



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

January 24, 2024

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: CLINTON POWER STATION, UNIT NO. 1 – AUDIT PLAN IN SUPPORT  
OF REVIEW OF LICENSE AMENDMENT REQUEST REGARDING  
REVISION OF TECHNICAL SPECIFICATIONS RELATED TO  
REACTOR WATER CLEANUP ISOLATION (EPID L-2023-LLA-0118)

Dear Mr. Rhoades:

By letter dated August 21, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23233A168), Constellation Energy Generation, LLC (Constellation, the licensee), submitted a license amendment request (LAR) for Clinton Power Station, Unit 1, to the U.S. Nuclear Regulatory Commission (NRC). Specifically, the proposed LAR would modify several technical specifications related to reactor water cleanup isolation valve timing.

During the review of the LAR, the NRC staff identified items that require further clarification and detailed explanations. The NRC staff will conduct a regulatory audit to support its review of the LAR in accordance with the enclosed audit plan. A regulatory audit is a planned activity that includes the examination and evaluation of primarily non-docketed information. The audit will be conducted to increase the NRC staff's understanding of the LAR and may identify information that will require docketing to support the NRC staff's regulatory findings.

The audit will be conducted using an online portal and teleconferences. The audit plan and supporting materials are enclosed.

D. Rhoades

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If you have any questions, please contact me by telephone at 301-415-6606 or via e-mail at [Joel.Wiebe@nrc.gov](mailto:Joel.Wiebe@nrc.gov).

Sincerely,

*/RA/*

Joel S. Wiebe, Senior Project Manager  
Plant Licensing Branch III  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosure:  
Audit Plan

cc: Listserv

REGULATORY AUDIT PLAN  
REGARDING LICENSE AMENDMENT REQUEST TO  
MODIFY TECHNICAL SPECIFICATIONS RELATED TO  
REACTOR WATER CLEANUP ISOLATION VALVE TIMING  
CLINTON POWER STATION, UNIT 1  
CONSTELLATION ENERGY GENERATION, LLC  
DOCKET NO. 50-461

1.0 BACKGROUND

By letter dated August 21, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23233A168), Constellation Energy Generation, LLC (Constellation, the licensee), submitted a license amendment request (LAR) for Clinton Power Station, Unit 1 (CPS), to the U.S. Nuclear Regulatory Commission (NRC).

The proposed change revises the Reactor Water Cleanup (RWCU) system isolation functions that are listed in Technical Specification (TS) 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," Table 3.3.6.1-1, "Primary Containment and Drywell Isolation Instrumentation." Specifically, the proposed change increases the allowable value for Function 4.b, "Differential Flow-Timer," and renames Function 4.b as "Differential Flow Timer – High." In addition, new functions are added for a Differential Flow – High-High trip and an associated Differential Flow High-High Timer.

2.0 REGULATORY AUDIT BASES

A regulatory audit is a planned license- or regulation-related activity that includes the examination and evaluation of information that provides the technical basis for the LAR. This audit will be conducted in accordance with Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits" (ML19226A274), for the NRC staff to examine the licensee's non-docketed information with the intent to:

- Gain a better understanding of the calculations, analyses, plant operating procedures and bases underlying the LAR and confirm the staff's understanding of the LAR.
- Gain a better understanding of relevant plant design features and their implications for the LAR.
- Identify supplemental information that will need to be submitted on the docket to support the NRC staff's findings.
- Identify issues that may become requests for additional information (RAIs).

The NRC staff is using the following requirements and guidance for review of the LAR and non-docketed information during the audit.

Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix A, "General Design Criteria:"

- General Design Criterion (GDC) 4, "Environmental and dynamic effects design bases"
- GDC 54, "Piping systems penetrating containment"

The following sections of the NRC's NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [light-water reactor] Edition":

- Section 3.4.1, "Internal Flood Protection for Onsite Equipment Failures," Revision 3
- Section 3.6.1, "Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment," Revision 3
- Section 3.6.2, "Determination of Rupture Locations and Dynamic Effects Associated with the Postulated Rupture of Piping," Revision 3
- Branch Technical Position 3-3, "Protection Against Postulated Piping Failures in Fluid Systems Outside Containment," Revision 3
- Branch Technical Position 3-4 "Postulated Rupture Locations in Fluid System Piping Inside and Outside Containment," Revision 3
- Section 5.4.8 "Reactor Water Cleanup System (BWR)," Revision 3

### 3.0 AUDIT SCOPE AND DOCUMENTS NEEDED

The audit will be conducted remotely as a virtual audit over several weeks using internet access as described in Section 6.0 with several days scheduled for questions and discussion. The areas of focus for the regulatory audit are the following:

LAR Attachment 4, "Design Analysis IP-C-0132, "RWCU Differential Flow Setpoint Analysis for Detecting Large Leaks," Revision 0, Section 4.0, "INPUTS":

- 4.1 Engineering Change (EC) 636711, Rev. 0, RWCU Differential Flow Modification
- 4.2 CPS Drawings
  - 4.2.1 M10-9076, Sheet 2, Rev. B, P&ID/C&ID Diagram Reactor Water Clean-Up Sys. (RT)
  - 4.2.2 M10-9076, Sheet 7, Rev. A, P&ID/C&ID Diagram Reactor Water Clean-Up Sys. (RT)
  - 4.2.3 E02-1LD99, Sheet 107, Rev. G, Schematic Diagram Leak Detection System (LD) Leak Detection System (1E31-1050)
  - 4.2.4 M06-1076, Sheet 11, Rev. Z, Reactor Water Cleanup
  - 4.2.5 M06-1076, Sheet 15, Rev. AA, Reactor Water Cleanup
  - 4.2.6 M27-1601-01A-K, Rev. Z, Control and Instr. Piping, Drywell – Area 1, EL 737'-0"
  - 4.2.7 Isometric Piping Drawing RT19, Revision 5, RLN-016-87

LAR Attachment 5, "Design Analysis IP-C-0096, "Setpoint Calculation Reactor Water Cleanup (RWCU) System Isolation-Differential Flow Timers, 1E31R615A(B), and 1E31R616A(B)," Revision 0B, Section 4.6, "Calculations":

- 4.6.1 Calculation IP-C-0089, Rev. 0, "M&TE Uncertainty Calculation"
- 4.6.2 Calculation 3C10-1182-001, Rev. 2, "RWCU Line Break Inside Main Steam Tunnel in Containment"
- 4.6.3 Calculation 3C10-0377-001, Rev. 4, "Containment Subcompartment Analyses – RWCU Line Break"
- 4.6.5 3C10-0182-003, Rev. 3, "Containment Subcompartment Parameters for Environmental Qualification of Equipment"
- 4.6.6 3C10-0485-001, Rev. 11, "Internal Flooding Analysis"
- High Energy Line Break Calculation

Any other documentation that Constellation determines to be responsive to the NRC staff's information requests above.

The NRC staff requests the licensee to have the information above available and accessible for the NRC staff's review via a web portal within 2 weeks of the date of this audit plan. The NRC staff requests the licensee to notify the review team when an audit item is added to its portal by sending an e-mail to the NRC licensing project manager.

The staff acknowledges and will observe appropriate handling and protection of proprietary information made available for the audit. The NRC staff will not remove non-docketed information from the audit site or web portal.

## 5.0 AUDIT TEAM

- Joel Wiebe, Project Manager, NRR, Division of Operating Reactor Licensing (DORL) - [Joel.Wiebe@nrc.gov](mailto:Joel.Wiebe@nrc.gov)
- John Parillo, Technical Reviewer, NRR Division of Risk Assessment, Radiation Protection and Consequence Branch (ARCB) - [John.Parillo@nrc.gov](mailto:John.Parillo@nrc.gov)
- Ming Li, Technical Reviewer, NRR Division of Engineering and External Hazards, Instrumentation and Controls Engineering Branch (EICB) - [Ming.Li@nrc.gov](mailto:Ming.Li@nrc.gov)
- Jeff Correll, Technical Reviewer, NRR Division of Reactor Oversight, Operator Licensing and Human Factors Branch (IOLB) - [Jeff.Correll@nrc.gov](mailto:Jeff.Correll@nrc.gov)
- Fred Forsaty, Technical Reviewer, NRR Division of Safety Systems, Nuclear System Performance Branch (SNSB) - [Fred.Forsaty@nrc.gov](mailto:Fred.Forsaty@nrc.gov)
- David Nold, Technical Reviewer, NRR Division of Safety Systems, Containment and Plant Systems Branch (SCPB) - [David.Nold@nrc.gov](mailto:David.Nold@nrc.gov)
- Thang Thawn, NRR Division of Safety Systems, Containment and Plant Systems Branch (SCPB) - [Thang.Thawn@nrc.gov](mailto:Thang.Thawn@nrc.gov)

## 6.0 LOGISTICS

The audit will be conducted remotely using video and teleconferencing and a secure, online portal, established by the licensee. The audit will begin within 2 weeks of the date of this audit plan and last through February 23, 2024. The NRC will establish an audit meeting(s) (e.g., a single, multi-day audit meeting; periodic audit meetings throughout the audit period) on mutually agreeable dates and times to discuss information needs and questions arising from the NRC's

review of the audited items. The NRC's licensing project manager will inform the licensee of audit meeting dates when they are established, including the date of an audit kick-off meeting.

#### 7.0 DELIVERABLES

The NRC staff will issue an audit summary report within 90 days of the audit exit.

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