



Department of Energy

Washington, DC 20585

June 6, 2022

Yaira K. Diaz-Sanabria, Chief
Storage and Transportation Licensing Branch
U.S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Two White Flint North - Mail Stop 4 B34
11555 Rockville Pike
Rockville, MD 20852-2738

Dear Yaira K. Diaz-Sanabria,

The U.S. Department of Energy (DOE) requests an amendment of U.S. Nuclear Regulatory Commission Certificate of Compliance (CoC) Number 9330, Revision 15 for the Model ATR FFSC package (NRC Docket 71-9330) to authorize an increase of the payload weight limits for the ATR LEU and MURR LEU fuel element configurations from 50 to 59 lb., increase the maximum package weight from 290 to 299 lb. for all configurations, and to increase the maximum fissile mass for the COBRA LEU fuel element configuration from 435.8 to 450.0 g (U-235). The need date for this amendment is December 31, 2022.

The U.S. High Performance Research Reactor (USHPRR) project, under the National Nuclear Security Administration's Convert Program, is working to convert the five remaining USHPRRs from highly enriched uranium (HEU) to low enriched uranium (LEU). In support of this effort, there is a need to ship prototypic, full size LEU-based fuel elements and associated Design Demonstration Elements (DDE) in the ATR FFSC package.

On November 10, 2021, your office issued Revision 15 of CoC No. 9330 to authorize new Fuel Handling Enclosure (FHE) designs for Advanced Test Reactor (ATR) LEU fuel elements and Missouri University Research Reactor (MURR) LEU fuel elements that are different from the ones used for the corresponding HEU fuel elements. DOE has demonstrated in Safety Analysis Report (SAR), Revision 17, by finite element analysis, that the same FHE designs used for HEU fuel elements meet, in both cases, all applicable requirements, making the new FHEs approved in CoC Revision 15 unnecessary.

The application in support of this request, SAR Revision 17, and its supporting documents are enclosed.

Docket 71-9330, June 2, 2022

If you have any questions or need more details, please call at 301-903-5513 or james.shuler@em.doe.gov.

Dr. James M. Shuler
Manager, DOE Packaging Certification Program
U.S. Department of Energy
Office of Packaging and Transportation
EM-4.24, 270CC – Rm 3113
Washington, DC 20585

Enclosures:

1. *Safety Analysis Report, Advanced Test Reactor Fresh Fuel Shipping Container (ATR FFSC)*, Revision 17, May 2022, Docket 71-9330
2. *Selected Sequential Drop Analyses for the ATR FFSC with Heavier LEU Fuel Elements*, INL/RPT-22-67296, ECAR-5644, Revision 2, May 2022
3. *Table of Changes for ATR FFSC SAR Revision 17*, ATR FFSC LEU SAR Amendment Revision 17, Docket 71-9330

CC: ATTN: Document Control Desk
Director, Division of Spent Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Mr. Pierre M. Saverot, Project Manager
Daryn Moorman, NE-ID
Eric Woolstenhulme, INL
Phil Noss, Orano