

**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

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| a. ISSUED TO ( <i>Name and Address</i> )<br>Transnuclear, Inc.<br>7135 Minstrel Way, Ste. 300<br>Columbia, MD 21045 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION<br>Siemens Power Corporation application<br>dated January 26, 2000, as supplemented. |
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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.: ANF-250
- (2) Description

A uranium oxide powder/pellet shipping container. The packaging consists of a 16-gauge steel inner vessel, approximately 11-1/2 inches ID by 57 inches long, with a bolted and gasketed top flange closure and steel welded bottom plate. The inner vessel is centered and supported in a 22-1/2-inch ID by 68-3/8-inch long, 16-gauge steel drum by twelve 1/4-inch diameter spring steel rods welded to the inner vessel at the top and the bottom of the vessel. A 3/8-inch thick steel flange and a 16-gauge inner band position and support the top of the inner vessel within the outer container. The annulus between the inner vessel and outer container is filled with vermiculite.

The inner vessel is closed by six 1/2-inch square shank studs with hex head nuts at each end. The outer container is closed with a 12-gauge locking ring with drop forged lugs and a 5/8-inch diameter bolt and lock nut. A "half circle" ("U") type closure ring is used. A product container insert is positioned within the inner vessel.

The maximum gross weight of the packaging and contents is 616 pounds.

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5.(a) (3) Drawings

- (i) The ANF-250 shipping container is constructed in accordance with Siemens Power Corporation Drawing No. EMF-306,175, Rev. 16.
- (ii) The pellet shipping suit case is constructed in accordance with Siemens Power Corporation Drawing No. EMF-304,306, Rev. 8.
- (iii) The powder and pellet product container inserts are constructed in accordance with Siemens Power Corporation Drawing No. EMF-306,176, Rev. 6, Sheets 1 and 2.

(b) Contents

(1) Type and form of material

- (i) Dry uranium oxide powder enriched to a maximum 5.0 w/o in the U-235 isotope with or without burnable absorbers.
- (ii) Dry uranium oxide pellets enriched to a maximum 5.0 w/o in the U-235 isotope with or without burnable absorbers.
- (iii) Dry uranium oxide pellet scrap enriched to a maximum 5.0 w/o in the U-235 isotope with or without burnable absorbers.
- (iv) Uranium oxide pellets enriched to a maximum of 1 w/o in the U-235 isotope with or without burnable absorbers.
- (v) Uranium oxide pellet scrap enriched to a maximum of 1 w/o in the U-235 isotope with or without burnable absorbers.
- (vi) Uranium oxide powder enriched to a maximum of 1 w/o in the U-235 isotope with or without burnable absorbers.

(2) Maximum quantity of material per package

Not to exceed 310 pounds and:

- (i) For the contents described in 5(b)(1)(i):

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5.(b)(2)(i) (continued)

The contents not to exceed the following:

Maximum Enrichment (wt% U-235)	Maximum Uranium Mass (kg U)	Maximum U-235 Mass (kg U-235)
3.4	62.4	2.12
3.8	41.0	1.56
4.6	31.2	1.44
5.0	27.7	1.38

Not to exceed a maximum mass of 1149 g H, considering all sources of hydrogenous material within the inner vessel. The contents must be contained in product container described in 5(a)(3)( iii).

(ii) For the contents described in 5(b)(1)(ii):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 6 kg. Not to exceed a maximum mass of 1149 g H, including a maximum mass of 600 g polyethylene, considering all sources of hydrogenous material within the inner vessel. The contents must be contained in product container described in 5(a)(3)( ii).

(iii) For the contents described in 5(b)(1)(iii):

The total contents not to exceed 61.7 kg U, with the U-235 content not to exceed 3.08 kg. Not to exceed a maximum mass of 1149 g H, including a maximum mass of 600 g polyethylene, considering all sources of hydrogenous material within the inner vessel. The contents must be contained in product container described in 5(a)(3)(ii).

(iv) For the contents described in 5(b)(1)(iv):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 1.2 kg. The contents must be contained in product container described in 5(a)(3)( ii).

(v) For the contents described in 5(b)(1)(v):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 1.2 kg. The contents must be contained in product container described in 5(a)(3)(ii).

(vi) For the contents described in 5(b)(1)(vi):

The total contents not to exceed 120 kg U, with the U-235 content not to exceed 1.2 kg. The contents must be contained in product container described in 5(a)(3)( iii).

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5.(c) Criticality Safety Index

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

For contents described in 5(b)(1)(i) and limited in 5(b)(2)(i): 1.8

For contents described in 5(b)(1)(ii) and 5(b)(1)(iii), and limited in 5(b)(2)(ii) and 5(b)(2)(iii): 0.9

For contents described in 5(b)(1)(iv), 5(b)(1)(v) and 5(b)(1)(vi), and limited in 5(b)(2)(iv), 5(b)(2)(v) and 5(b)(2)(vi): 0.4

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 Chapter 7 of the application.
- b. The packaging must meet the Acceptance Tests and Maintenance Program in Chapter 8 of the application.

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

8. Revision Nos. 13 and 14 may be used until June 30, 2010.

9. Revision No. 15 may be used until July 1, 2011.

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

11. Expiration date: June 30, 2015.



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REFERENCES

Siemens Power Corporation application dated January 26, 2000.

Supplements dated: January 31, June 6, June 15 and September 29, 2000; February 6 and August 21, 2001; December 16, 2004; November 25, 2009; December 21, 2009; December 23, 2009; and April 8, 2010.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

**/RA/**

Eric J. Benner, Chief  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Date: May 27, 2010

