

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
6581	13	USA/6581/B()F	1	4

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 Cargo 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):	3.(b) Title and identification of report or application:
EXXON Nuclear Company, Inc. 2955 Geroge Washington Way Richland, WA 99352	EXXON Nuclear Company, Inc. application dated June 15, 1979, as supplemented.
	3.(c) Docket No. 71-6581

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 Nos.: 51032-1 and 51032-1a
- (2) Description

A steel shipping container for fuel bundles, consisting of a strongback and fuel bundle clamping assembly, shock mounted to a steel outer container. Minimum 3/8" thick wall, 6" x 8" x 8-1/2" long steel separators are bolted between fuel bundles. Outer container is approximately 43" diameter by 216" long. The maximum weight of the package is 7,400 pounds for the Model No. 51032-1 and 8,300 pounds for the Model No. 51032-1a.

(3) Drawings

The Model Nos. 51032-1 and 51032-1a are constructed in accordance with EXXON Nuclear Company, Inc. Drawing Nos.:

XN-NF-303,359, Sheet 1, Rev. 1
XN-NF-303,360, Sheet 1, Rev. 1
XN-NF-303,364, Sheet 1, Rev. 1; and

Package-separate block, shock mount, and fuel element clamp assembly requirements shall be in accordance with Tables 2-II thru 2-IX (pp 2-16 thru 2-23) of the application; and

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5. (a) Packaging (continued)

(3) Drawings (continued)

The Model No. 51032-1 is constructed in accordance with EXXON Nuclear Company, Inc. Drawing Nos.:

XN-NF-303,890, Sheet 1, Rev. 0	XN-NF-303,891, Sheet 1, Rev. 0
XN-300,609, Sheet 1, Rev. 1	XN-NF-303,898, Sheet 1, Rev. 0
XN-NF-303,897, Sheet 1, Rev. 0	

and

Jersey Nuclear Company Drawing Nos.:

JN-300,607, Sheet 1, Rev. 0
 JN-600,843, Sheet 1, Rev. 3
 JN-600,844, Sheet 1, Rev. 2; or

The Model No. 51032-1a is constructed in accordance with EXXON Nuclear Company, Inc. Drawing Nos.:

XN-NF-303,354, Sheet 1, Rev. 2	XN-NF-303,357, Sheet 2, Rev. 1
XN-NF-303,355, Sheet 1, Rev. 1	XN-NF-303,358, Sheet 1, Rev. 1
XN-NF-303,356, Sheet 1, Rev. 1	XN-NF-303,818, Sheet 1, Rev. 0
XN-NF-303,357, Sheet 1, Rev. 1	

(b) Contents

Type, form, and maximum quantity of material per package shall be as follows:

(1) UO_2 or unpressurized (Atm pressure) PuO_2-UO_2 fuel assemblies as follows:

Fuel Type ^a	Radioactive Material (kg/Package)		Fissile Constitutents (kg/Package)		Maximum No. of Assemblies per Package
TYPE I	U	362	U-235	7.6	2
	Pu	2.5	Pu_f	2.0	
TYPE II	U	510	U-235	16.0	4
	Pu	6.0	Pu_f	4.8	
TYPE III	U	510	U-235	23.0	4
	Pu	6.3	Pu_f	5.0	

^aSee Tables 2-XV thru 2-XIX and 12-XIV of application for the limiting physical characteristics of each fuel type.

5. (b) Contents (continued)

Fuel Type ^a	Radioactive Material (kg/Package)		Fissile Constituents (kg/Package)		Maximum No. of Assemblies per Package
	U	Pu	U-235	Pu _f	
TYPE IV	U	240	U-235	5.0	2
	Pu	1.8	Pu _f	1.4	
A	U	700	U-235	24.5	2 or 4 ^b
B	U	1,500	U-235	52.5	2 or 4 ^b
C	U	1,500	U-235	60.0	2 or 4 ^b
D	U	1,500	U-235	60.0	2 or 4 ^b
E	U	1,500	U-235	60.0	2 or 4 ^b
F	U	1,500	U-235	75.0	2 or 4 ^b
AA ^c	U	1,100	U-235	38.5	2

^bTwo (2) fuel elements of standard length or four (4) short elements of equivalent weight.

^cAuthorized for shipment only in Model No. 51032-1a container.

A single (1) fuel rod may be added to the above packaging in accordance with Paragraph 12.4.3.4 (pp 12-19 and 12-20) of the application.

- (2) Sintered uranium oxide pellets as Zr clad fuel rods packaged within the inner wooden container described by EXXON Nuclear Company, Inc. Drawing No. XN-301,901, Rev. 1. The package may contain up to nine (9) fuel rods having a maximum enrichment of 5.0 wt% U-235 with a maximum pellet diameter of 0.5 inches. Inert Zr rods may be additionally included.

- (c) Fissile Class I and III
- (1) Class I Types I, II, IV, A, B, and AA described and limited in 5(b)(1).
- (2) Maximum number of packages per shipment as Class III
- (1) Types III, C, D, E, and F, assemblies described and limited in 5(b)(1);
- Eight (8) packages
- (ii) For the contents described and limited in 5(b)(2)
- One (1) package


6. Each fuel assembly shall be enclosed in an unsealed polyethylene sheath which will not extend beyond the ends of the fuel assemblies. The ends of the sheaths shall not be folded or taped in any manner that would prevent the flow of liquids into or out of the sheathed fuel assemblies. Polyethylene shims and ethafoam pads may be used in the packaging of fuel assemblies in accordance with p. 2-6 and Table 12-XIV of the application.
7. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12(b).
8. Expiration date: July 31, 1985.

REFERENCES

EXXON Nuclear Company, Inc. application dated June 15, 1979.

Supplements dated: November 30, 1979; and June 13 and August 6 and 15, 1980.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION


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

Date: SEP 22 1980