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
9329	6	71-9329	USA/9329/AF-96	1	OF	4

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)*

National Nuclear Security Administration
P.O. Box 5400
Albuquerque, NM 87185

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Los Alamos National Laboratory
Application, "S300 Fissile Material Package, Safety Analysis Report," Revision No. 5, June 2010, 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.: S300

(2) Description

The Model No. S300 package is a cylindrical container that is approximately 89 centimeters (35 inches) in overall height and 60 centimeters (23 inches) in overall diameter. The Model No. S300 is comprised of an overpack, pipe component, and a shielding insert. The Model No. S300 is designed to transport a single special form capsule (SFC). The maximum gross weight of the package is 217.7 kilograms (480 lbs).

The overpack design utilizes a standard 55-gallon drum as the outer container. A standard bolted clamping ring secures the drum lid to the drum body. Within the drum body is a rigid polyethylene liner (body and lid). Lid liner and lid are pierced and the drum lid is fitted with a filter vent. Within the liner is cane fiberboard dunnage and a sheet of plywood to provide shock absorption for the pipe component.

The pipe component consists of a stainless steel cylindrical pipe welded to a stainless steel flat cap at the bottom end and a bolted pipe flange at the other end. The pipe component is closed with a stainless steel flat lid attached to the flange with 12 stainless steel bolts. A filter vent is installed in the lid. The flange-to-lid seal is either a butyl or ethylene propylene elastomeric o-ring.

5. a. Packaging (continued)

(2) Description (continued)

The shielding insert is located within the pipe component. The shielding insert is made from solid high density polyethylene plastic. Within the shielding insert is a cylindrical opening sized to accommodate the SFC.

(3) Drawings

The packaging is constructed in accordance with AREVA Drawing No. 60999-SAR, sheets 1 through 3, Revision 1, S300 Packaging SAR Drawing.

b. Contents

(1) Type and form material

Content No. 1: Plutonium-Beryllium (α,n) neutron sources (not to exceed 1.519E+5 neutrons/second per gram of plutonium), or plutonium-based (α,n) neutron sources.

Content No. 2: Plutonium, other than neutron sources with (α,n) target material, in solid form.

Content Nos. 1 and 2 must meet the requirements of special form sources and are limited to:

(a) The Model II source capsule - IAEA Certificate of Competent Authority Special Form Radioactive Materials Certificate Number USA/0696/S–96, issued by the U.S. Department of Transportation (DOT), assembled in accordance with AEA Technology QSA, Inc., Drawing No. R20047, Rev. B, or LANL Drawing No. 90Y-219998, Rev. H.

(b) The Model III source capsule - IAEA Certificate of Competent Authority Special Form Radioactive Materials Certificate Number USA/0695/S–96, issued by the DOT, assembled in accordance with AEA Technology QSA, Inc., Drawing No. R20048, Rev. B, or LANL Drawing No. 90Y-220045, Rev. A.

5. b. Contents (continued)

(2) Maximum quantity of material per package:

One source capsule, containing a maximum quantity of fissile plutonium (Pu-239 plus Pu-241) as shown below.

	Non-Exclusive Use Shipment		**Exclusive Use Shipment**	
	Model II	**Model III**	**Model II**	**Model III**
Content No. 1	*206 grams fissile plutonium*	*160 grams fissile plutonium*	*350 grams fissile plutonium*	*160 grams fissile plutonium*
Content No. 2	300 grams plutonium	160 grams plutonium	300 grams plutonium	160 grams plutonium

Source capsule may contain radionuclides listed below within the ranges shown.

Radionuclide	Percentage of total plutonium mass
Pu-238	0 – 0.5%
Pu-239	73 – 97%
Pu-240	3 – 21%
Pu-241	0 – 3%
Pu-242	0 – 2%
Am-241	0 – 2.5%

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

c. Criticality Safety Index

Content No. 1 0.3

Content No. 2 4.0

6. Transport by air is not authorized.

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

   a. Each package shall be prepared for shipment and operated in accordance with the "Package Operations," in Chapter 7 of the application.

   b. Each package shall be tested and maintained in accordance with the "Acceptance Tests and Maintenance Program," in Chapter 8 of the application.

8. Prior to each shipment, the package must be inspected to ensure the packaging is conspicuously and durably marked with its model number, serial number, gross weight, and package identification number, USA/9329/AF-96.

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

10. Revision No. 5 of this certificate may be used until January 31, 2023.

11. Expiration date: January 31, 2027.

REFERENCES

Los Alamos National Laboratory Application, "S300 Fissile Material Package, Safety Analysis Report," Revision No. 5, June 2010.

Supplemented on: September 22 and October 14, 2016, and December 14, 2021.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Yoira K. Diaz-Sanabria

Digitally signed by Yoira K. Diaz-Sanabria
Date: 2022.01.25 15:49:39 -05'00'

Yoira K. Díaz Sanabria, Chief
Storage and Transportation Licensing Branch
Division of Fuel Storage Management
Office of Nuclear Material Safety
and Safeguards

Date: January 25, 2022

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

SAFETY EVALUATION REPORT
Docket No. 71-9329
Model No. S300
Certificate of Compliance No. 9329
Revision No. 6

SUMMARY

By application dated December 14, 2021 [Agencywide Documents Access Management System (ADAMS) Accession Number (No.) ML22005A346], the National Nuclear Security Administration's Office of Packaging and Transportation (NNSA or the applicant) submitted a renewal request for Certificate of Compliance (CoC) No. 9329 for the Model No. S300 package. Chapter 9 of Revision 5 of the application (ADAMS Accession No. ML16295A317) includes a description of the quality assurance program applicable to the Model No. S300 transportation package. The certificate has been renewed for an additional five-year term.

EVALUATION

By letter dated December 14, 2021, the applicant requested renewal of CoC No. 9329 for the Model No. S300 package. The applicant did not request any changes to the package design, operating procedures, acceptance tests, or maintenance program for the package. The NRC staff (the staff) verified that Revision 5 of the application was available in ADAMS, since it is referenced in Certificate of Compliance No. 9329 as the consolidated application. The staff checked that the consolidated application included a description of the quality assurance program applicable to the Model No. 9329.

The staff reviewed the contents of Revision 5 of the certificate and verified that the dates and description of Revision 5 of the application and applicable supplements were accurate. The section, "Conditions," of this safety evaluation includes a discussion about the changes to the certificate. The certificate has been renewed for an additional five-year term expiring on January 31, 2027.

CONDITIONS

The following sections and conditions were changed in the CoC:

1) Section No. 3.b. has been revised to include the title, moth, and year of the application and state that the application and its supplements are part of the information considered as part of the renewal.

2) The first table in Condition No. 5.b.(2) was rearranged to improve readability. There were no changes to the contents of the table. Since this change was editorial, the staff did not include change bars in the CoC.

3) Condition No. 10 has been revised to indicate that Revision No. 5 of the certificate may be used until January 31, 2023.

4) Condition No. 11 has been revised with an expiration date of January 31, 2027.

The “REFERENCES” Section of the CoC was revised to add more detailed information about the documents related to Revision 6 of CoC No. 9329 starting with adding the title, month, and year of Revision 5 of the application. The documents listed as supplements dated are mostly related to renewal request. The documents dated September 22, 2016, (ADAMS Accession No. ML16278A639) and December 14, 2021 (ADAMS Accession No. ML22005A346), correspond to renewal requests with no changes to Revision 5 of the application. The document dated October 14, 2016 (ADAMS Accession No. ML16295A091) corresponds to the transmittal letter of Revision 5 of the application requested when processing the renewal in 2016 (ADAMS Package Accession No. ML16305A112).

CONCLUSION

Based on the statements and representations contained in the application and the conditions listed above, the staff concludes that the design of the Model No. S300 package has been adequately described and evaluated. The staff concludes that the changes indicated in the certificate do not affect the ability of the package to meet the requirements of 10 CFR Part 71. The certificate has been renewed for an additional five-year term expiring on January 31, 2027.

Issued with Certificate of Compliance No. 9329,
Revision No. 6, on January 25, 2022.