



## **NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 72-69 and 50-440; NRC-2024-0082]**

### **Vistra Operations Company LLC.; Perry Nuclear Power Plant, Unit 1; 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 Vistra Operations Company LLC<sup>1</sup> permitting Perry Nuclear Power Plant (Perry) to load the Holtec 89 position multi-purpose canister with continuous basket shims in HI-STORM Flood/Wind Multipurpose Canister Storage System at its Perry Unit 1 Independent Spent Fuel Storage Installation in a storage condition where the terms, conditions, and specifications in the Certificate of Compliance No. 1032, Amendment No. 5 are not met.

**DATES:** The exemption was issued on May 8, 2024.

**ADDRESSES:** Please refer to Docket ID **NRC-2024-0082** 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-2024-0082**. Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: [Stacy.Schumann@nrc.gov](mailto: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

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<sup>1</sup> Effective March 1, 2024, the facility operating license for Perry Nuclear Power Plant was transferred from Energy Harbor Nuclear Generation LLC (owner) and Energy Harbor Nuclear Corp. (operator) to Energy Harbor Nuclear Generation LLC (owner) and Vistra Operations Company LLC (ADAMS Package Accession No. ML24057A092). Upon completion of this license transfer, Vistra Operations Company LLC assumed the responsibility for all licensing actions under NRC review at the time of the transfer and requested that the NRC continue its review of these actions (ADAMS Accession No. ML24054A498).

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](mailto: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](mailto: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:** Bernard White, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone: 301-415-6577; email: [Bernard.White@nrc.gov](mailto:Bernard.White@nrc.gov).

**SUPPLEMENTARY INFORMATION:** The text of the exemption is attached.

Dated: May 9, 2024.

For the Nuclear Regulatory Commission.

**Christian Jacobs,**  
*Acting Chief,*  
*Storage and Transportation Licensing*  
*Branch,*  
*Division of Fuel Management,*  
*Office of Nuclear Material Safety,*  
*and Safeguards.*

**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 72-69, and 50-440; NRC-2024-0082]**

**Vistra Operations Company LLC;**

**Perry Nuclear Power Plant, Unit 1;**

**Independent Spent Fuel Storage Installation;**

**I. Background**

Vistra Operations Company LLC (VistraOps) is the holder of Facility Operating License No. NPF-58, which authorizes operation of the Perry Nuclear Power Plant, Unit 1 (Perry) in North Perry, Ohio, pursuant to part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR), “Domestic Licensing of Production and Utilization Facilities.” The license provides, 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. VistraOps 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 Perry ISFSI. Under the terms of the general license, VistraOps stores spent fuel at its Perry ISFSI using the HI-STORM Flood/Wind (F/W) Multipurpose Canister (MPC) Storage System in accordance with Certificate of Compliance (CoC) No. 1032, Amendment No. 5.

**II. Request/Action**

By a letter dated February 27, 2024 (Agencywide Documents Access and Management System [ADAMS] ML24058A180), by Energy Harbor Nuclear Corporation<sup>1</sup>

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<sup>1</sup> Effective March 1, 2024, the facility operating license for Perry Nuclear Power Plant was transferred from Energy Harbor Nuclear Generation LLC (owner) and Energy Harbor Nuclear Corp. (operator) to Energy Harbor Nuclear Generation LLC (owner) and Vistra Operations Company LLC (ADAMS Accession No. ML24057A075). Upon completion of this license transfer,

and supplemented by VistraOps on March 22, 2024 (ML24082A132), VistraOps 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 Perry to comply with the terms, conditions, and specifications of the CoC No. 1032, Amendment No. 5 (ML20163A701). If approved, the VistraOps exemption request would accordingly allow Perry to load two Multi-Purpose Canisters (MPC) with an unapproved variant basket design with continuous basket shims (CBS) (i.e., MPC-89-CBS), in the HI-STORM F/W MPC Storage System beginning in August, 2024, and thus, to load the systems in a storage condition where the terms, conditions, and specifications in the CoC No. 1032, Amendment No. 5 are not met.

VistraOps currently uses the HI-STORM F/W MPC Storage System under CoC No. 1032, Amendment No. 5, for dry storage of spent nuclear fuel at the Perry ISFSI. Holtec International (Holtec), the designer and manufacturer of the HI-STORM F/W MPC Storage System, developed a variant of the design with CBS for the MPC-89, known as MPC-89-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).

VistraOps’s near-term loading campaign for the Perry ISFSI, in addition to other loadings of non-CBS MPCs, also includes plans to load two MPC-89-CBS in the HI-STORM F/W MPC Storage System in August 2024. While Holtec was required to submit a CoC amendment to the NRC to seek approval of the CBS variant design, such a

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Vistra Operations Company LLC (VistraOps) assumed the responsibility for all licensing actions under NRC review at the time of the transfer and requested that the NRC continue its review of these actions (ADAMS Accession No. ML24054A498).

process will not be completed in time to inform decisions for this near-term loading campaign. Therefore, VistraOps submitted this exemption request in order to allow for the future loadings of the two MPC-89-CBS canisters beginning in August 2024 at the Perry ISFSI. This exemption is limited to the use of two MPC-89-CBS in the HI-STORM F/W MPC Storage System for the specific near-term planned loading beginning in August 2024.

### **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 VistraOps to load two MPC-89-CBS canisters in the HI-STORM F/W MPC Storage System beginning in August 2024 at its Perry ISFSI in a storage condition where the terms, conditions, and specifications in the CoC No. 1032, Amendment No. 5, are not met. VistraOps 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 VistraOps to load two MPC-89-CBS in the HI-STORM F/W MPC Storage System beginning in August 2024 at the Perry ISFSI in a storage condition where the terms, conditions, and specifications in the CoC No. 1032, Amendment No.5 are not met. In support of its exemption request, VistraOps asserts that issuance of the exemption would not endanger life or property because a tip-over or handling event is administratively controlled, and that the containment boundary would be maintained in such an event. VistraOps 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-89-CBS remains in a subcritical condition.

VistraOps also provided site-specific technical information, as supplemented, 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 Perry ISFSI. Specifically, VistraOps 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 F/W MPC Storage System CoC No. 1032, Amendment No. 5 that is used at the Perry site. VistraOps also described its administrative controls for handling of the HI-STORM F/W MPC Storage System at the Perry ISFSI to prevent a tip-over or handling event. Those controls include ensuring that all lifts of the cask will be conducted in accordance with Perry's existing heavy load program. The fuel handling building crane at Perry was upgraded to single failure proof. Also, evaluations pursuant to 10 CFR 50.59, "Changes, tests and experiments," have been performed demonstrating that heavy load lifts and the

use of the HI-STORM F/W MPC Storage System are in compliance with Perry's existing heavy load requirements. In addition, transportation of a loaded HI-STORM F/W MPC Storage System into and out the fuel handling building is accomplished using a zero profile transporter with Hilman rollers that provides support from underneath. The applicant stated that transportation of a loaded HI-STORM storage cask between the fuel handling building and the ISFSI is accomplished by the Holtec HI-TRAN, which meets the requirements of CoC No. 1032, Amendment No. 5. VistraOps provided information from "Perry Nuclear Power Plant 10 CFR 72.212 Evaluation Report," Revision 2, which evaluated the seismic stability of the transport of the overpack and during stackup. VistraOps report concluded that both HI-STORM/HI-TRAC Stackup and transfer of the loaded HI-STORM overpack by HI-TRAN remains kinematically stable and does not overturn during a seismic event.

Additionally, VistraOps provided specific information from Perry's site evaluation from its "Perry Nuclear Power Plant 10 CFR 72.212 Evaluation Report," Revision 2, which states that during the design basis event of a non-mechanistic tip-over, Perry's ISFSI would meet the requirements in 10 CFR 72.106, "Controlled area of an ISFSI or MRS [monitored retrievable storage installation]." Specifically, VistraOps stated that section 12.2 of the UFSAR for the HI-STORM F/W MPC Storage System shows that there are no accidents that significantly affect the shielding analyses. In addition, the minimum distance from the ISFSI to the site boundary at the Perry ISFSI is 428 meters, compared to the 100-meter distance in the UFSAR. 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 storage cask shielding material would remain intact. Coupled with the distance of the Perry ISFSI to the site area boundary, VistraOps concluded that compliance with §§ 72.104, "Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS," and 72.106 is not impacted by approving this exemption request.

The NRC staff reviewed the information provided by VistraOps and concludes that issuance of the exemption would not endanger life or property because the administrative controls VistraOps has in place at the Perry ISFSI sufficiently minimize the possibility of a tip-over or handling event, and that the containment boundary would be maintained if such an event were to occur. The staff confirmed that the technical specifications for the CoC No. 1032, Amendment No. 5, for the HI-STORM F/W MPC Storage System used at the Perry site contain restrictions on lifting the transfer cask or storage cask when loaded with fuel. Specifically, technical specification 5.2.c.2 authorizes lifting to any height as long as the horizontal cross beam and any lifting attachments used to connect the load to the lifting equipment are designed, fabricated, operated, tested, inspected, and maintained in accordance with applicable sections and guidance of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Technical Activity A-36," Section 5.1, including applicable stress limits from American National Standards Institute N14.6, "Radioactive Materials - Special Lifting Devices For Shipping Containers Weighing 10 000 Pounds (4500 Kg) Or More." In addition, the staff confirmed that the information provided by VistraOps regarding Revision 2 of the "Perry Nuclear Power Plant 10 CFR 72.212 Evaluation Report," 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 Perry 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 VistraOps to load two MPC-89-CBS in the HI-STORM F/W MPC Storage System in August 2024, at the Perry ISFSI, even though the CBS variant basket design is not part of the approved CoC No. 1032, Amendment No. 5. According to VistraOps, the exemption is in the public interest because not being able to load fuel into the two MPC-89-CBS baskets during the August 2024 loading campaigns would impact VistraOps's ability at Perry to maintain full-core offload capability, consequently increasing risk and challenges to continued safe reactor operation.

VistraOps stated that to delay the August 2024 loading of the two MPC-89-CBS baskets at Perry would impact the ability to maintain a healthy margin in the spent fuel pool in support of a full-core discharge capability. VistraOps stated that not loading the two MPC-89-CBS spent fuel canisters for storage on the ISFSI pad in August 2024, decreases the margin to full-core offload to 555 open cells in the spent fuel pool. There are two refueling outages planned for 2025 and 2027 that would decrease the full-core offload margin to an insufficient number of open fuel cells (a deficit of 25 open cells) due to the planned discharges of 288 and 292 fuel bundles, respectively. That is, the Perry spent fuel pool would lose full-core offload in 2027 and would not regain full-core offload, and margin to full-core offload, until the 2028 spent fuel loading campaign. Having no full-core offload capability for over a year of operation at Perry is an unnecessary risk to the operation of the plant, spent fuel pool inventory and operations. In order to regain full-core offload prior to the 2028 spent fuel loading campaign, non-fuel components stored in the pool would need to be relocated, which involves additional resources, dose, and risk to perform the relocations.

For the reasons described by VistraOps in its 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, VistraOps would have to keep spent fuel in the spent fuel pool if it is not permitted to be loaded into casks in the August 2024 spent fuel loading, thus impacting Perry's ability to effectively manage the margin for full-core

discharge capacity. As explained by VistraOps, increased inventory of fuel in the spent fuel pool could result in the need for relocation or movement of non-fuel components and, therefore, an increase in worker doses and the potential for accidents that accompany increased movement of radioactive material. Moreover, should spent fuel pool capacity be reached, the ability to refuel the operating reactor unit is challenged, thus potentially impacting continued reactor operations.

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 May 8, 2024 (89 FR 38926).

#### **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 VistraOps 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 loading of two HI-STORM F/W MPC Storage System in MPC-89-CBS beginning in August 2024.

This exemption is effective upon issuance.

Dated: May 8, 2024.

For the Nuclear Regulatory Commission.

**/RA/**

Yaira Diaz-Sanabria, Chief,  
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Office of Nuclear Material Safety,  
and Safeguards.

[FR Doc. 2024-10585 Filed: 5/14/2024 8:45 am; Publication Date: 5/15/2024]