Form NRC-618
(12-73)
10 CFR [illegible]

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE

For Radioactive Materials Packages

1.(a) Certificate Number	1.(b) Revision No.	1.(c) Package Identification No.	1.(d) Pages No.	1.(e) Total No. Pages
6375	6	USA/6375/B( )F	1	3

2. PREAMBLE

2.(a) This certificate is issued to satisfy Sections 173.393a, 173.394, 173.395, and 173.396 of the Department of Transportation Hazardous Materials Regulations (49 CFR 170-189 and 14 CFR 103) and Sections 146-19-10a and 146-19-100 of the Department of Transportation Dangerous Cargoes Regulations (46 CFR 146-149), as amended.

2.(b) The packaging and contents described in item 5 below, meets the safety standards set forth in Subpart C of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."

2.(c) 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--

3.(a) Prepared by (*Name and address*):

Chem-Nuclear Systems, Inc.
P.O. Box 1866
Bellevue, WA 98009

3.(b) Title and identification of report or application:

Philadelphia Electric Company application dated March 6, 1970, as supplemented.

3.(c) Docket No. 71-6375

4. CONDITIONS

This certificate is conditional upon the fulfilling of the requirements of Subpart D of 10 CFR 71, as applicable, and the conditions specified in item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Fissile Class, Other Conditions, and References:

(a) Packaging

(1) Model No.: PB-1

(2) Description

A lead shield shipping cask, encased in mild steel on the outside and stainless steel on the inside. The cask is cylindrical in shape, 173-1/8 inches long and 42-1/2 inches in diameter for all of its length except for a distance of 31-5/8 inches at each end which is 40-1/2 inches in diameter. The principal shielding consists of 6-1/4 inches of lead.

A nine-inch thick impact limiter is attached to both ends of the cask with four of the twelve, 1.25-inch cover bolts (each end of the cask has a cover). The impact limiters are constructed by welding a bundle of 2-1/2-inch, 13-gage tubing between 1/4-inch SS plates and enclosing the bundle with a 1/16-inch SS shell.

The cask cavity is 26 inches in diameter by 159 inches in length. The net weight of the cask is 57,050 pounds. The gross weight, containing blanket fuel assemblies, is 67,050 pounds.

5. (a) Packaging (Cont'd)

(3) Drawings

The Model No. PB-1 shipping cask is constructed in accordance with the following Battelle Memorial Institute Drawings Nos.:

9123-6PB-0001, Rev. B	Whitehead & Kales PB-1 Shipping Container
00-000-552, Rev. 0	Fuel Basket Container Assembly PRDC

(b) Contents

(1) Type and form of material

(i) Irradiated Peach Bottom Unit 1, whole or partial fuel elements, circular in cross section, 3-1/2 inches in diameter and up to 144 inches long, sealed in canisters in a helium atmosphere. In case that the canisters are found not to be leaktight, salvage canisters shall be provided to ensure containment. The maximum U-235 loading of each fuel element is 300 gm and the minimum atom ratio of thorium-232 to uranium-235 is 5.37, except that one such element per package may have a loading of 415 grams U-235 and minimum thorium-232 to uranium-235 atom ratio of 4.0. The maximum enrichment of U-235 shall be 93.5 weight percent.

(ii) Irradiated blanket fuel subassemblies from the Enrico Fermi Atomic Reactor. Each fuel rod contains an alloy of 97 w/o U-238 (0.3 w/o U-235)-3 w/o Mo.

(iii) Solid non-fissile irradiated hardware and neutron source components.

(2) Maximum quantity of material per package

(i) Item 5(b)(1)(i) above, eighteen fuel elements, each weighing up to 90 pounds.

(ii) Item 5(b)(1)(ii) above, 47 radial blanket subassemblies or 227 upper and lower axial blanket subassemblies sealed in Fuel Basket Container shown in Battelle Memorial Institute Drawing No. 00-000-552, Rev. 0, and containing up to 9,000 curies of mixed fission products.

5. (b) Contents (continued)

(iii) Item 5 (b)(1)(iii) above, maximum weight of contents, including any container, shall be 10,000 pounds. As needed, appropriate component spacers shall be used in the cask cavity to limit movement of contents during shipment.

(3) Maximum decay heat per package 3,715 watts

(c) Fissile Class I and II

(2) Item 5(b)(1)(i) above, II

Minimum transport index to be shown on label 10

(2) Item 5(b)(1)(ii) above, I

6. If the cask contents are shipped wet, the licensee shall confirm that the pressure relief valve is operable to avoid damage of any component of the package due to excessive pressure under normal or accident conditions. Also, when needed, sufficient antifreeze shall be used to prevent freezing. Blanket full assemblies shall be shipped dry.

7. Pipe plugs may be used as seals for the pressure gage, vent and drain lines.

8. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).

9. Expiration date: December 31, 1979.

REFERENCES

Philadelphia Electric Company application dated March 6, 1970.

Supplements dated: May 19, June 10, and July 22, 1970; September 25, 1970; August 14 and December 17, 1974; and August 14, 1975.

Chem-Nuclear System, Inc. letter dated September 16, 1977.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety

Date: SEP 10 1979

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