Department of Energy
Washington, DC 20585

August 31, 2020

MEMORANDUM FOR VIRGINIA G. KAY
DIRECTOR
OFFICE OF MATERIAL DISPOSITION
NATIONAL NUCLEAR SECURITY ADMINISTRATION

FROM: JULIA C. SHENK Julia C. Shenk Digitally signed by Julia C. Shenk Date: 2020.08.31 10:04:24 -04'00'
HEADQUARTERS CERTIFYING OFFICIAL
DIRECTOR
OFFICE OF PACKAGING AND TRANSPORTATION

SUBJECT: Extension of Amendment to DOE Certificate of Compliance 9315 to Authorize Use of the Model ES-3100 Packaging for Shipment of Highly Enriched Uranium/Molybdenum Alloy Right Annular Cylinder

On March 31, 2020, Department of Energy Certificate of Compliance (CoC) Number 9315, Revision 16, was amended by memorandum to authorize use of the Model ES-3100 packaging for shipment of a Highly Enriched Uranium/Molybdenum Alloy Right Annular Cylinder (annulus), based on the memorandum and its Safety Evaluation Report (SER). This authorization expires September 30, 2020.

In response to your request dated July 29, 2020, Department of Energy Certificate of Compliance (CoC) Number 9315, Revision 16 is amended to extend authorization of the Model ES-3100 packaging for shipment of a Highly Enriched Uranium/Molybdenum Alloy Right Annular Cylinder (annulus) until September 30, 2021, while the CoC is under timely renewal, based on this memorandum and previous SER, with the conditions of use listed below:

1. The annulus, prior to aluminum plating, is limited to the following dimensions: 5.80 inches in length (max), outer diameter of 3.86 inches (max), and an inner diameter of 1.35 inches (min),
2. The annulus may be plated with aluminum to a thickness of approximately 0.01 inch (the plating thickness is not included in the dimensional limits given above; however, the criticality evaluation included the annulus with zero aluminum plating, up to a plating thickness of 0.25 inch),
3. The maximum radioactive mass for the annulus is 16.79 kg,
4. The maximum fissile mass and enrichment for the annulus is 14.91 kg of U-235 and 93.5% respectively,
5. The total mass of the annulus loading configuration and all packing materials loaded in the Containment Vessel (CV) shall not exceed the CoC limit of 40.82 kg,

6. Prior to loading in the CV, the annulus may be placed in polyethylene bagging and then metal steel caps placed over each end of the annulus which may then be secured to the bagging with metal tape, as necessary; the metal steel caps are optional,
7. Only one annulus per CV per package is authorized,
8. Only ground transport is authorized; all other modes of transportation are prohibited,
9. This authorization may be used only with DOE CoC 9315, Revision 16: conditions in the CoC applicable to uranium metal and alloy in the form of solid geometric shapes, Cylinder A, for ground transport, apply to the annulus content configuration, except Condition 5.(d)(3), as neutron absorber spacers are not required, and
10. This authorization shall expire on September 30, 2021.

If you have any questions, please contact me or Dr. James Shuler of my office at (301) 903-5513.

Attachment

cc: Stan Thomas, Y-12
Yung Liu, ANL
James M. Shuler, EM-4.24
Docket 20-51-9315