

**CERTIFICATE OF COMPLIANCE
FOR RADIOACTIVE MATERIAL PACKAGES**

1. a. CERTIFICATE NUMBER	b. REVISION NUMBER	c. DOCKET NUMBER	d. PACKAGE IDENTIFICATION NUMBER	PAGE	PAGES
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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>)
Framatome Inc.
2101 Horn Rapids Road,
Richland, WA 99354 | b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION
AREVA NP, Inc., consolidated application dated
October 28, 2008, 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.: 51032-2

(2) Description

A steel shipping container for fuel bundles, consisting of a strong-back and fuel bundle clamping assembly, shock mounted to a steel outer container. Nine separator blocks, which are 6" x 8" x 8-1/2" long and have a 3/8" thick wall and a rectangular gusset plate welded inside, are bolted between fuel bundles. The outer container is composed of an 11 gauge steel shell approximately 43" diameter by 216" long. The maximum weight of the package, including contents, is 7,500 pounds.

(3) Drawings

The packaging is constructed and assembled in accordance with the following AREVA NP Inc. Drawing Nos.: 02-1215926C-002; 02-1215929D-003; 02-1215930D-003; 02-1215931D-003; 02-1215932D-003; 02-1215933D-003; 02-1215934C-002; 02-1215935D-003; 02-1216010D-001.

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5.(b) Contents

(1) Type and form of material

Unirradiated fuel assemblies, composed of uranium dioxide fuel pellets clad in zircaloy tubes. The fuel assemblies have the following parameters:

Fuel Rod Array	15x15		17x17		16x16
Assembly Type	1 MkB HTP	2 Adv W HTP	1 Adv W HTP	2 MKC	CE 16 Long
Nominal Fuel Rod Pitch, in	0.568	0.563	0.496	0.502	0.506
Number of Fuel Rods	208	204	264	264	236
Maximum Enrichment, wt% 235U	4.8	4.8	4.8	4.8	5.0
Maximum Pellet Density, %TD	97.5	97.5	97.5	97.5	97.5
Minimum Pellet Outer Diameter, in	0.3693	0.3668	0.3218	0.3238	0.3245
Minimum Clad Outer Diameter, in	0.428	0.422	0.372	0.377	0.38
Minimum Clad Wall Thickness, in	0.023	0.023	0.0205	0.022	0.0238
Number of Guide Tubes	16	20	24	24	4
Minimum Guide Tube Outer Diameter, in	0.528	0.542	0.478	0.472	-
Minimum Guide Tube Wall Thickness, in	0.014	0.0145	0.013	0.02	-
Number of Instrument Tubes	1	1	1	1	1
Minimum Instrument Outer Diameter, in	0.491	0.542	0.478	0.472	-
Minimum Instrument Wall Thickness, in	0.024	0.0145	0.013	0.02	-
Clad/Tube Material Type	Zr Alloy	Zr Alloy	Zr Alloy	Zr Alloy	Zr Alloy
Maximum Active Fuel Length, in	144	144	144	144	196

(2) Maximum quantity of material per package

Two fuel assemblies. Total weight of fuel assemblies, including control rod assemblies, not to exceed 3300 pounds.

Maximum quantity of radioactive material within a package may not exceed a Type A quantity.

5.(c) Criticality Safety Index (CSI): 1.0

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6. Each fuel assembly must be unsheathed or must be enclosed in an unsealed polyethylene sheath which will not extend beyond the ends of the fuel assemblies. The ends of the sheaths must not be folded or taped in any manner that would prevent the flow of liquids into or out of the sheathed fuel assemblies.
7. Hydrogenous shims are not permitted within the fuel assemblies.
8. 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 Chapter 7.0 of the application.
 - (b) Each packaging shall be maintained in accordance with Section 8.2 of the application.
 - (c) Each packaging shall meet the acceptance tests in Section 8.1 of the application.
9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.
10. Transport by air of fissile material is not authorized.
11. Expiration date: January 31, 2024.

REFERENCES

AREVA NP Inc. consolidated application dated October 28, 2008.

Supplement dated: November 4, 2008; July 7, 2009; September 19, and December 18, 2013; January 17, and August 7, 2018.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

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

Date: 1/31/19