Canada's Nuclear Regulator
L'organisme de réglementation nucléaire du Canada

Canadian Certificate No.	Issue Date	Expiry Date	CNSC File
CDN/E232/-96 (Rev. 2)	**Apr-13-2012**	**Mar-28-2016**	**30-10-2-189**

Certificate
for
Endorsement of Transport Package Design
No. USA/9329/AF-96 (Rev. 3)

The transport package design identified below is certified by the Canadian Nuclear Safety Commission pursuant to paragraph 21(1)(h) of the *Nuclear Safety and Control Act* and Section 7 of the *Packaging and Transport of Nuclear Substances Regulations*, and to the 1996 Edition (Revised) of the IAEA *Regulations for the Safe Transport of Radioactive Material*.

REGISTRATION OF USE OF PACKAGES

All users of this authorization shall register their identity in writing with the Canadian Nuclear Safety Commission prior to the first use of this authorization and shall certify that they possess the instructions necessary for preparation of the package for shipment

PACKAGE IDENTIFICATION

Designer: **Los Alamos National Laboratories**
Make/Model: **S-300**
Mode of Transport: **Road**

IDENTIFICATION MARK

The package shall bear the competent authority identification mark **"USA/9329/AF-96"**.

PACKAGE DESCRIPTION

The package as further described in Foreign Certificate No. USA/9329/AF-96 (Rev. 3), consists of an overpack, pipe and shielding insert. The overpack consists of a standard 55-gallon drum as outer container. A bolted clamping ring secures the drum lid to the drum body. The lid is fitted with a filter vent. The outer container is lined with polyethylene liner (body and lid). Cane fiberboard dunnage is used within the poly liner to hold the pipe component in an approximately central position and to absorb shock.

The pipe component consists of a cylindrical pipe welded to a flat cap at the bottom end and a pipe bolting flange at the other end. The pipe component is closed with a flat lid which is attached by 12, 7/8-9 UNC stainless steel bolts. A filter vent is installed in the lid. The lid/flange joint features a butyl or ethylene/propylene rubber O-ring dust seal. The minimum thickness of the pipe wall is 5.6 mm and the minimum thickness of the bottom cap is 6.4 mm. The nominal thickness of the lid is 22.9 mm.

The neutron shielding insert is a two-part assembly consisting of a cylindrical body and stepped lid which nominally fills the cavity within the pipe component. The shielding lid is held in place by the bolted lid of the

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pipe component. The insert is made from solid, high density polyethylene (HDPE) plastic almost 100 mm thick.

Containment is provided by special form capsule.

An illustration of the package is shown on attached Figure 1-1 S-300 Package Configuration.

The configuration of the S-300 is as follows:

Shape:	**Cylinder**	Shielding:	**Polyethylene**
Mass:	**217 kg**	Outer Casing:	**Steel or Stainless Steel**
Length:	**n/a**	Height:	**889 mm**
Width:	**n/a**	Diameter:	**574 mm**

AUTHORIZED RADIOACTIVE CONTENTS

This package is authorized to contain up to 273 GBq / 32 grams of mixture of isotopes as listed in Appendix A attached, encapsulated in a Model II special form capsule as further described in Foreign Certificate No. USA/9329/AF-96, (Rev. 3).

QUALITY ASSURANCE

Quality assurance for the design, manufacture, testing, documentation, use, maintenance and inspection of the package shall be in accordance with:

- Foreign Certificate No. USA/9329/AF-96, (Rev. 3)
- Packaging and Transport of Nuclear Substances Regulations
- IAEA Regulations

SHIPMENT

The preparation for shipment of the package shall be in accordance with

- Foreign Certificate No. USA/9329/AF-96, (Rev. 3)
- Packaging and Transport of Nuclear Substances Regulations
- IAEA Regulations

Shipment is authorized as fissile with a minimum Criticality Safety Index (CSI) of 0.0 for criticality control.

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This certificate is valid only in Canada.

S. Faille
Designated Officer pursuant to paragraph 37(2)(a)
of the Nuclear Safety and Control Act

NOTES

Revision 2: April 13, 2012. Certificate renewed.