

From: [SHAW Donis \(ORANO\)](#)
To: [Garcia Santos, Norma](#)
Cc: [McKirgan, John](#); [Tate, Travis](#); [Araguas, Christian](#); [Diaz-Sanabria, Yoira](#); [Li, Zhian](#); [Plotter, Jason](#); [Davis, Marlene](#); [Chung, Donald](#); [SHIH Yueh Kan \(ORANO\)](#); [HAROON Raheel \(ORANO\)](#); [NARAYANAN Prakash \(ORANO\)](#); [YATES Douglas \(ORANO\)](#); [MIGLIORE Rick \(ORANO\)](#)
Subject: [External_Sender] RE: Amendment 16 for the Model No. NUHOMS® - Request to Supplement Request for Additional Information after Telephone Call on 5/22/2019
Date: Wednesday, June 12, 2019 12:23:26 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Norma,

I want to acknowledge receipt of your email below. TN is assessing this request and I will communicate our estimate for providing the requested information. I believe I will have that estimate today or tomorrow, but if we feel we need additional time to make this determination, I will communicate that to you tomorrow, June 13th.

Regards,

Don

Don Shaw

Licensing Manager

TN Americas LLC

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From: Garcia Santos, Norma [mailto:Norma.GarciaSantos@nrc.gov]
Sent: Tuesday, June 11, 2019 4:57 PM
To: SHAW Donis (ORN-NPS)

Cc: McKirgan, John; Tate, Travis; Araguas, Christian; Diaz-Sanabria, Yoira; Li, Zhian; Piotter, Jason; Davis, Marlone; Chung, Donald
Subject: Amendment 16 for the Model No. NUHOMS® - Request to Supplement Request for Additional Information after Telephone Call on 5/22/2019

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Dear Mr. Shaw:

By letter dated June 7, 2018 [Agencywide Documents Access and Management System (ADAMS) Accession No. ML18162A093] and e-mail dated February 27, 2019 (ADAMS Accession No. ML19084A083), Orano-TN (Orano or the applicant) submitted supplement to a response to a request for additional information (RAI) and to its application in accordance with 10 CFR Part 72. The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the information provided and concluded that additional information is needed to clarify the following items:

Th-1 Provide a revised completion time (based on a blocked vent condition), in addition to the short-term actions that must be completed to return the system to normal operation. (See ADAMS Accession No. ML19084A083)

The following items apply to the technical specification (TS) 3.1.4 proposed in Amendment 16:

- 1) Action D is initiated if
 - a) A.2 (air vents blocked) cannot be completed within 16 hours **OR**
If item A.2 is tripped, by default, the air vents are blocked this assumption is no longer valid. This makes the 30-day completion time unacceptable UNLESS is the applicant demonstrates that the steady state temperatures of the fuel cladding and the concrete remain below limits.
 - b) C.2 (unexplained temperature excursion, return to normal operation) cannot be completed within 16 hours.
If item C.2 is tripped, then Action D must provide a remedy which immediately (or within a credible timeframe) restores the system to normal operation. The 30-day time limit has not been shown to be the limiting time frame for this restoration.
- 2) The basis for the time limit of 30 days for completing Action D is based on the air vents being unblocked.

In the former TS 3.1.4 (Amendment 15), the 30-day time limit was the time allowed for a calculation to be performed, not for returning the system to normal conditions. The short-term action for returning the system to normal conditions was either unloading into a Transfer Cask or returning the DSC to the fuel building.

Sh-1 Provide the following information:

- a. the bounding burn up, enrichment, and cooling time (BECT) combination(s), which represents the design basis source term (e.g., strengths and spectra of the neutron and gamma emitted from the spent fuel) to be defined in the TS in place of the content definition currently provided by the fuel qualification tables (FQTs), and
- b. the revised technical specifications of the Model No. NUHOMS® with the information requested in this question.

In the proposed amendment 16 to Certificate of Compliance (CoC) No. 1004 for the Model No. NUHOMS® storage system, the applicant proposed to relocate the fuel qualifications tables (FQTs) from the technical specifications to the final safety analysis report. Nevertheless, the applicant did not provide the fuel parameters that would define the allowable spent fuel contents with respect to the design basis source terms to be included in the technical specifications for this storage system instead of the fuel qualification tables.

In terms of the shielding design, 10 CFR 72.234(a) requires that the cask design meets the requirements of 10 CFR 72.236. Specifically, 10 CFR 72.236(d) requires that cask design meet the dose limits of 10 CFR 72.104 and 72.106. In accordance with the regulatory requirement of 10 CFR 72.236(a), specifications must be provided for the spent fuel to be stored in the storage cask.

Based on the study published in NUREG/CR-6716, "Recommendations on Fuel Parameters for Standard Technical Specifications for Spent Fuel Storage Casks," and NUREG/CR-6802, "A Quantitative Impact Assessment of Hypothetical Spent Fuel Reconfiguration in Spent Fuel Storage Casks and Transportation Packages," the source terms, among other irradiation parameters, are dependent primarily on the BECT. Because a wide variety of different combinations of BECT may produce the same source terms, it is necessary to accurately define the allowable BECTs for the staff to reach a reasonable assurance finding that the source terms from the allowable fuel assemblies are within the bound of the design basis source terms.

NUREG/CR-6716 includes a study on the sensitivities of the neutron and gamma source terms of the spent fuel against all major parameters that impact the source terms. The study found that the fuel parameters with most significant impact on dose rate are fuel burnup, enrichment, and cooling time. This study recommends including these parameters in standard TSs.

The recommendation is based on a balanced consideration of the parameters that are important to safety and appropriate flexibility for the applicant to make changes to the allowed contents. Specifically, NUREG/CR-6716 states the following:

"[T] the objective is to replace the current detailed TS with more general Standard Technical Specifications (STS) that concentrate control on those fuel parameters that are most important to maintaining safety. The remaining fuel parameters are of lesser importance and would be handled under the Section 72.48 process, which allows the licensees to change those

parameters by performing additional safety analyses to update the FSAR.”

This information is needed to determine compliance with the regulatory requirements 10 CFR 72.234(a) and (d), 72.104, and 72.106.

Op-1 Clarify the following:

- a. if the time limits identified in LCO 3.1.3 incorporate or cover the use of the OS197FC (OS197L), and
- b. if OS197FC and OS197L are the same.

The staff added Condition No. 5 to the CoC No. 1004 in Amendment 11. In its application for amendment 16 of CoC No. 1004, the applicant proposed to eliminate this condition from the CoC because the applicant considered this condition strictly a notification requirement and covered by LCO 3.1.3. The staff reviewed LCO 3.1.3 and could not determine if the applicant considered the use of the OS197FC transfer cask as part of the actions to initiate active cooling within a specified time limit. Condition No. 5 includes a 30-day period, which the staff has accepted in various applications to address recovery from off-normal and accident conditions.

This information is needed to determine if it meets the evaluation criteria to be maintained in the TS/CoC or move to the Final Safety Analysis Report (FSAR).

On May 22, 2019, the staff held a telephone call with the applicant to discuss questions related to moving the fuel qualification tables to the final safety analysis report (ADAMS Accession No. ML19151A758). The staff also mentioned that there were some questions that need to be resolved. In the May 22 telephone call, the applicant mentioned that it would consider the staff's comments when developing the response to the staff's questions. Please let me know when you will be providing the information requested in this communication.

You may contact me at (301) 415-6999 or by email if you have any questions regarding this review.

Sincerely,

Norma García Santos, Project Manager
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 72-1004
CAC No. A33009
EPID L-2017-LLA-0112