



NUCLEAR REGULATORY COMMISSION

[Docket Nos. 72-70, 50-373, and 50-374; NRC-2024-0205]

Constellation Energy Generation, LLC;

LaSalle County Station Units 1 and 2;

Independent Spent Fuel Storage Installation;

Exemption

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) issued an exemption to Constellation Energy Generation, LLC, permitting LaSalle County Station (LSCS) to maintain four loaded and to load four new 68M multi-purpose canister with continuous basket shims in HI-STORM 100 Cask System at its LSCS Units 1 and 2 independent spent fuel storage installation in a storage condition where the terms, conditions, and specifications in the Certificate of Compliance No. 1014, Amendment No. 8, Revision No. 1, are not met.

DATES: The exemption was issued on December 20, 2024.

ADDRESSES: Please refer to Docket ID **NRC-2024-0205** 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-2024-0205**. 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. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **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: Martin Ortiz Gonzalez, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-3637; email: Martin.OrtizGonzalez@nrc.gov

SUPPLEMENTARY INFORMATION: The text of the exemption is attached.

Dated: January 2, 2025.

For the Nuclear Regulatory Commission.

Yen-Ju Chen,
*Acting Chief,
Storage and Transportation Licensing
Branch,
Division of Fuel Management,
Office of Nuclear Material Safety,
and Safeguards.*

Attachment – Exemption

NUCLEAR REGULATORY COMMISSION

Docket Nos. 72-70, 50-373, and 50-374

Constellation Energy Generation, LLC

LaSalle County Station Units 1 and 2

Independent Spent Fuel Storage Installation;

I. Background

Constellation Energy Generation, LLC (CEG), is the holder of Renewed Facility Operating Licenses Nos. NPF-11 and NPF-18, which authorize operation of the LaSalle County Station, (LSCS) Units 1 and 2 in Marseilles, Illinois, pursuant to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Domestic Licensing of Production and Utilization Facilities.” The licenses provide, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC) now or hereafter in effect.

Consistent with 10 CFR part 72, subpart K, “General License for Storage of Spent Fuel at Power Reactor Sites,” a general license is issued for the storage of spent fuel in an Independent Spent Fuel Storage Installation (ISFSI) at power reactor sites to persons authorized to possess or operate nuclear power reactors under 10 CFR part 50. CEG is authorized to operate nuclear power reactors under 10 CFR part 50 and holds a 10 CFR part 72 general license for storage of spent fuel at the LSCS ISFSI. Under the terms of the general license, CEG stores spent fuel at its LSCS ISFSI using the HI-STORM 100 Cask System in accordance with Certificate of Compliance (CoC) No. 1014, Amendment No. 8, Revision No. 1.

II. Request/Action

By a letter dated September 19, 2024 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML24263A206), CEG requested an exemption 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 that require LSCS to comply with the terms,

conditions, and specifications of the CoC No. 1014, Amendment No. 8, Revision No. 1 (ML16041A233). If approved, CEG's exemption request would accordingly allow LSCS to maintain four loaded and to load, in the future loading campaign beginning in June 2025, four Multi-Purpose Canisters (MPCs) with an unapproved, variant basket design with continuous basket shims (CBS) (i.e., MPC-68M-CBS) in the HI-STORM 100 Cask System, and thus, to maintain and load the systems in a storage condition where the terms, conditions, and specifications in the CoC No. 1014, Amendment No. 8, Revision No. 1, are not met.

CEG currently uses the HI-STORM 100 Cask System under CoC No. 1014, Amendment No. 8, Revision No. 1, for dry storage of spent nuclear fuel in MPC-68M at the LSCS ISFSI. Holtec International (Holtec), the designer and manufacturer of the HI-STORM 100 Cask System, developed a variant of the design with CBS for the MPC-68M, known as MPC-68M-CBS. Holtec performed a non-mechanistic tip-over analysis with favorable results and implemented the CBS variant design under the provisions of 10 CFR 72.48, "Changes, tests, and experiments," 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 is not the type of change allowed without a CoC amendment. For this reason, the NRC issued three Severity Level IV violations to Holtec (ML24016A190).

Prior to the issuance of the violation, CEG had loaded four MPC-68M-CBS in the HI-STORM 100 Cask System, which are safely in storage at the LSCS ISFSI. CEG's future loading campaign for the LSCS ISFSI includes loading four MPC-68M-CBS in the HI-STORM 100 Cask System beginning in June 2025. While Holtec was required to submit a CoC amendment to the NRC to seek approval of the CBS variant design, such a process will not be completed in time to inform decisions for this future loading campaign. Therefore, CEG submitted this exemption request in order to allow for the continued storage of the four already loaded MPC-68-CBS, and future loading of four

MPC-68M-CBS, beginning in June 2025, at the LSCS ISFSI. This exemption is limited to the use of MPC-68M-CBS in the HI-STORM 100 Cask System only for the four already loaded canisters and the specific planned loading of four new canisters beginning in June 2025.

III. Discussion

Pursuant to 10 CFR 72.7, "Specific exemptions," the Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations of 10 CFR part 72 as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

A. The Exemption is Authorized by Law

This exemption would allow CEG to maintain four loaded and to load four MPC-68M-CBS in the future loading campaign beginning in June 2025, in the HI-STORM 100 Cask System at its LSCS 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. CEG is requesting an exemption from the provisions in 10 CFR part 72 that require the licensee to comply with the terms, conditions, and specifications of the CoC for the approved cask model it uses. Section 72.7 allows the NRC to grant exemptions from the requirements of 10 CFR part 72. This authority to grant exemptions is consistent with the Atomic Energy Act of 1954, as amended, and is not otherwise inconsistent with NRC's regulations or other applicable laws. Additionally, no other law prohibits the activities that would be authorized by the exemption. Therefore, the NRC concludes that there is no statutory prohibition on the issuance of the requested exemption, and the NRC is authorized to grant the exemption by law.

B. The Exemption Will Not Endanger Life or Property or the Common Defense and Security

This exemption would allow CEG to maintain four loaded and to load four MPC-68M-CBS in the future loading campaign beginning in June 2025, in the HI-STORM 100 Cask System at the LSCS 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. In support of its exemption request, CEG asserts that issuance of the exemption would not endanger life or property because the administrative controls the applicant has in place prevent a tip-over or handling event, and that the containment boundary would be maintained in such an event. CEG relies, in part, on the approach in the NRC's Safety Determination Memorandum (ML24018A085). The NRC issued this Safety Determination Memorandum to address whether, with respect to the enforcement action against Holtec regarding this violation, there was any need to take an immediate action for the cask systems that were already loaded with non-compliant basket designs. The Safety Determination Memorandum documents a risk-informed approach concluding that, during the design basis event of a non-mechanistic tip-over, the fuel in the basket in the MPC-68M-CBS remains in a subcritical condition.

CEG also provided site-specific technical information, including information explaining why the use of the approach in the NRC's Safety Determination Memorandum is appropriate for determining the safe use of the CBS variant baskets at the LSCS ISFSI. Specifically, CEG described that the analysis of the tip-over design basis event that is relied upon in the NRC's Safety Determination Memorandum, which demonstrates that the MPC confinement barrier is maintained, is documented in the updated final safety analysis report (UFSAR) for the HI-STORM 100 Cask System CoC No. 1014, Amendment 8, Revision No. 1, that is used at the LSCS site. CEG also described its administrative controls for handling of the HI-STORM 100 Cask System at the LSCS ISFSI to prevent a tip-over or handling event. Those controls include operational procedures that demonstrate the system is handled with a single failure proof device in accordance with NUREG-0554 (ML110450636), "Single-Failure-Proof Cranes for Nuclear Power Plants, NUREG-0612, "Control of Heavy Loads at Nuclear

Power Plants” (ML070250180), and ANSI N14.6, “for Radioactive Materials – Special Lifting Devices for Shipping Containers Weighing 10 000 Pounds (4500 kg) or More,” and employing redundant drop protection features which comply with CoC No. 1014, Amendment 8, Revision No. 1, Appendix A.

Additionally, CEG provided specific information from LSCS’s 72.212 Evaluation Report, Revision 9, indicating that during the design basis event of a non-mechanistic tip-over, LSCS’s ISFSI would meet the requirements in 10 CFR 72.104, “Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS,” and 10 CFR 72.106, “Controlled area of an ISFSI or MRS.” Specifically, CEG described that, in the highly unlikely event of a tip-over, any potential fuel damage from a non-mechanistic tip-over event would be localized, the confinement barrier would be maintained, and the shielding material would remain intact. Coupled with the distance of the LSCS ISFSI to the site area boundary, CEG concluded that compliance with 72.104 and 72.106 is not impacted by approving this exemption request.

The NRC staff reviewed the information provided by CEG and concludes that issuance of the exemption would not endanger life or property because the administrative controls that CEG has in place at the LSCS ISFSI sufficiently minimize the possibility of a tip-over or handling event, and that the containment boundary would be maintained in such an event. The staff confirmed that these administrative controls are documented in the technical specifications and UFSAR for the HI-STORM 100 Cask System CoC No. 1014, Amendment No. 8, Revision No. 1, that is used at the LSCS site. In addition, the staff confirmed that the information provided by CEG regarding LSCS’s 72.212 Evaluation Report, Revision 9, demonstrates that the consequences of normal and accident conditions would be within the regulatory limits of the 10 CFR 72.104 and 10 CFR 72.106. The staff also determined that the requested exemption is not related to any aspect of the physical security or defense of the LSCS ISFSI; therefore, granting the exemption would not result in any potential impacts to common defense and security.

For these reasons, the NRC staff has determined that under the requested exemption, the storage system will continue to meet the safety requirements of 10 CFR part 72 and the offsite dose limits of 10 CFR part 20 and, therefore, will not endanger life or property or the common defense and security.

C. The Exemption is Otherwise in the Public Interest

The proposed exemption would allow the four already loaded MPC-68M-CBS in the HI-STORM 100 Cask System to remain in storage at the LSCS ISFSI, and allow CEG to load four MPC-68M-CBS in the HI-STORM 100 Cask System in the future loading campaign beginning in June 2025, at the LSCS ISFSI, even though the CBS variant basket design is not part of the approved CoC No. 1014, Amendment No. 8, Revision No. 1. According to CEG, the exemption is in the public interest because being unable to load fuel into dry storage in the future loading campaign would impact CEG's ability to offload fuel from the LSCS reactor units, consequently impacting continued safe reactor operation.

CEG stated that further delaying the future loading campaign would impact its ability to effectively manage the margin to full core discharge capability in the LSCS Units 1 and 2 spent fuel pools. The low spent fuel pool capacity would make it difficult to refuel and present potential risks to fuel handling operations. In addition, a crowded spent fuel pool would challenge the decay heat removal demand of the pool and increase the likelihood of a loss of fuel pool cooling event and a fuel handling accident. Furthermore, CEG loading campaigns are scheduled based on availability of the specialized work force and equipment that is shared throughout the CEG fleet. These specialty resources support multiple competing priorities, including refueling outages, loading campaigns, fuel pool cleanouts, fuel inspections, fuel handling equipment upgrades and maintenance, fuel sipping, new fuel receipt, and crane maintenance and upgrades. Therefore, the available windows to complete cask loading campaigns are limited, and any delays would have a cascading impact on other scheduled specialized activities. CEG also considered requesting that Holtec provide eight (8) fully compliant

canisters for the June 2025 campaign; however, CEG expects that Holtec will not be able to meet this request based on current manufacturing schedules. Additionally, CEG considered delaying the start of the 2025 campaign until Amendment 19 of the HISTORM 100 CoC is approved. This delay would result in the LSCS ISFSI campaign needing to pull specialty resources which would otherwise be required to support other CEG refueling and ISFSI campaigns.

For the reasons described by CEG in the exemption request, the NRC agrees that it is in the public interest to grant the exemption. If the exemption is not granted, in order to comply with the CoC, CEG would have to unload MPC-68M-CBS from the HISTORM 100 Cask System at the LSCS ISFSI and reload into the older design MPC-68M to restore compliance with the terms, conditions, and specifications of the CoC. This would subject onsite personnel to additional radiation exposures and increase the risk of a possible fuel handling accident. Furthermore, the removed spent fuel would need to be placed in the spent fuel pool until it can be loaded into another storage cask or remain in the spent fuel pool if it is not permitted to be loaded into CBS casks for the future loadings. As described by CEG, this scenario would affect CEG's ability to effectively manage the margin to full core discharge capacity and present a potential reactivity management risk to fuel handling operations during pre- and post-refueling outages at LSCS. In addition, the rescheduling of the specialized resources for the future loading campaign would impact the operations of LSCS.

Therefore, the staff concludes that approving the exemption is in the public interest.

Environmental Consideration

The NRC staff also considered whether there would be any significant environmental impacts associated with the exemption. For this proposed action, the NRC staff performed an environmental assessment pursuant to 10 CFR 51.30. The environmental assessment concluded that the proposed action would not significantly impact the quality of the human environment. The NRC staff concluded that the

proposed action would not result in any changes in the types or amounts of any radiological or non-radiological effluents that may be released offsite, and there would be no significant increase in occupational or public radiation exposure because of the proposed action. The environmental assessment and the finding of no significant impact was published on December 20, 2024 (89 FR 104234).

IV. Conclusion

Based on these considerations, the NRC has determined that, pursuant to 10 CFR 72.7, the exemption is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, the NRC grants CEG an exemption from the requirements of §§ 72.212(a)(2), 72.212(b)(3), 72.212(b)(5)(i), 72.212(b)(11), and 72.214 with respect to the ongoing storage of four MPC-68M-CBS in the HI-STORM 100 Cask System and a future loading in the HI-STORM 100 Cask System of four new MPC-68M-CBS beginning in June 2025.

This exemption is effective upon issuance.

Dated: December 20, 2024.

For the Nuclear Regulatory Commission.

/RA/

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[FR Doc. 2025-00116 Filed: 1/6/2025 8:45 am; Publication Date: 1/7/2025]