[7590-01-P]

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 72-37, 50-237, and 50-249; NRC-2024-0054]

Constellation Energy Generation, LLC;

Dresden Nuclear Power Station, Unit 2 and Unit 3;

Independent Spent Fuel Storage Installation;

Environmental Assessment and Finding of No Significant Impact

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is issuing an environmental assessment (EA) and a finding of no significant impact (FONSI) for an exemption request submitted by Constellation Energy Generation, LLC (Constellation) that would permit Dresden Nuclear Power Station (Dresden) to maintain loaded and to load 68M multi-purpose canister (MPC) with continuous basket shims (CBS) in the HI-STORM 100 Cask System at its Dresden Unit 2 and Unit 3 independent spent fuel storage installation (ISFSI) in a storage condition where the terms, conditions, and specifications in the Certificate of Compliance (CoC) No. 1014, Amendment No. 8, Revision No. 1 are not met.

DATES: The EA and FONSI referenced in this document are available on **April 1, 2024**.

ADDRESSES: Please refer to Docket ID **NRC-2024-0054** when contacting the NRC about the availability of information regarding this document. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Website:** Go to https://www.regulations.gov and search for Docket ID **NRC-2024-0054**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email:

Stacy.Schumann@nrc.gov. For technical questions, contact the individual listed in the "For Further Information Contact" section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at https://www.nrc.gov/reading-rm/adams.html. To begin the search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, at 301-415-4737, or by email to PDR.Resource@nrc.gov. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the "Availability of Documents" section.

- **NRC's PDR**: The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time (ET), Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Yen-Ju Chen, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone: 301-415-1018; email: Yen-Ju.Chen@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is reviewing an exemption request from Constellation, dated February 23, 2024, and supplemented on February 28, 2024, and March 8, 2024. Constellation is requesting an exemption, pursuant to section 72.7 of title 10 of the *Code of Federal Regulations* (10 CFR), in paragraphs 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.212(b)(11), and 72.214 that require Constellation to comply with the

terms, conditions, and specifications of the CoC No. 1014, Amendment No. 8, Revision No. 1. If approved, the exemption would allow Constellation to maintain loaded and to load MPC-68-CBS in the HI-STORM 100 Cask System at the Dresden ISFSI in a storage condition where the terms, conditions, and specifications in the CoC No. 1014, Amendment No. 8, Revision No. 1, are not met.

II. Environmental Assessment

Background

Dresden is located on the south bank of the Illinois River at the confluence of the Des Plaines and the Kankakee Rivers in Goose Lake Township, Grundy County, near the city of Morris, Illinois. Unit 2 began operating in 1970 and Unit 3 began operating in 1971. Constellation has been storing spent fuel in an ISFSI at Dresden under a general license as authorized by 10 CFR part 72, subpart K, “General License for Storage of Spent Fuel at Power Reactor Sites.” Constellation currently uses the HI-STORM 100 Cask System under CoC No. 72-1014, Amendment No. 8, Revision No. 1 for dry storage of spent nuclear fuel in a specific MPC (i.e., MPC-68M) at the Dresden ISFSI.

Description of the Proposed Action

The CoC is the NRC approved design for each dry cask storage system. The proposed action would exempt the applicant from the requirements of 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.212(b)(11), and 72.214 only as these requirements pertain to the use of the MPC-68-CBS in the HI-STORM 100 Cask System for the already loaded systems and the near-term planned loadings of the systems. The exemption would allow Constellation to maintain loaded and to load MPC-68-CBS in the HI-STORM 100 Cask System at the Dresden ISFSI, despite the MPC-68-CBS in the HI-STORM 100 Cask System not being in compliance with the terms, conditions, and specifications in the CoC No. 1014, Amendment No. 8, Revision No. 1.

The HI-STORM 100 Cask System CoC provides the requirements, conditions, and operating limits necessary for use of the system to store spent fuel. Holtec International (Holtec), the designer and manufacturer of the HI-STORM 100 Cask System, developed a variant of the design with continuous basket shims (CBS) for the MPC-68M, known as MPC-68M-CBS. Holtec originally implemented the CBS variant design under the provisions of 10 CFR 72.48, which allows licensees to make changes to cask designs without a CoC amendment under certain conditions (listed in 10 CFR 72.48(c)). After evaluating the specific changes to the cask designs, the NRC determined that Holtec erred when it implemented the CBS variant design under 10 CFR 72.48, as this was not the type of change allowed without a CoC amendment. For this reason, the NRC issued three Severity Level IV violations to Holtec. Prior to the issuance of the violations, Constellation had already loaded four MPC-68M-CBS in a HI-STORM 100 Cask System, which are safely in storage on the Dresden ISFSI pad. Additionally, Constellation plans to load one MPC-68M-CBS in the HI-STORM 100 Cask System in May 2024 and four MPC-68M-CBS in March 2025. This exemption considers the loading of the already loaded systems and the near-term planned loadings of the systems with the CBS variant basket design.

Need For The Proposed Action

Constellation requested this exemption because Constellation is currently out of compliance with NRC requirements, resulting from the previous loading of spent fuel into a storage system with the CBS variant basket design. This exemption would allow four already loaded MPC-68M-CBS in the HI-STORM 100 Cask System to remain in storage at the Dresden ISFSI. The applicant also requested the exemption in order to allow Dresden to load MPC-68M-CBS in HI-STORM 100 Cask System at the Dresden ISFSI for the future loading campaigns scheduled in May 2024 and in March 2025.

Approval of the exemption request would allow Constellation to effectively manage the spent fuel pool margin and capacity to enable refueling and offloading fuel from the reactor. It would also allow Constellation to effectively manage the availability of the specialized workforce and equipment needed to support competing fuel loading and operational activities at Dresden and other Constellation sites.

Environmental Impacts of the Proposed Action

This EA evaluates the potential environmental impacts of granting an exemption from the terms, conditions, and specifications in CoC No. 1014, Amendment No. 8, Revision No. 1. The exemption would allow four loaded MPC-68M-CBS in the HI-STORM 100 Cask System to remain loaded at the Dresden ISFSI. The exemption also would allow five additional MPC-68M-CBS to be loaded in the HI-STORM 100 Cask System in near-term loading campaigns and maintained in storage at the Dresden ISFSI.

The potential environmental impacts of storing spent nuclear fuel in NRC-approved storage systems have been documented in previous assessments. On July 18, 1990 (55 FR 29181), the NRC amended 10 CFR part 72 to provide for the storage of spent fuel under a general license in cask designs approved by the NRC. The EA for the 1990 final rule analyzed the potential environmental impacts of using NRC-approved storage casks. The EA for the HI-STORM 100 Cask System, CoC No. 1014, Amendment No. 8, Revision No. 1, (80 FR 49887), published in 2015, tiers off of the EA issued for the July 18, 1990, final rule. “Tiering” off earlier EAs is a standard process encouraged by the regulations implementing the National Environmental Policy Act of 1969 (NEPA) that entails the use of impact analyses of previous EAs to bound the impacts of a proposed action where appropriate. The Holtec HI-STORM 100 Cask System is designed to mitigate the effects of design basis accidents that could occur

during storage. Considering the specific design requirements for the accident conditions, the design of the cask would prevent loss of containment, shielding, and criticality control. If there is no loss of containment, shielding, or criticality control, the environmental impacts would not be significant.

The exemptions requested by Constellation at the Dresden site as they relate to CoC No. 1014, Amendment No. 8, Revision No. 1, for the HI-STORM 100 Cask System are limited to the use of the CBS variant basket design only for the already loaded four systems and near-term planned loadings of five systems utilizing the CBS variant basket design. The staff has determined that this change in the basket will not result in either radiological or non-radiological environmental impacts that significantly differ from the environmental impacts evaluated in the environmental assessment supporting the issuance of CoC No. 1014, Amendment No. 8, Revision No. 1. If the exemption is granted, there will be no significant change in the types or amounts of any effluents released, no significant increase in individual or cumulative public or occupational radiation exposure, and no significant increase in the potential for or consequences from radiological accidents. Accordingly, the Commission concludes that there would be no significant environmental impacts associated with the proposed action.

Alternative to the Proposed Action

The staff considered the no-action alternative. The no-action alternative (denial of the exemption request) would require Constellation to unload spent fuel from the MPC-68M-CBS in the HI-STORM 100 Cask System to bring it in compliance with the CoC terms, conditions, and specifications in the CoC No. 1014, Amendment No. 8, Revision No. 1. Unloading the cask would subject station personnel to additional radiation exposure, generate additional contaminated waste, increase the risk of a possible fuel handling accident, and increase the risk of a possible heavy load handling accident.

Furthermore, the removed spent fuel would need to be placed in the spent fuel pool, where it would remain until it could be loaded into an approved storage cask. Delay in the loading of this spent fuel into other casks could affect Constellation's ability to effectively manage the spent fuel pool capacity and reactor fuel offloading. Not allowing the two planned future loading campaigns could also affect Constellation's ability to manage pool capacity, reactor fuel offloading, and refueling. It could also pose challenges to spent fuel heat removal and impact the availability of the specialized workforce and equipment needed to support competing fuel loading and operational activities at Dresden and other Constellation sites. The NRC has determined that the no-action alternative would result in undue potential human health and safety impacts that could be avoided by proceeding with the proposed exemption, especially given that the staff has concluded in NRC's Safety Determination Memorandum, issued with respect to the enforcement action against Holtec regarding these violations, that fuel can be stored safety in the MPC-68M-CBS casks.

Agencies Consulted

The NRC provided the Illinois Emergency Management Agency and Office of Homeland Security (IL IEMA-OHS) a copy of this draft EA for review by an email dated March 15, 2024. On March 22, 2024, IL-IEMA-OHS provided its concurrence by email.

III. Finding of No Significant Impact

The environmental impacts of the proposed action have been reviewed in accordance with the requirements in 10 CFR part 51, which implement NEPA. Based upon the foregoing environmental assessment, the NRC finds that the proposed action of granting the exemption from the regulations in 10 CFR 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.212(b)(11) and 72.214, which require the licensee to comply with the terms, conditions, and specifications of the CoC, in this case limited to past and specific

future loadings of baskets with the CBS variant design, would not significantly impact the quality of the human environment. Accordingly, the NRC has determined that a finding of no significant impact (FONSI) is appropriate, and an environmental impact statement is not warranted.

IV. Availability of Documents

The documents identified in the following table are available to interested persons through ADAMS, as indicated.

Document Description	ADAMS Accession No. or *Federal Register* notice
Constellation's request for exemption, dated February 23, 2024.	ML24054A031
Supplements to request for exemption, dated February 28, 2024, and March 8, 2024.	ML24065A292 ML24068A069
Certificate of Compliance No. 1014, Amendment 8, Revision 1, dated February 10, 2016.	ML16041A233 (Package)
Notice of Violation to Holtec International, Inc., The U.S. Nuclear Regulatory Commission Inspection Report No. 07201014/2022-201, EA-23-044, dated January 30, 2024.	ML24016A190
10 CFR part 72 amendment to allow spent fuel storage in NRC-approved casks, dated July 18, 1990.	55 FR 29181
EA for part 72 amendment to allow spent fuel storage in NRC-approved casks, dated March 8, 1989.	ML051230231
Final rule for List of Approved Spent Fuel Storage Casks: HI-STORM 100 Cask System, CoC No. 1014, Amendment 8, Revision 1, dated August 18, 2015.	80 FR 49887
Safety Determination of a Potential Structural Failure of the Fuel Basket During Accident Conditions for the HI-STORM 100 and HI-STORM Flood/Wind Dry Cask Storage Systems, dated January 31, 2024.	ML24018A085
NRC email to IL IEMA-OHS, "Request: State review of the Dresden exemption request environmental assessment," dated March 15, 2024.	ML24078A377
IL IEMA-OHS email response, "IEMA-OHS review of Draft Environmental Assessment and Finding of No Significant Impact Related to Constellation's Exemption Request for Dresden Nuclear Power	ML24083A002

Station, Units 2 and 3, from Certain Requirements in 10 CFR 72.212 and 10 CFR 72.214," dated March 22, 2024.	

Dated: March 26, 2024.

For the Nuclear Regulatory Commission.

/RA/

Yoira K. Diaz-Sanabria, Chief,
Storage and Transportation Branch,
Division of Fuel Management,
Office of Nuclear Material Safety
and Safeguards.