NAME | PBuckberg | | |
| DATE | 7/28/2023 | | |

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