



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

November 21, 2022

MEMORANDUM TO: Carrie Safford, Deputy Director
Division of Fuel Management
Office of Nuclear Material
Safety and Safeguards

FROM: Bernard White, Senior Project Manager
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material
Safety and Safeguards

A handwritten signature in black ink that reads "Bernard White".

Signed by White, Bernard
on 11/21/22

SUBJECT: SUMMARY OF SEPTEMBER 9, 2022, MEETING WITH TN AMERICAS
LLC TO DISCUSS THE FIRST REQUEST FOR ADDITIONAL
INFORMATION ON THE TN EAGLE-STC PACKAGE APPLICATION

Background

On December 30, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20365A018), as supplemented on April 29, 2021 (ML21119A307), TN Americas LLC, (TN) submitted an application for package approval for the Model No. TN Eagle-STC spent fuel package.

On September 9, 2022, the U.S. Nuclear Regulatory Commission (NRC) held a virtual meeting at the request of TN. TN requested the meeting to clarify some questions in the NRC's first request for additional information (RAI) on TN's application for the TN Eagle-STC package. NRC issued the RAI on May 13, 2022 (ML22112A057), The list of meeting attendees is provided as Enclosure 1. The meeting slides are provided as Enclosure 2.

Discussion

TN requested clarification on five questions and discuss a revision to the package leak testing proposed. TN asked for clarification on the level of detail expected by the NRC in TN's response to questions 8-1, 8-2, 8-3 and 2-1 in the RAI. TN also wanted to understand the basis for NRC's question 9-3 and discuss an alternative to leak testing the thick-walled containment vessel.

CONTACT: Bernard White, NMSS/DFM
(301) 415-6577

In question 8-1, NRC is requesting that the operating procedures include general actions for licensees to perform if, during unloading, the licensee determines that the contamination or radiation level measurement exceed regulatory requirements. Section 8.4.2.1, "Receipt of Package from Carrier," in NUREG-2216, "Standard Review Plan for Transportation Packages for Spent Fuel and Radioactive Material," states that the staff should ensure that the package operating procedures include actions to be taken if contamination or radiation levels exceed those listed in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71. NRC also noted that it occasionally receives notifications from its licensees that, after package receipt at its destination, measurements of contamination or radiation levels have exceeded the requirements in 10 CFR 71.87(i) or 10 CFR 71.47, respectively, even though contamination and dose rate measurements prior to shipment did not exceed the requirements.

The NRC indicated that, in a response from TN for question 8-1, it was not looking for detailed procedures to be followed as each site may have to tailor the responses based on its situation, but that it is looking for general guidance to a recipient on radiation protection guidelines that will also ensure that the packaging and contents remain undamaged, and personnel safe from overexposures.

In question 8-2, NRC requested justification that review of loading reports is adequate to determine that the dry shielded canister is not damaged during insertion or removal from the horizontal storage module or an inspection process to verify that the dry shielded canister is in unimpaired physical condition. NRC stated that, based on lessons learned from canister handling movements at independent spent fuel storage installations, the dry shielded canister may be scratched during movement. In addition, the licensee must comply with the requirements in 10 CFR 71.87(b) and determine that the package "is in unimpaired physical condition except for superficial defects such as marks or dents." It is not clear to the NRC staff whether the loading procedures in Section 8.4.1, "DSC Evaluation for Transport" of the safety analysis report provided adequate inspection and acceptance criteria to meet the requirements in 10 CFR 71.87(b). It is also not clear to staff what information is captured in the loading reports and whether that is sufficient to ensure that the canisters are in unimpaired physical condition.

In questions 8-3 and 2-1, the staff requested information on potential lifting of the package, during transport without impact limiters, and consequences of hypothetical accident conditions during this lift. In addition, in question 2-1, the NRC staff requested clarification on why the weight of the impact limiters were not included in the lifting condition.

The NRC staff's understanding of the safety analysis report was that in order to move the package between two transport modes, the impact limiters would need to be removed. TN stated that during any intermodal transfer, the transport frame will be lifted with the package attached to the transport frame and impact limiters installed. In addition, the NRC questioned whether the transport frame protruded below the bottom of the impact limiters and therefore would contact a surface during a drop before the impact limiters, thus increasing the g load on a drop. TN acknowledged that the transport frame would impact the unyielding surface first and would take this observation back for further assessment. TN stated that any lifting of the package without impact limiters installed will be done only at an NRC licensed facility in accordance with the facilities 10 CFR Part 50 or 10 CFR Part 72 license. Further TN stated that rigging and handling procedures prior to transport and during receipt are not considered within the scope of 10 CFR Part 71 requirements. NRC agrees that lifting done prior to transport are not within the scope of 10 CFR Part 71, however, for any lifts done prior to transport should be completed such that the package performance during transport would not be impaired if an event were to happen during a lift. Assurance that the package will be lifted in accordance with

10 CFR Part 50 or 72 license or single failure-proof rigging equipment could provide that assurance.

In question 9-3, NRC requested revision of the safety analysis report to include a pressure test on each fabricated package, not just the first package fabricated. NRC stated that 10 CFR 71.85(b) requires the certificate holder to perform a pressure test before first use of “any packaging for the shipment of licensed material,” when the maximum normal operating pressure is greater than 35 kilopascal (5 psig). In its application TN proposed doing a hydrostatic pressure test on the first fabricated package, which TN said was approved by the French regulator.

TN discussed the justification accepted by the French regulator to approve performing a hydrostatic test on only the first package in accordance with the transportation regulations it adopted from the International Atomic Energy Agency (IAEA) Specific Safety Requirements, No. SSR-6, Revision 1 (2018 Edition), “Regulations for the Safe Transport of Radioactive Material.” The NRC stated that there is a large difference between the NRC regulations and the international standards in SSR-6. SSR-6 states that if the design pressure exceeds 35 kilopascal (5 psig), then the containment system must conform “to the approved design requirements relating to the capability of that system to maintain its integrity under that pressure.” Unlike the NRC, the IAEA safety standards do not require a pressure test on each package.

TN asked whether it could request an exemption to the regulations so that the hydrostatic pressure test would not have to be performed on each packaging. NRC stated that it cannot issue an exemption to the certificate holder that would be generally applicable to any NRC licensee using the package under the general license in 10 CFR 71.17. Doing so would be similar to performing a rulemaking without following the rulemaking procedures, as required by the Administrative Procedures Act. The NRC stated that it could issue an exemption to TN, however it could only be used for shipments of licensed material for which TN is the licensee making the shipments.

Finally, TN asked whether NRC would consider reviewing a change, which is unrelated to the request for additional information. TN stated that it is considering a proposal to not leak test the thick-walled containment vessel, as currently stated in the acceptance tests. TN provided a high level overview of the justification that the French regulatory authority approved for not requiring leak testing of the thick walled containment vessel. The NRC said it would consider the change, if proposed by TN.

The NRC asked when TN is considering submitting its response to the NRC’s request for additional information. TN stated that it was looking to respond by the end of November 2022.

Docket No. 71-9382
EPID No. L-2021-NEW-0000

Enclosures:

1. Meeting Attendees
2. TN Presentation

SUMMARY OF SEPTEMBER 9, 2021, MEETING WITH TN AMERICAS LLC TO DISCUSS
REQUEST FOR ADDITIONAL INFORMATION ON THE TN EAGLE-STC PACKAGE
APPLICATION, DATED November 21, 2022

DISTRIBUTION:

NRC Meeting Attendees

D. Marcano, NMSS

**ADAMS Accession Nos.: ML22319A067 (pkg), ML22319A068 (memo),
ML22319A069 (Encl 2)**

OFFICE	DFM	DFM	DFM
NAME	BWhite	SFigueroa	YDiaz Sanabria
DATE	11/17/2022	11/17/2022	11/21/2022

MEETING ATTENDEES

Meeting Title: Summary of September 9, 2022, Meeting with TN Americas LLC to Discuss the First Request for Additional Information on the TN Eagle-STC Package Application

Participants: TN Americas LLC and the NRC

Date: September 9, 2022

Location: Teleconference

NAME	AFFILIATION
Bernie White	NRC
Chris Bajwa	NRC
Nick Hansing	NRC
Matt Learn	NRC
Sujit Samaddar	NRC
Jorge Solis	NRC
Alexis Sotomayor-Rivera	NRC
Don Shaw	TN Americas LLC
Nise Kaneza	TN Americas LLC
Peter Vescovi	TN Americas LLC
Christophe Viaud	TN Americas LLC
Olivier Gandou	TN Americas LLC
Dimitris Hadjharitou	TN Americas LLC
Andrew Robinson	TN Americas LLC
Matt Beall	TN Americas LLC
Jun Li	TN Americas LLC