



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

October 14, 2022

Alyse Peterson, P.E.
New York State Energy Research
and Development Authority
17 Columbia Circle
Albany, NY 12203-6399

SUBJECT: RESPONSE TO COMMENTS ON EXEMPTION RELATED TO ALLOWABLE
CONTENTS FOR THE CERTIFICATE OF COMPLIANCE NO. 1014, HI-STORM
100S VERSION E CASK

Dear Alyse Peterson:

This is in response to your letter dated August 1, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22215A044), in which you provided comments and suggestions related to an exemption request submitted by Holtec Decommissioning International, LLC (HDI), on behalf of Holtec Indian Point 2, LLC (IP2) and Holtec Indian Point 3, LLC (IP3). HDI requested an exemption to load up to three MPC-32Ms, using Amendment No. 15 of the Holtec International (Holtec) Certificate of Compliance (CoC) No. 1014 for the HI-STORM 100 storage system (ADAMS Accession No. ML22083A191), with either up to thirty-two californium-252 (Cf-252) and antimony beryllium (Sb-Be) Neutron Source Assemblies (NSAs) with sufficient cooling time, or a combination of up to five primary plutonium beryllium (Pu-Be) NSAs and the remaining basket locations with Cf-252 and Sb-Be NSAs with sufficient cooling time. Further, if approved, the exemption would permit HDI to load the Cf-252 and Sb-Be NSAs in any location in the basket and the Pu-Be NSAs such that one is located in the center of the basket and one NSA is located in each of the four basket quadrants.

Your letter included three comments and associated recommendations. Broadly speaking, your comments focused on neutron dose, the as low as reasonably achievable (ALARA) principle, and transportability/retrievability. Based on these comments, your letter recommended the following: (1) the NRC should require Holtec to perform an updated and conservative dose evaluation of a loaded HI-STORM cask with five Pu-Be NSAs and 32 secondary NSAs;¹ (2) the NRC should require Holtec to provide an evaluation of the potential increase in worker exposure during loading operations for NRC review; and (3) the NRC should require Holtec to provide revised criticality analyses to ensure that NRC's retrievability requirements for eventual offsite transportation of the spent fuel casks are met.

¹ Your comments were in response to the initial version of the environmental assessment and finding of no significant impacts the NRC staff shared with you on July 19, 2022 (ADAMS Accession No. ML22208A029). HDI subsequently clarified the scope of its exemption request during a call on September 20, 2022 (ADAMS Accession No. ML22264A045). This additional information led the NRC staff to change its description of the activities that would be permitted by the exemption if the NRC staff granted it. As such, the NRC staff is interpreting this suggestion to be for the performance of an updated and conservative dose evaluation of a loaded HI-STORM cask in line with this new description of the activities that would be permitted under the exemption, if the NRC granted it.

The NRC staff is considering the first two comments as part of its evaluation of the exemption request. If the NRC approves the exemption request, it will issue a safety evaluation report that will discuss the issues underlying these comments—namely, neutron dose and the ALARA principle.

With regard to the third recommendation, your letter stated that “[i]t is unclear whether the proposed loading of up to five NSAs, including NSAs in a damaged fuel assembly, into an individual cask would result in loaded onsite storage casks that will fail to meet transportation requirements. . . . This seems to warrant analyzing the configuration of an NSA contained in a damaged assembly (together in a damaged fuel can) for transportation.” To clarify, the entity requesting the exemption is a Title 10 of the *Code of Federal Regulations* (10 CFR) Part 72 general licensee. The regulations that would require a criticality analysis related to transportation are found in 10 CFR Part 71 and, therefore, do not apply to a Part 72 general licensee. The NRC does not have any applicable regulations that would require the analysis you seek. This is consistent with how the NRC normally approves storage cask CoCs; the existence of an approved transportation cask is not a requirement for the approval of a CoC.

Part 72 does have a retrievability requirement. Under 10 CFR 72.122(l), “[s]torage systems must be designed to allow ready retrieval of spent fuel, high level radioactive waste, and reactor-related [greater than class C] waste for further processing or disposal.” As an initial matter, neither this regulation, nor any other Part 72 regulation related to retrievability imposes the Part 71 transportation requirements on Part 72 licensees. As discussed in NUREG 2215,² applicants can meet this requirement by demonstrating ready retrieval of spent nuclear fuel (SNF), through one of the following options, either alone or in combination:

- Remove individual or canned SNF assemblies from wet or dry storage.
- Remove a canister loaded with SNF assemblies from a storage cask or overpack.
- Remove a cask loaded with SNF assemblies from the storage location.

Although under 10 CFR 72.13(b)-(d), 10 CFR 72.122(l) applies to general and specific licensed independent spent fuel storage installations (ISFSIs), not CoC holders, CoC holders can choose to incorporate retrievability aspects into their designs. If the CoC holder includes sufficient information to demonstrate that the system is consistent with one of the options in NUREG 2215, general licensed ISFSIs that use those systems can rely upon that demonstration of retrievability, assuming the general licensed ISFSI’s 10 CFR 72.212 evaluation demonstrates that the site parameters are enveloped by the cask design.

In this instance, Chapter 3 of CoC No. 1014 Amendment No. 15 Final Safety Analysis Report (FSAR) contains information related to retrievability. The NRC’s analysis of that information and determination that the system meets the retrievability requirement as documented in chapter 3 of the CoC No. 1014 Amendment No. 15 safety evaluation report (ADAMS Accession No. ML21118A871). This exemption, if granted, would not affect the NRC’s determination that the CoC system satisfies the 10 CFR 72.122(l) requirement, and thus, would not affect the

² Although your letter cited Interim Staff Guidance 2, Revision 2, the staff is citing NUREG-2215 because the staff incorporated the retrievability guidance from Interim Staff Guidance 2, Revision 2 into NUREG 2215 “Standard Review Plan for Spent Fuel Dry Storage Systems and Facilities,” section 16.4.5 (ADAMS Accession No. ML20121A190).

licensee's ability to rely upon that determination to satisfy the 10 CFR 72.122(l) retrievability requirements.

The NRC staff is performing a thorough technical review of the exemption request and will only approve the exemption if it finds the exemption meets the criteria in 10 CFR 72.7. Ongoing NRC inspections ensure that spent fuel is safely loaded and stored in accordance with NRC requirements. If the NRC were to find a regulatory noncompliance or otherwise identified a concern with the safe storage of the spent fuel, the NRC would evaluate the issue to identify the best approach for protecting the public health and safety and the environment. Further, after loading operations at the facility are complete, the NRC will continue to routinely perform safety inspections of the facility as part of its ongoing oversight program to protect the public health and safety and the environment.

If you have any questions, please contact me or Chris Allen of my staff at (301) 415-6877.

Sincerely,

 Signed by Helton, Shana
on 10/14/22

Shana R. Helton, Director
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

CAC No. 001028
Docket Nos.: 72-51, 72-1014,
50-247 and 50-286
EPID No.: L-2022-LLE-0011

Response to Comments for Exemption from an Allowable Contents Requirement Contained in the Certificate of Compliance No. 1014 for the HI-STORM 100S Version E Cask DATE October 14, 2022

DISTRIBUTION: Docket Nos. 72-51, 72-1014, 50-247, 50-286

SHelton, NMSS/DFM

ADimitriadis, R-I/DNMS/DIRHB

BDeBoer, R-I/DNMS/DIRHB

KWarner, R-I/DNMS/DIRHB

DTiff, R-I/EAGLT

KSturzebecher, NMSS/DWUP/RDB

JMarshall, NMSS/DUWP

CRegan, NMSS/REFS

ADAMS Accession No.: Ltr ML22234A063

OFFICE	NMSS/DFM/STLB	NMSS/DFM/STLB	OGC/GCRPS /HLWFCNS/NLO	NMSS/DFM
NAME	WWheatley	WWAllen	WAMertz	NMShelton
DATE	Sep 12, 2022	Sep 9, 2022	Oct 6, 2022	Oct 14, 2022

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