



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

May 11, 2018

Mr. Glenn Mathues
Orano USA
7135 Minstrel Way
Columbia, MD 21045

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
MODEL NO. NUHOMS® MP-197HB PACKAGE.

Dear Mr. Mathues:

By letter dated February 28, 2018, you submitted an application for a revision to the Certificate of Compliance No. 9302 for the Model No. NUHOMS® MP-197HB transportation package. The letter requested to add a dismantling and decommissioning radioactive waste container, as a variant of a currently approved design configuration.

The staff has determined that further information is needed to complete its technical review. The information requested is listed in the enclosure to this letter. We request you provide this information by July 1, 2018.

Please reference Docket No. 71-9302 and EPID - L-2018-LLA-0000 in future correspondence related to this licensing action. If you have any questions regarding this matter, please contact me at 301-415-7505.

Sincerely,

/RA/

Pierre Saverot, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9302
EPID - L-2018-LLA-0000

Enclosure:
Request for Additional Information

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF THE
MODEL NO. NUHOMS® MP-197HB PACKAGE, DOCUMENT
DATE: MAY 11, 2018

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Request for Additional Information
ORANO USA
Docket No. 71-9302
Model No. NUHOMS® MP-197HB Package

By letter dated February 28, 2018, ORANO USA (TN Americas LLC) submitted an application for a revision to the Certificate of Compliance No. 9302 for the Model No. NUHOMS® MP-197HB transportation package. The letter requested to add a dismantling and decommissioning radioactive waste container, as a variant of a currently approved design configuration.

This request for additional information (RAI) identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff (the staff) in connection with its review of the application. Each individual RAI describes information needed by the staff to complete its review of the application and to determine whether the applicant has demonstrated compliance with the regulatory requirements of 10 CFR Part 71.

Chapter 2 STRUCTURAL AND MATERIALS REVIEW:

- 2-1 Justify the changes to the Quality Category (safety classification) and/or the removal of all safety-related subcomponents of the radioactive waste canister (RWC) in the revised Drawing NUHRWC-71-1001, Revision 2.

The applicant revised RWC drawing NUHRWC-71-1001 as Revision 2, to show a general arrangement for the new RWC-DD, and the previously-approved RWC-W and RWC-B. Further, the previously-approved NUHRWC-71-1002, Revision 1, and NUHRWC-71-1003, Revision 0, drawings were both removed, which the applicant stated are now superseded by NUHRWC-71-1001, as Revision 2. Both NUHRWC-71-1001, Revision 1, and NUHRWC-71-1003, Revision 0, included multiple subcomponents previously identified as Quality Category A. In NUHRWC-71-1001, Revision 2, these subcomponents have either been removed from the drawings or downgraded to Quality Category C.

The applicant shall justify the reclassification and/or the removal of each subcomponent previously identified as Quality Category A. Furthermore, the applicant shall properly justify the revision of the previously approved drawings (12 sheets) to a single drawing (2 sheets).

The information is required by staff to determine compliance with 10 CFR 71.107(a).

- 2-2 Justify the exclusion of weld requirements in revised RWC drawing NUHRWC-71-1001 as Revision 2.

NUHRWC-71-1001, Revision 1, identifies weld design requirements for subcomponents important to safety, e.g., Category A subcomponents. Further, Section A.1.4.9A of the application defines additional weld requirements (procedures, inspections, welder qualifications) for the fabrication of the RWC-DDs.

Per 10 CFR 71.107(a), an applicant is expected to assure that appropriate quality standards are specified and included in design documents. Therefore, the exclusion of these weld design requirements from NUHRWC-71-1001, Revision 2, shall be justified.

Enclosure

The information is required by staff to determine compliance with 10 CFR 71.107(a).

- 2-3 Revise, as appropriate, the design basis drawings for the containment subcomponents to identify the minimum surface finish for seal contact surfaces.

Section A.4.1.4 of the application states that all seal contact surfaces for the containment boundary are machined to a 32 RMS or finer surface finish. The drawings do not appear to reflect this requirement.

In accordance with SFST-ISG-20, the staff shall verify that the drawings for the package show the seal surface and O-ring groove details, including among other, the seal surface finish. Such verification is not possible since, for example, Detail G in Drawing MP197HB-71—1006, Revision 2, which provided dimensions, tolerances and surface finish requirements for the O-ring groove for the cask lid, was removed from the drawing.

The information is required by staff to determine compliance with 10 CFR 71.107(a).

- 2-4 Clarify the location of the center of gravity of the package with the RWC-DD canister and the package's performance with respect to NCT and HAC drop test conditions.

Page A.2.13.1-3 of the application indicates that loaded RWCs will weigh less than or equal to 112 kips. Section A.1.4.9A.1.3 indicates that the RWC-DD is longer in length than the previously approved RWCs. Table A.7-1 indicates that the RWC-DD has a spacer which is 2.20" long vs a spacer of 11.75" for the RWC-B and RWC-W.

While the weight of the RWC-DD is said to be bounded by previous RWC configurations, the distribution of the package's weight is unclear, as the center of gravity has not been defined.

Since the location of the center of gravity can affect the impact loads experienced by the package during free drop for NCT and HAC, clarify the impact loads and resulting structural performance of the package if it is no longer bounded by previous analyses. Update any calculations and the application as necessary.

This information is required by staff to determine compliance with 10 CFR 71.71(c)(7), (c)(8) and 71.73(c)(1).

Chapter 3 THERMAL REVIEW

- 3-1 Explain how the HAC fire thermal results are adequate when the aluminum blocks seem unattached to the thermal shield after the HAC 9 m free drop test.

The aluminum blocks are included in the thermal model as being crushed after a postulated drop. However, impact limiter drawing MP197HB-71-1008, which depicts the thermal shield detail, shows that the aluminum blocks may come off during the HAC drop as a result of an unspecified fillet weld size which attaches these blocks to the thermal shield. This could impact the HAC fire thermal results as it could provide additional heat input from the fire toward the package seals.

This information is required by staff to determine compliance with 10 CFR 71.73(a), 71.73(c)(1), and 71.73(c)(4).

Chapter 4 CONTAINMENT REVIEW

4-1 Show all details related to the package containment boundary.

Staff's review of MP197HB-71-1006 drawing (related to the seals) indicates that all specific details related to the O-ring groove detail (formerly detail G) have been removed. This information is important as the details of the O-ring groove detail are part of the primary containment boundary.

This information is required by staff to determine compliance with 10 CFR 71.33(a)(4), and 71.33(a)(5)(iii).

Chapter 5 SHIELDING REVIEW

5-1 Demonstrate that the dose rates for the MP197HB package containing the new radioactive waste canister, RWC-DD, are still bounded with previous evaluations for the package under normal conditions of transport (NCT) and hypothetical accident conditions (HAC).

RWC-DD is a new RWC design with a length of 184.75 inches. That is 17.45 inches longer compared to the previously approved RWC-W/B, which is 167.3 inches long. As such, the source extends to closer to the bottom and the top ends of the MP197HB overpack and hence may cause the dose rates at the ends of the package to increase.

The applicant needs to consider this fact in the shielding analyses to either recalculate the doses rates at the ends of the package under both NCT and HAC or demonstrate that the dose rates of the package containing the new radioactive waste canister, RWC-DD, are still bounded by the previous evaluations.

This information is required by staff to determine compliance with 10 CFR 71.47 and 71.51.