CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9288	7	71-9288	USA/9288/B(U)F-96	1	OF	5

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)*

Columbiana Hi Tech, LLC
1802 Fairfax Road
Greensboro, NC 27407

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Columbiana Hi Tech, LLC, consolidated application dated February 27, 2006, 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.: CHT-OP-TU

(2) Description

A shipping container for uranium oxide pellets, powder, and uranium-bearing materials. The package is roughly cubical and is approximately 45-inches x 45-inches x 62-inches high. The package has four internal sleeves in which Oxide Vessels are inserted.

The outer shell of the package is constructed of 11-gauge mild or stainless steel and the space between the outer shell and the sleeves are filled with fire retardant, closed cell phenolic or polyurethane foam.

The sleeves are constructed of 11-gauge mild or stainless steel with an inner diameter of 10-1/4 inches. The sleeves are closed with twelve 1/2-inch-diameter bolts using an outer lid assembly on a 1/16-inch-thick neoprene or silicone gasket. The outer lid assembly is filled with fire-retardant, closed cell phenolic or polyurethane foam.

The Oxide Vessel is constructed of series 300 stainless steel, with an inner diameter of either 6, 7.5, or 8 inches. The Oxide Vessel is closed by eight 1/2-inch-diameter bolts on a 5/8-inch-thick stainless steel lid with a double O-ring seal. The O-ring seal material is either silicon rubber, fluorosilicon or fluorocarbon (viton).

The approximate dimensions and weights of the package are as follows:

Sleeve inside diameter	10 1/4-inches
Oxide Vessel inside diameter	6, 7.5, or 8 inches
Oxide Vessel inside height	40 3/4-inches
Overall package dimensions	
width	45 inches
length	45 inches
height	62 inches
Maximum contents weight per Oxide Vessel	402 pounds
Maximum empty transport weight including four empty Oxide Vessels	2576 pounds
Maximum loaded package weight (with four filled Oxide Vessels)	3757 pounds

(3) Drawings

The packaging is constructed and assembled in accordance with Columbiana Hi Tech Drawing Nos.:

OP-TU-SAR, Rev. 12, Sheets 1 of 2 and 2 of 2;
OP-TU-A2, Rev. 12, Sheet 1 of 1;
OP-TU-A3, Rev. 12, Sheet 1 of 1;
OP-TU-A4, Rev. 12, Sheet 1 of 1; and,
OPTU-V-AB1, Rev. 8, Sheets 1 of 2 and 2 of 2.

5.(b) Contents

(1) Type and form of material

Uranium-bearing compounds in solid form, heterogenous or homogenous (i.e., pellets and powder). The contents may include up to 1000 grams of polyethylene or other plastics as packaging, waste or impurities per Oxide Vessel (4000 grams per package), provided that: (1), the total water equivalent of the plastic is less than 1307 grams per Oxide Vessel (5228 grams per package); and, (2) the decay heat is less than 0.068 W/m^3. Materials with a decay heat greater than 0.068 W/m^3 may not be packaged using hydrogen bearing plastics, and may only use non-hydrogen bearing plastics such as Teflon™ (polytetrafluoroethylene or PTFE) or metallic containers. In addition, the contents are limited to:

A. Unirradiated uranium oxide powder enriched to no more than 5.0 weight percent in the U-235 isotope.

B. Unirradiated uranium oxide pellets or a mixture of pellets and powder enriched to no more than 5.0 weight percent in the U-235 isotope.

C. Reprocessed uranium oxide powder enriched to no more than 5.0 weight percent in the U-235 isotope, with limits specified in Table 1.

Table 1: Allowable Content for Shipment of Reprocessed Uranium Oxide

	Maximum Content		
Isotope	Type A	Type B Level I	Type B Level II
U-232 (g/gU)	Mixtures of isotopes shall be evaluated and designated as a Type A quantity per 10 CFR Part 71 Appendix A. The maximum enrichment per package is 5 weight per cent ^{235}U.	2.00E-09	5.00E-09
U-234 (g/gU)		2.00E-03	2.00E-03
U-235 (g/gU)		5.00E-02	5.00E-02
U-236 (g/gU)		2.50E-02	2.50E-01
Np-237 (g/gU)		1.66E-06	5.00E-03
Pu-238 (g/gU)		6.20E-11	4.00E-08
Pu-239 (g/gU)		3.04E-09	3.04E-09
Pu-240 (g/gU)		3.04E-09	6.00E-09
Gamma Emitters (MeV-Bq/kgU)		6.38E+05	1.91E+06

D. Reprocessed uranium oxide pellets or a mixture of pellets and powder enriched to no more than 5.0 weight percent in the U-235 isotope, with the limits specified in Table 1.

E. Homogeneous (powder or crystalline form) uranium-bearing materials enriched to 5.0 weight percent in the U-235 isotope in the form of solids, or solidified or dewatered materials.

Uranium compounds must have a ratio of non-fissile atoms to uranium atoms greater than two (2) and the density of these compounds is less than 10.96 g/cm^3 (density of UO_2). Material such as U-metal, U-metal alloys, or uranium hydrides (e.g., UH_X) may not be shipped. Uranium-bearing materials may include oxides, carbides, silicates or other compounds of uranium. Uranium-bearing materials may be moderated by graphite to any degree. Compounds may be mixed with other non-fissile materials with the exception of beryllium or hydrogenous material enriched in deuterium. Materials with a hydrogen density greater than water must be excluded, except for the allowance provided by Condition No. 5.(b)(1).

F. Heterogeneous (pellets or previously pelletized materials) uranium-bearing materials enriched to 5.0 weight percent in the U-235 isotope in the form of solids, or solidified or dewatered materials.

Uranium compounds must have a ratio of non-fissile atoms to uranium atoms greater than two (2) and the density of these compounds is less than 10.96 g/cm^3 (density of UO_2). Material such as U-metal, U-metal alloys, or uranium hydrides (e.g., UH_X) may not be shipped. Uranium-bearing materials may include oxides, carbides, silicates or other compounds of uranium. Uranium-bearing materials may be moderated by graphite to any degree. Compounds may be mixed with other non-fissile materials with the exception of beryllium or hydrogenous material enriched in deuterium. Materials with a hydrogen density greater than water must be excluded, except for the allowance provided by Condition No. 5.(b)(1).

5.(b)(2) Maximum quantity of material per package

For the contents described in Condition Nos. 5.(b)(1)(A), 5.(b)(1)(C), and 5.(b)(1)(E), the maximum quantity of material is 402 pounds of uranium compounds per 8-inch, 7.5-inch, or 6-inch diameter Oxide Vessel and a maximum load of 1608 pounds per package.

For the contents described in Condition Nos. 5.(b)(1)(B), 5.(b)(1)(D), and 5.(b)(1)(F), the maximum quantity of material is 402 pounds of uranium compounds per 7.5-inch or 6-inch diameter Oxide Vessel and a maximum load of 1608 pounds per package. The 8-inch diameter Oxide Vessel is not authorized for these contents.

The maximum allowable contents heat generation rate is 1.0 BTU/hr/ft^3 (10.3 W/m^3).

5.(c) Criticality Safety Index 2.0

6. In addition to the requirements of Subpart G of 10 CFR Part 71:

(a) The package must be prepared for shipment and operated in accordance with the Operating Procedures in Section 7 of the application, as supplemented.

(b) Each packaging must be acceptance tested and maintained in accordance with the Acceptance Tests and Maintenance Program in Section 8 of the application, as supplemented.

7. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

8. Packagings may be marked with Package Identification Number USA/9288/B(U)F-85 until April 30, 2007, and must be marked with Package Identification Number USA/9288/B(U)F-96 after April 30, 2007.

9. Transport by air of fissile material is not authorized.

10. Revision No. 6 of this certificate may be used until April 30, 2007.

11. Expiration date: March 31, 2010.

REFERENCES

Columbiana Hi Tech, LLC, consolidated application dated February 27, 2006.

Supplement dated April 10, 2006.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/ Joseph M Sebrosky for

Robert A. Nelson, Chief
Licensing Section
Spent Fuel Project Office
Office of Nuclear Material Safety
and Safeguards

Date: 4/24/06