

**CERTIFICATE OF COMPLIANCE  
FOR RADIOACTIVE MATERIAL PACKAGES**

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2. PREAMBLE

- a. This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."
- b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

- a. ISSUED TO (*Name and Address*)  
United States Enrichment Corp.  
6903 Rockledge Drive  
Bethesda, MD 20817
- b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION  
Safety Analysis Report on the "Paducah Tiger"  
Protective Overpack for 10-Ton Cylinders of Uranium  
Hexafluoride, Report No KY-665, Revision 1, dated  
October 28, 1998, as supplemented.

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

- (1) Model No.: Paducah Tiger
- (2) Description

A protective overpack which provides impact and thermal resistance for the Model No. 48X 10-ton cylinder. The cylinder is welded steel, and is 48 inches in diameter, 121 inches long, and has a 5/8-inch thick wall. The cylinder has a 108.9 ft<sup>3</sup> volume, and is rated at 200 psig service pressure. The protective overpack has overall dimensions of approximately 153 inches x 76 inches x 72 inches. The overpack consists of two parts, a body and a lid, which are clamped and secured by four, 1-3/8-inch ratchet type binders, and eight, 1-3/4-inch guide pins, fitted with 3/4-inch high strength latch pins. The closed, assembled overpack consists of an outer 1/8-inch steel shell backed on both long sides, top and bottom by two, 10-gauge stainless steel breakaway plates. The valve end is protected by a 3/8-inch stainless steel breakaway plate and a 2-inch thick aluminum stiffening plate. A centrally located 3/16-inch steel shell, 60 inches in diameter x 128 inches long is separated from the outer shell by fire retardant polyurethane foam. The cylinder is held in the overpack by rubber shock isolators. Four mild steel brackets are provided on the body for lifting. Four, 2-inch bolts are used in conjunction with the ISO corner fittings for tie-down. The maximum gross weight of the package is 40,000 pounds.

(3) Drawings

The Paducah Tiger overpack is constructed in accordance with Martin Marietta Energy Systems, Inc., Drawing Nos. M-1209-NRC-1, Rev. 0, M-1209-NRC-2, Rev. 0, M-1209-NRC-3, Rev. A, M-1209-NRC-4, Rev. 1, and M-1209-NRC-5, Rev. 0.

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5.(b) Contents

(1) Type and form of material

Solid uranium hexafluoride (UF<sub>6</sub>) at not more than 4.5 w/o U-235 isotope enrichment, and an H/U ratio of no more than 0.088.

(2) Maximum quantity of material per package.

The maximum weight of UF<sub>6</sub> not to exceed 21,030 pounds (9,540 kg). The maximum U-235 content not to exceed 640 pounds (290 kg).

(3) Transport Index for Criticality Control (Criticality Safety Index)

Minimum transport index to be shown on  
label for nuclear criticality control: 0.0

6. Each Model No. 48X cylinder must be inspected, tested, maintained, assembled, and used in accordance with American National Standards Institute (ANSI) N14.1-2001. The cylinders must be designed and fabricated in accordance with ANSI N14.1-2001 or an earlier version of ANSI N14.1 in effect at the time of fabrication. The cylinders must be fabricated in accordance with Section VIII, Division I, of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code and must be ASME Code stamped. Except that the 48X cylinders manufactured by W.H. Stewart Company in accordance with ANSI N14.1-1971 after ANSI N14.1-1982 was approved may be used for shipment in the Paducah Tiger package provided that they are inspected, tested and re-certified in accordance with ANSI N14.1-2001.

7. In addition to the requirements of Subpart G of 10 CFR Part 71, each package shall be maintained, repaired, operated and prepared for shipment in accordance with Operating Instructions and Acceptance Tests and Maintenance Program in the application dated October 28, 1998, as supplemented December 21, 1998, June 7, 1999, and February 29, 2000.

8. Use of Model No. 48A cylinders is not authorized.

9. Use of Model No. 48X cylinders made of A-285 steel is not authorized.

10. The Model 48X cylinder valve stem and plug may be tinned with ASTM B32, alloy 50A or Sn50 solder material, or a mixture of alloy 50A or Sn50 with alloy 40A or Sn40A material, provided the mixture has a minimum tin content of 45 percent.

11. Paducah Tiger overpacks previously constructed in accordance with Martin Marietta Energy Systems, Inc., Drawing Nos. M-1209-NRC-1, Rev. C; M-1209-NRC-2, Rev. A, M-1209-NRC-3, Rev. A; and M-1209-NRC-4, Rev. A, may be used until September 10, 1999. For the overpacks authorized by this condition, the clearance distance between the end of the cylinder valve and the plane of the end of the cylinder skirt must be measured prior to each shipment. The clearance distance must be at least 3/8 inch.

12. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.12, until October 1, 2004, and under the provisions of 10 CFR 71.17, thereafter.

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13. Expiration date: July 31, 2009.

REFERENCES

Safety Analysis Report on the "Paducah Tiger" Protective Overpack for 10-Ton Cylinders of Uranium Hexafluoride, Union Carbide Corporation Report No. KY-665, Revision 1, Dated October 28, 1998.

Supplements dated: December 21, 1998; January 12 and June 7, 1999; February 29, 2000; June 12, 2000; November 1, 2001; and June 18, 2004.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

John D. Monninger, Chief  
Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Date: July 23, 2004

