NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE		PAGES
9289	7	71-9289	USA/9289/B(U)F-85	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)*

Framatome Inc.
2101 Horn Rapids Road,
Richland, WA 99354

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Framatome Cogema Fuels application dated May 1, 2002, 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.: WE-1

(2) Description

A fresh fuel assembly shipping container. The package has two shipping configurations: one for shipping a single BW 17x17 fuel assembly composed of uranium dioxide pellets within zircalloy cladding; and the other for shipping up to 48 Pathfinder fuel assemblies within a steel canister which functions as a secondary containment vessel. The package consists of a cylindrical outer container and a rectangular inner container bolted to a strongback. The outer container is constructed of 11 gauge carbon steel and opens into two semi-cylindrical halves. The inner container is comprised of 1-inch thick carbon steel plates that are bolted together. The inner container is secured to the strongback by bolts and clamp arms. Wood blocks surround the region between the inner container and the strongback. The strongback is supported by 14 shock mounts attached to the outer container.

<u>For BW 17x17 Fuel Shipment Configuration:</u>

The BW 17x17 fuel assembly shipment configuration consists of the fuel assembly placed into the inner container. The fuel assembly is surrounded by thermal insulation and secured inside the inner container with nine integral clamp frames.

5. (2) Description (Continued)

For Pathfinder Fuel Shipment Configuration:

Pathfinder Fuel shipment configuration consists of the Pathfinder fuel in the Pathfinder Canister, which is placed into the inner container. The Pathfinder Canister is a sealed cylindrical canister which houses up to 48 Pathfinder fuel assemblies. Wood dunnage or empty sheaths may be used to fill empty spaces in the canister. The canister is made of austenitic stainless steel and has a welded body and a bolted closure lid. The Pathfinder Canister is surrounded by thermal insulation, and secured inside the inner container with five integral clamp frames. The clamp frames, which consist of bolted clamp arms, are bolted to the inner rectangular container. Wood blocks surround both ends of the Pathfinder Canister. A stainless steel spacer tube is used to fill the space between the Pathfinder Canister and the inner container.

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

Inner container length	165 inches
Inner container width (sq)	16 ½ inches
Outer container length	216 inches
Outer container diameter	44 inches
Maximum content weight	1610 pounds
Maximum package weight (including contents)	9090 pounds

(3) Drawings

The packaging is constructed in accordance with the following Framatome Cogema Fuels Drawing Nos.:

1273964, Rev. 0
1273965, Rev. 1
1273966, Rev. 0
1273967, Rev. 0
1273968, Rev. 0

The Pathfinder Canister Configuration is constructed in accordance with the following Framatome ANP Drawing Nos.:

5016270, Rev. 1
5021426, Sheets 1 and 2, Rev. 0.

(b) Contents

(1) Type and form of material

(i) For BW 17x17 Fuel Shipment Configuration:

A fuel assembly composed of uranium dioxide pellets within zircalloy cladding. The fuel assembly has the following specifications:

Assembly type	BW 17x17
No. fuel rods	264
No. non-fuel tubes	25
Nominal fuel rod pitch, in.	0.496
Maximum fuel pellet OD, in.	0.3232
Nominal clad OD, in.	0.374
Nominal clad thickness, in.	0.022
Nominal guide and instrument tube OD, in.	0.48
Nominal guide and instrument tube ID, in.	0.452
Nominal active fuel length, in.	144
Maximum uranium enrichment, weight percent U-235	4.6
Maximum U-235 mass, kg	22.14

(ii) For Pathfinder Fuel Shipment Configuration:

An unirradiated fuel assembly composed of six fuel pins clustered around a center absorber pin in a hexagonal pattern. The fuel pins consist of uranium dioxide pellets inside Incoloy 800 cladding. The absorber pin consists of Incoloy 800 cladding with or without poison material. Fuel pins and absorber pins are separated by spacer wires and enclosed in a cylindrical sheath made of stainless steel, incoloy or incoloy alloy. The fuel assembly has the following specifications:

Assembly type	Pathfinder
No. fuel pins per assembly	6
No. non-fuel pins per assembly	1
Maximum uranium enrichment, weight percent U-235	7.51
Maximum uranium mass per assembly, kg U	2.2281

5. (b) Contents (continued)

Maximum UO_2 density, g/cm^3	10.61
Fuel pellet outer diameter (OD), in.	0.207 ± 0.0005
Nominal active fuel length, in.	72.0
Minimum clad OD, in.	0.246
Maximum clad inner diameter (ID), in.	0.212
Nominal center-to-center pin pitch, in.	0.289
Nominal sheath ID, in.	0.945
Nominal sheath OD, in.	1.00

(2) Maximum quantity of material per package

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

One BW 17x17 fuel assembly contents, not to exceed 1610 pounds. The radioactive material may not exceed any of the following limits:

U-232	0.01 microgram per gram of uranium
U-234	0.001 gram per gram of uranium
U-236	0.013 gram per gram of uranium
Tc-99	5 micrograms per gram of uranium
Fission Products	4.4 x 10^5 MeV-Becquerel per kilogram of uranium
Np and Pu	35 Becquerels per gram of uranium

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

Up to 48 unirradiated Pathfinder fuel assemblies inside a Pathfinder Canister. The weight of the fully loaded canister not to exceed 800 pounds.

(c) Criticality Safety Index (CSI): 100

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

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

(b) The packaging must meet the Acceptance Tests and Maintenance Program of Chapter 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. Transport by air of fissile material is not authorized.

9. Expiration date: March 31, 2024.

REFERENCES

Framatome ANP, Inc. application dated: May 1, 2002.

Supplements dated: November 12, 2002 and January 8, 2004;

AREVA NP Inc, Supplements dated: January 23, 2009 and January 29, 2014;

Framatome Inc. supplements dated: January 17, 2018 and March 29, 2019.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

John McKirgan, Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Date: 3/29/19

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION REPORT
Docket No. 71-9289
Model No. WE-1
Certificate of Compliance No. 9289
Revision No. 7

EVALUATION

By letter dated March 29, 2019, Framatome, Inc., requested renewal of Certificate of Compliance No. 9289 for the Model No. WE-1 transportation package. Framatome did not request any changes to the package design, operating procedures, or acceptance tests and maintenance program.

These changes do not affect the ability of the package to meet the requirements of Title 10 of the *Code of Federal Regulations* Part 71.

CONDITIONS

Condition 9 was deleted since it expired, and condition 10 was renumbered.

Renumbered Condition No. 9 was revised do reflect the new expiration date of March 31, 2024.

The references section has been updated to include the application and supplements were clarified to indicate which certificate holder submitted them.

CONCLUSION

Based on the statements contained in the application, and the conditions listed above, the staff concludes that the changes indicated do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9289, Revision No. 7.