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August 15, 2018
E-52242

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Subject: Application for Revision 9 to Certificate of Compliance No. 9302, Request for Additional Information, Supplement for Clarification, Docket No. 71-9302 and EPID-L-2018-LLA-0000

References: [1] Letter E-51664, dated June 27, 2018, Application for Revision 9 to Certificate of Compliance No. 9302, Request for Additional Information, Docket No. 71-9302 and EPID-L-2018-LLA-0000

[2] Letter dated May 11, 2018, from Pierre Saverot, NRC, to Glenn Mathues, TN Americas LLC, Request for Additional Information for Review of the Model No. NUHOMS MP-197 Package

[3] Letter E-50408, dated February 28, 2018, Application for Revision 9 to Certificate of Compliance No. 9302 for the Model No. NUHOMS®-MP197 Packaging, Docket No. 71-9302

[4] Revision 8 to Certificate of Compliance No. 9302 for the Model No. NUHOMS®-MP197 Packaging

[5] NUHOMS®-MP197 Transportation Package Safety Analysis Report, Revision 18, April 2017

Pursuant to recent communications with the NRC, TN Americas LLC is providing a supplement to the application, requesting a change for clarification with respect to the maximum quantity of material in the package. There is also a revision to drawing number MP197HB-71-1014, adding alternative material specifications for specific components of the internal sleeve.

There are 3 safety analysis report (SAR) changes that are being provided to supplement the application. They are:

- Revision Log, page 3 is revised to reflect the revision to page A.1.4.10-1, page A.1.4.10-1, drawing MP197HB-71-1014, and page A.7-18.

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- Drawing MP197HB-71-1014, "NUHOMS® MP197HB Packaging Internal Sleeve Design," has been revised. Revision 3 added "OR JIS G4304, Grade SUS304" and "(ASTM B209 Type 6061 OR JIS H4000, Grade 6061)" to Note 3. This change is to allow the fabricator flexibility in sourcing the stainless steel and aluminum for the internal sleeve. Specification JIS G4304, Grade SUS304, "Stainless Steel Plate," contains the same critical characteristics as material specification ASTM A240 Type 304. Specification JIS H4000, Grade 6061, "Aluminum and Aluminum Alloy Sheets, Plates and Strips," contains the same critical characteristics as material specification ASTM B209 6061. A copy of JIS G4304, Grade SUS304 and/or JIS H4000, Grade 6061 can be provided should the Reviewer have the need for either. Associated with the drawing revision, page A.1.4.10-1 has been revised.
- Chapter A.7, page A.7-18, Table A.7-2b is revised to add "or equivalent" after Co-60. This addition is to account for the other isotopes in the waste stream that contribute to the total activity in the package.

This submittal contains the following enclosures:

- Enclosure 1 provides a revised copy of the NUHOMS®-MP197 Transportation Package SAR, Revision 18C changed pages, specifically page 3 of the Revision Log, page A.1.4.10-1, Drawing MP197HB-71-1014 (Revision 3), and page A.7-18 of Chapter A.7. This enclosure is proprietary.
- Enclosure 2 provides a revised public copy of the NUHOMS®-MP197 Transportation Package SAR, Revision 18C changed pages, specifically page 3 of the Revision Log, page A.1.4.10-1, Drawing MP197HB-71-1014 (Revision 3), and page A.7-18 of Chapter A.7. This enclosure is non-proprietary.
- Enclosure 3 provides a markup of Page 7 of Revision 8 for CoC No. 9302, for the proposed change discussed with respect to the revision number change to Drawing MP197HB-71-1014.

The changed areas in the SAR are marked as follows:

- New or changed pages show "Revision 18C" in the header.
- Changed areas are indicated using revision bars in the right-hand margin. Newly inserted text is shown in italics, and is gray-shaded to distinguish it from the changes proposed in Revision 18A and in Revision 18B of the application.

Based on communications with the NRC during the course of this licensing action, TN Americas LLC respectfully requests to be notified once the NRC has completed the technical review and determines that no additional information is required for issuance of the CoC. TN Americas LLC will then submit a consolidated Revision 19 to the NUHOMS®-MP197 SAR (both the proprietary and the non-proprietary versions), which incorporates all the changes completed during the course of this application for revision.

Should the NRC staff have any questions or require additional information to support review of this application, please contact Mr. Glenn Mathues by telephone at 410-910-6538, or by e-mail at Glenn.Mathues@orano.group. For any written correspondence, please include "To the Attention of Glenn A. Mathues."

Sincerely,



Prakash Narayanan
Chief Technical Officer
TN Americas LLC

cc: Pierre Saverot, U.S. Nuclear Regulatory Commission, as follows

One paper copy of this transmittal letter, Enclosure 1 and Enclosure 3

Enclosures:

1. NUHOMS®-MP197 SAR Revision 18C, Changed Pages Only (Proprietary)
2. NUHOMS®-MP197 SAR Revision 18C, Changed Pages Only (Non-Proprietary)
3. Proposed Change to CoC 9302 Revision 8 Page 7

Enclosure 2 to E-52242

**NUHOMS[®]-MP197 SAR, Revision 18C
Changed Pages Only
(Non-Proprietary)**

Revision Log

Rev. No.	Date	Description
		<u>New pages as follows:</u> A.1.4.9A-5 A.4.6.1-i and A.4.6.1-1 through A.4.6.1-11 A.7-3a, A.7-4a, and A.7-6a A.8-15a
18B	6/18	Application for CoC Revision 9 <u>Revised pages as follows:</u> SAR pages 1-i, 1-13, 1-14, 1-15, 1-16 SAR pages A.1.4.10-1, A.1.4.10-6 SAR pages A.2-13, A.2.13.7-i, A.2.13.7-40, A.2.13.7-44 SAR page 7-18 <u>Revised drawings as follows:</u> MP197HB-71-1004 through MP197HB-71-1006 MP197HB-71-1009 NUHRWC-71-1001
18C	8/18	Application for CoC Revision 9 <u>Revised pages as follows:</u> SAR page A.1.4.10-1 SAR page A.7-18 <u>Revised drawings as follows:</u> MP197HB-71-1014

Appendix A.1.4.10
NUHOMS®-MP197HB SAR Drawings

The following drawings for the NUHOMS®-MP197HB Cask are included in Section A.1.4.10.1.

Drawing Number	Title
MP197HB-71-1001 Rev 4	NUHOMS®-MP197HB Packaging Transport Configuration (2 sheets)
MP197HB-71-1002 Rev 7	NUHOMS®-MP197HB Packaging Parts List (2 sheets)
MP197HB-71-1003 Rev 3	NUHOMS®-MP197HB Packaging General Arrangement (1 sheet)
MP197HB-71-1004 Rev 6	NUHOMS®-MP197HB Packaging Cask Body Assembly (1 sheet)
MP197HB-71-1005 Rev 7	NUHOMS®-MP197HB Packaging Cask Body Details (3 sheets)
MP197HB-71-1006 Rev 4	NUHOMS®-MP197HB Packaging Lid Assembly and Details (1 sheet)
MP197HB-71-1007 Rev 1	NUHOMS®-MP197HB Packaging Regulatory Plate (1 sheet)
MP197HB-71-1008 Rev 2	NUHOMS®-MP197HB Packaging Impact Limiter Assembly (1 sheet)
MP197HB-71-1009 Rev 3	NUHOMS®-MP197HB Packaging Impact Limiter Details (1 sheet)
MP197HB-71-1011 Rev 1	NUHOMS®-MP197HB Packaging Transport Configuration Outer Sleeve With Fins Option (1 sheet)
MP197HB-71-1014 Rev 3	NUHOMS®-MP197HB Packaging Internal Sleeve Design (1 sheet)

The following drawings for the NUHOMS® 24PT4 DSC are included in Section A.1.4.10.2.

Drawing Number	Title
NUH24PT4-71-1001 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Basket Assembly (5 sheets)
NUH24PT4-71-1002 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Main Assembly (8 sheets)
NUH24PT4-71-1003 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Failed Fuel Can (4 sheets)

**Security Related Information
on the Drawings in Section A.1.4.10.1, are
Withheld per the Criteria of RIS 2005-31**

Table A.7-2a
Applicable Fuel Specification for Various DSCs

DSC MODEL	Applicable Fuel Specification from Chapter A.1
NUHOMS [®] -24PT4	Tables A.1.4.1-1 and A.1.4.1-2
NUHOMS [®] -32PT	Table A.1.4.2-2
NUHOMS [®] -24PTH	Table A.1.4.3-2
NUHOMS [®] -32PTH	Table A.1.4.4-2
NUHOMS [®] -32PTH1	Table A.1.4.5-2
NUHOMS [®] -37PTH	Table A.1.4.6-2
NUHOMS [®] -61BT	Table A.1.4.7-2
NUHOMS [®] -61BTH	Table A.1.4.8-2
NUHOMS [®] -69BTH	Table A.1.4.9-1

Table A.7-2b
Applicable Content Specification for RWC

Type and Form of Material	<p>The NUHOMS[®]-MP197HB packaging is designed for shipment of various types of irradiated and contaminated reactor hardware. The payload will vary from shipment to shipment. Typical composition of the payload consists of the following components either individually or in combinations:</p> <ol style="list-style-type: none"> 1. BWR Control Rod Blades 2. BWR Local Power Range Monitors (LPRMs) 3. BWR Fuel Channels 4. BWR Poison Curtains 5. PWR Burnable Poison Rod Assemblies (BPRAs) 6. PWR and BWR Reactor Vessel and Internals
Decay Heat load	≤ 5 kW
Loading	Components with high specific activity are generally placed near the center of the RWC. For each shipment, the RWC is normally filled to capacity, which prevents shifting of the contents during transport. If the RWC is not full, appropriate component spacers or shoring is used to prevent significant movement of the contents.
Maximum Quantity of Material per Package	<p>(a) The quantity of radioactive material is limited to a maximum of 8,182 A₂. The radioactive material is primarily in the form of neutron activated metals, or metal oxides in solid form. Surface contamination may also be present on the irradiated components. When a wet load procedure (i.e., in-pool) is followed for cask loading, the cask cavity and RWC are drained and dried to ensure that there are no free liquids in the package during transport.</p> <p>(b) The NUHOMS[®]-MP197HB packaging is designed to transport a payload of up to 56.0 tons of dry irradiated and/or contaminated non-fuel bearing solid materials in the RWC. <i>The center of gravity (CG) of the loaded NUHOMS[®]-MP197HB package is to be 102 ± 4 inches from the bottom of the cask.</i></p> <p>(c) The maximum quantity of non-fuel bearing radioactive material loaded into a package shall not exceed 8,182 A₂ (90,000 Ci of Co-60 <i>or equivalent</i>).</p>

Enclosure 3 to E-52242

**Proposed Change to CoC 9302 Revision 8
Page 7**

NRC FORM 618 (8-2000) 10 CFR 71		U.S. NUCLEAR REGULATORY COMMISSION			
CERTIFICATE OF COMPLIANCE FOR RADIOACTIVE MATERIAL PACKAGES					
1. a. CERTIFICATION NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
9302	8 9	71-9302	USA/9302/B(U)F-96	7 OF	19

MP197HB-71-1011 Rev 1	NUHOMS®-MP197HB Packaging Transport Configuration Outer Sleeve With Fins Option (1 sheet)
MP197HB-71-1014 Rev 2	NUHOMS®-MP197HB Packaging Internal Sleeve Design (2 sheets)
3 →	
NUH24PT4-71-1001 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Basket Assembly (5 sheets)
NUH24PT4-71-1002 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Main Assembly (8 sheets)
1 →	
NUH24PT4-71-1003 Rev 0	NUHOMS® 24PT4 Transportable Canister For PWR Fuel Failed Fuel Can (4 sheets)
NUH32PT-71-1000 Rev 0	NUHOMS® 32PT Transportable Canister For PWR Fuel Summary Dimensions (1 sheet)
NUH32PT-71-1001 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel Main Assembly (5 sheets)
NUH32PT-71-1002 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel Shell Assembly (3 sheets)
NUH32PT-71-1003 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel "A" Basket Assembly (16 Poison/16 Compartment Plates)(8 sheets)
NUH32PT-71-1004 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel Aluminum Transition Rail – R90 (2 sheets)
NUH32PT-71-1005 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel Aluminum Transition Rail –R45 (1 sheet)
NUH32PT-71-1006 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel "A/B/C/D" Basket Assembly (20 Poison/12 Compartment Plates)(6 sheets)
NUH32PT-71-1007 Rev 1	NUHOMS® 32PT Transportable Canister For PWR Fuel "A/B/C/D" Basket Assembly (24 Poison/8 Compartment Plates)(8 sheets)
NUH24PTH-71-1000 Rev 1	NUHOMS® 24PTH Transportable Canister For PWR Fuel Main Assembly (5 sheets)
NUH24PTH-71-1001 Rev 1	NUHOMS® 24PTH Transportable Canister For PWR Fuel Basket Shell Assembly (4 sheets)
NUH24PTH-71-1002 Rev 1	NUHOMS® 24PTH Transportable Canister For PWR Fuel Shell Assembly (4 sheets)
NUH24PTH-71-1003 Rev 2	NUHOMS® 24PTH Transportable Canister For PWR Fuel Basket Assembly (8 sheets)