



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

June 9, 2021

MEMORANDUM TO: Christopher M. Regan, Deputy Director  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

FROM: Pierre Saverot, Project Manager  
Storage and Transportation Licensing Branch  
Division of Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

A handwritten signature in black ink, appearing to read "Saverot".

Signed by Saverot, Pierre  
on 06/09/21

SUBJECT: SUMMARY OF MAY 25, 2021 MEETING WITH ORANO  
FEDERAL SERVICES

Background

On May 25, 2021, an Observation Public Meeting was held by teleconference between the NRC staff and representatives from Orano Federal Services, LLC; Orano Decommissioning Services, LLC; and Accelerated Decommissioning Partners (ADP), LLC, to present the licensing approach for a special authorization request for a one time shipment of the Crystal River 3 (CR3) reactor pressure vessel (RPV) to support the CR3 decommissioning project. A first meeting was held on April 1, 2021. This second meeting was noticed on May 4, 2021 (ADAMS Accession No. ML21124A425).

The meeting attendance list and the presentation are provided as Enclosure Nos. 1 and 2, respectively.

Discussion

The NRC approved the Crystal River 3 NPP license transfer from Duke Energy Florida to ADP CR3 and ADP intends to decommission CR3 by 2027. Orano Decommissioning Services will perform the segmentation, removal, packaging of the Reactor Pressure Vessel (RPV) and internals.

The middle section of the RPV, including the bottom of the plenum assembly and core support shield, the upper and lower grid assemblies, the thermal shield, and the active fuel length regions has a total activity of 38,000 Ci, prior to segmentation, among which 20,700 Ci are from Co-60.

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The applicant presented its licensing approach, in accordance with 10 CFR 71.41(d), and explained the design details for this 860,000 lbs. grouted Type B package, with 3-inch thick side shells and welded 6-inch thick bottom and top closure covers. The applicant explained the design criteria, the welding criteria, and the fracture toughness considerations (in accordance with Regulatory Guide 7.12) for the package.

Staff requested that the application includes the calculations for the 38% uniaxial limit and the 22% tri-axial limit and that more details shall be provided for the closure deformation as well as the partial weld failure resulting from the normal conditions of transport (NCT) corner drop test. For the hypothetical accident conditions (HAC) side and corner drop tests, weld erosion does take place, but the applicant explained that half of the weld is still present and any HAC release remains below the maximum regulatory limits.

Staff asked that the applicant explains the rationale behind the assumptions made, e.g., 25% of the grout internal to the RPV is assumed to hold all of the dispersible activity and less than one-half  $A_2$  will escape. In addition, the applicant will need to provide (i) an explanation for why the package is capable of sustaining cold temperatures, (ii) the references for the parameters A and E in the equation for fractional dehydration of calcium silicate, (iii) the data on moisture release and radiolysis of water, and (iv) the calculation of the MNOP and of the pressure limits for both NCT and HAC. Staff asked the applicant to clarify a package modeling performed in MCNP6.2 with the simplifications for component geometry that were based on CAD models.

The applicant is planning for a July 2021 submittal. There was one question from the member of the public related to the potential shipment of other wastes from the Crystal River site. Staff made no regulatory commitment during the meeting.

DOCKET NO. 71-9393  
EPID L-2021-NEW-0003

Enclosures: 1- Meeting Attendees  
2- Presentation

**Meeting Between Orano Federal Services, LLC  
and the  
Nuclear Regulatory Commission  
May 25, 2021  
Meeting Attendees**

**NRC/NMSS/DFM**

Pierre Saverot  
Young Kim  
JoAnn Ireland  
Omar Khan  
Jimmy Chang  
Chris Allen

**ORANO FEDERAL SERVICES**

Chris Backus  
Phil Noss  
Armando Merlin  
Erik Gonsiorowski  
Dan Wick

**ORANO DECOMMISSIONING SERVICES**

Matt Lucas  
Dirk Bender  
Donald LeFrancois  
Adam Mancini  
Arthur Niemoller

**ORANO TN**

Jason Heineman  
Mike Valenzano

**ADP CR3**

Phyllis Dixon  
Craig Miller  
Marck Van Sicklen

**WCS**

Matt Hooper

**BEYOND NUCLEAR**

Paul Gunter