



Department of Energy

Washington, DC 20585

September 2, 2026

MEMORANDUM FOR EDWIN R. DESHONG, III
MANAGER
SAVANNAH RIVER OPERATIONS OFFICE

FROM: JULIA C. SHENK **JULIA SHENK**
HEADQUARTERS CERTIFYING OFFICIAL
DIRECTOR
OFFICE OF PACKAGING AND TRANSPORTATION

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SHENK
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SUBJECT: Amendment of Department of Energy Certificate of Compliance
Number 9979

In response to the email request December 1, 2025, as supplemented April 13, 2026, by Luke Sobus on behalf of the DOE Savannah River Site Office Manager, Department of Energy (DOE) Certificate of the Compliance (CoC) Number 9979, Revision 21, for the Model 9979 package is issued for amendment and with its Safety Evaluation Report. Changes to the CoC are indicated by vertical bars in the right page margin.

This CoC is issued by DOE under the authority of 49 CFR 173.7(d) and is conditional upon fulfilling the applicable Operational and Quality requirements of 49 CFR Parts 100-199 and 10 CFR Part 71, and the conditions specified in Item 5 of the CoC.

The expiration date of the certificate is September 30, 2030.

If you have any questions, please contact me or Lawrence Gelder at 803-645-3430 or lawrence.gelder@em.doe.gov.

Attachments

cc: Luke Sobus, SR
Matthew Howard, SRNL
Zenghu Han, ANL
Christopher Cable, EM-4.24
Docket 26-04-9979



**CERTIFICATE OF COMPLIANCE
For Radioactive Materials Package**

a. Certificate Number	1b. Revision No.	1c. Package Identification No.	1d. Page No.	1e. Total No. Pages
9979	21	USA/9979/AF-96 (DOE)	1	13

2. PREAMBLE

- 2a. This certificate is issued under the authority of 49 CFR Part 173.7(d).
- 2b. The packaging and contents described in Item 5 below meet the safety standards set forth in subpart E, "Package Approval Standards" and subpart F, "Package, Special Form, and LSA III Tests" Title 10, Code of Federal Regulations, Part 71.
- 2c. 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 —

(1) Prepared by (*Name and Address*):

U.S. Department of Energy
Savannah River Operations
Office
P.O. Box A
Aiken, SC 29808

(2) Title and identification of report or application:

Safety Analysis Report for Packaging
Model 9979 Type AF-96, S-SARP-G-00006,
Revision 7, December 2020, as supplemented
[see 5(e)]

(3) Date:

December 2020

4. CONDITIONS

This certificate is conditional upon fulfilling of the applicable Operational and Quality Assurance requirements of 49CFR parts 100 – 199 and 10CFR Part 71, and the conditions specified in Item 5 below.

5. Description of Packaging and Authorized Contents, Model Number, Transport Index, other Conditions, and References:

(a) Packaging

(1) Model Number: 9979

(2) Description:

The Model No. 9979 packaging is composed of one 55-gallon drum overpack and one 30-gallon inner drum. The packaging configuration is shown in Figure 1 below.

The 55-gallon drum and its lid, fabricated from 16-gauge carbon steel, include a welded steel liner containing a polyurethane foam for thermal insulation and structural support. When installed, the lid assembly extends into the drum body liner. An ethylene propylene diene M-class (EPDM) gasket seals the overpack closure. The 30-gallon inner drum, fabricated from 18-gauge carbon steel, is positioned centrally, both radially and axially, within the 55-gallon drum overpack steel liner. The inner drum, which secures the radioactive contents payload, is the containment boundary for the package. A silicone gasket seals the 30-gallon containment drum closure.

6a. Date of Issuance: September 2, 2026

6b. Expiration Date: September 30, 2030

FOR THE U.S. DEPARTMENT OF ENERGY

7a. Address (of DOE Issuing Office)

U.S. Department of Energy
Office of Packaging and Transportation (EM-4.24)
1000 Independence Avenue, SW
Washington, DC 20585

7b. Signature, Name, and Title (of DOE Approving Official)

JULIA
SHENK

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SHENK
Date: 2026.09.02
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Julia C. Shenk
Headquarters Certifying Official
Director
Office of Packaging and Transportation

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The 30-gallon drum lid configuration includes two safety components: a Pressure Relief Device (PRD) is required on all lids to prevent over pressurization of the drum, and the option to use either a Compact Augmented Permeation System device (CAPS), which is used prevent the accumulation of a flammable gas mixture in the drum, or a 3/4-in. Blind Plug, which is used for containment of the contents at drum pressures. The 55-gallon drum body must be include a 1/8-in. diffusion hole (Drawing R-R2-G-0057, Note 16) when the CAPS device is used on the 30-gallon drum lid.

Reinforced split-ring devices, fabricated from 12-gauge carbon steel, provide secure closures for both the 30-and 55-gallon drums. Tamper Indicating Devices (TID) can be inserted through the lugs welded at each end of the two split-rings for both the 55-and 30-gallon drums.

Two thermal insulation components, made of a ceramic fiber mat sandwiched and sewn between flexible fiberglass woven cloth, are added to the packaging: a quilted insulation cover, 21 1/2 inches in diameter by 1/2 inch thick is positioned between the 30-gallon and 55-gallon drum closure lid and an insulation bag (optional for non-combustible contents) is installed in the 30-gallon drum.

The 55-gallon drum is nominally 23 inches in diameter and 34 1/2 inches in height. The nominal weight of the overpack (body, closure lid and split-ring closure device) is 174.5 lb. The 30-gallon drum is nominally 18.6 inches in diameter and 29 inches in height. The 30-gallon drum with its lid and the split-ring closure weighs approximately 50 lb.

The gross weight of a fully loaded package shall not exceed 415 lb.

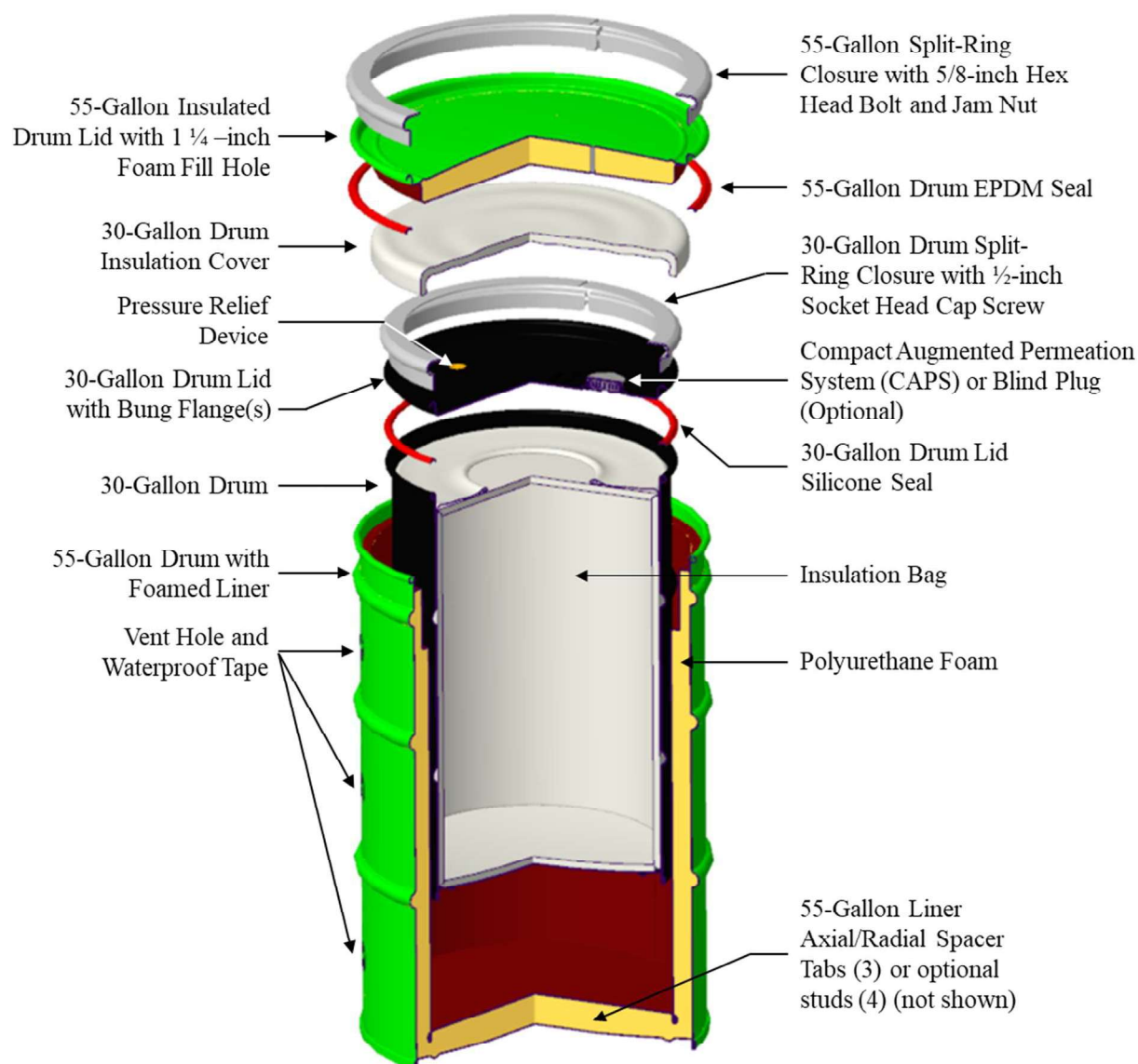


Figure 1 – 9979 Packaging Configuration

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(3) Drawings:

The 9979 packaging design is defined by the following drawings.

Drawing Number	Revision Number	Title
R-R5-G-00006	4	9979 Type AF Package Tree (U)
R-R1-G-00026	8	9979 Type AF 30-Gallon Container Split Ring Assembly (U)
R-R1-G-00027	7	9979 Type AF 55-Gallon Drum Lid Split Ring Assembly (U)
R-R1-G-00028	9	9979 Type AF 30-Gallon Drum Assembly (U)
R-R1-G-00029	6	9979 Type AF 55-Gallon Drum Assembly (U)
R-R1-G-00030	5	9979 Type AF Packaging Assembly (U)
R-R2-G-00057	13	9979 Type AF 55-Gallon Drum Sub-Assembly and Weldment (U)
R-R2-G-00058	7	9979 Type AF 30-Gallon Drum (U)
R-R2-G-00059	8	9979 Type AF 55-Gallon Drum Lid Sub-Assembly and Weldment (U)
R-R2-G-00060	8	9979 Type AF 30-Gallon Drum Lid with Dual Bung Closures (U)
R-R4-G-00062	6	9979 Type AF 30-Gallon Drum Lid Gasket (U)
R-R4-G-00064	5	9979 Type AF Insulation Bag (U)
R-R4-G-00065	5	9979 Type AF Insulation Cover Assembly for 30-Gallon Drum (U)
R-R4-G-00066	2	9979 Type AF Package Identification Plate (U)

Note: U is unclassified

Special Form capsule designs authorized for transport in the package are defined by the following drawings or certificate.

Drawing Number	Revision Number	Title
157Y701711-900	B	Vogan Assembly with Tungsten
157Y701720-000	A	Plutonium Oxide Pod (P.O.P.) Assembly
CZ/1009/S-96	2	Am1.N02 Special Form Radioactive Material

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(b) Contents

(1) Type and Form of Radioactive Material:

Contents (payload) include all radioactive (fissile and non-fissile) and non-radioactive materials authorized in this certificate may be loaded in the 30-gallon containment drum. The contents are grouped broadly into either non-combustible and combustible payload categories according to their material form, as shown with their general descriptions in Table 1.

Low enriched uranium (LEU) is limited to two forms. The first form, under Table 1, Material Form "Sources and Standards" is a 10 cm cube assembly of steel encapsulated metal plates, or up to four individual plates, approximately 10 cm square by 2 cm thick each, per package. The cube assembly or plates may be packed in a 3-quart stainless steel convenience can. The second form, under Table 1, Material Form "Solid Compounds" is LEU metal waste.

Tri-Structural Isotropic (TRISO) fuel and process materials are limited to the physical and chemical forms of Highly Enriched Uranium and Thorium defined in Tables 2-1 through 2-6 of N-NCS-G-00174, Revision 1 (SARP Section 6.10, Reference 3). Fissile materials must be normal form solids in two categories - fixed and non-fixed. The fixed category consists of fissile materials that are essentially indispersible, that is, the fissile material is not easily separated from the carbon/graphite due to chemical or physical bonding. The non-fixed category consists of fissile materials that may be easily separated from the carbon/graphite. If unknown or a mixture of fixed and non-fixed, the category is assumed to be non-fixed for determining the fissile mass limit per package. TRISO fuel and process materials may be placed in convenience containers such as steel cans (carbon or stainless) with slip top or press fit lids; miscellaneous small glass vials, less than 1/2 pint; or poly-bottles with screw top lids. Convenience containers may be placed in plastic bags, which are taped closed for contamination control.

Special Form Pu metal or oxide in Vogan or Plutonium Oxide Pods (POP) Assemblies, Special Form Am-241 with Beryllium (Am-Be) in the Am1.N02 Assemblies, and Normal Form Cesium-137 & Thorium-232 solid samples. The Pu may contain up to 4.5% Gallium as an alloying metal. The Am-241 is Am₂O₃ mixed with a maximum of 20 mg of Beryllium.

Table 1 - Content Categorization Examples

Payload Categories	Material Form	General Description
COMBUSTIBLE	Filters	Roughing, sock, demister, HEPA, and other uranium filters
	Rubber, Plastics, Cellulose Products	Clothing, gaskets, bottles, filter frames, paper, wood, mop heads, Macrobags®, etc.
	Floor Sweepings	Miscellaneous materials collected from cleaning activities
	Process Solids	Furnace residues. (pan filter cloth and scrapings, wipes/sponges, etc.)
NON-COMBUSTIBLE	Graphite/Carbon	Carbon and graphite scrap molds
	Slag and Liner	Residue that contains magnesium oxide, calcium fluoride, and/or lithium fluoride
	Ceramics/Glass	Crucibles, glassware and borosilicate rings
	Borax Pellets	From analytical x-ray operations.
	Reduction Sand	Granular magnesium oxide (MgO)
	Asbestos/Firebrick	Insulation, floor tiles, etc.
	Solid Compounds and Metal	Uranyl Fluoride, Uranium oxide, ammonium diuranate and residues and solid mixtures; scraped unirradiated fuel rods and pellets [e.g., size-reduced light-water breeder reactor (LWBR) fuel rods]; TRISO fuel and process materials; LEU metal waste forms; and normal form Cesium & Thorium samples.
	Standards and Sources	Encapsulated calibration standards, LEU cube assembly or up to four individual plates per package; Special Form Vogan Assemblies, Plutonium Oxide Pods (POP) Assemblies, and Am1.N02 Assemblies.

Table Note 1 Non-radioactive contents include all secondary containers, wrapping, shoring, convenience cans, plastic bagging, polyurethane foam and other dunnage material.

Table Note 2 The Payload Category “Combustible”, may also include “Non-Combustible” Material Forms.

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(2) Maximum Quantity of Radioactive Material per Package:

The package contents including radioactive material, dunnage, packing, and thermal insulating bag (if used) shall not exceed to 90 kg.

Type A quantity of radioactive material, per package.

The radioactive material and payload mass limits for the 9979 package are defined in Tables 2, 3, 4, 5a, and 5b.

Table 2 defines the limits for Highly Enriched Uranium (HEU) including TRISO fuel and process materials in normal form. The mass limit for each radioisotope in Table 2 is based on the most restrictive of:

External radiation to meet 10 CFR 71.47(a) with a minimum of 15 grams of uranium metal or oxide,

A₂ mass (A₂/Specific Activity from 49 CFR 173.435),

U-235 fissile gram equivalent limit per package is based Non-Radioactive Material Mass Limits listed in the table (Limits from SARP, Section 6.10, Reference 4, N-NCS-A-00019 Rev 2, and SARP Rev 7, Supplement for Docket 26-04-9979, Rev 1, Section 6.10, Reference 5, N-NCS-A-00049, Rev 0),

Tables 3 and 4 define the limits for both forms of LEU (cubes/plates and metal waste).

Table 5a defines the limits for Pu and Am-241 in Special Form and Cesium-137 & Thorium-232 samples in Normal Form. One package may be used to ship eight Vogan or POP Assemblies, or combination of eight thereof, with ten Am1.N02 Assemblies, and Cs-137 and Th-232 samples in accordance with Table 5a.

Table 5b defines the limits for Pu in Special Form. One package may be used to ship a maximum of 52 Vogan or POP Assemblies, or combination thereof in accordance with Table 5b.

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Table 2 – Content Envelope Limits for HEU, TRISO Fuel and Process Materials

Radioactive Material Mass Limits (g)									
Radioisotope ⁽ⁱ⁾	Radiation ^(a)	Activity (A ₂) ^(b)	Criticality	Package Payload					
Am-241	5.94E-01	7.69E-03	N/A Not Fissile	9.00E+04					
Cm-243	1.04E-03	5.26E-04	N/A Not Fissile						
Co-60	7.44E-07	9.52E-03	N/A Not Fissile						
Cs-137	4.72E-05	1.87E-01	N/A Not Fissile						
Eu-155	4.46E-04	1.66E-01	N/A Not Fissile						
Np-237	2.87E+01	7.69E+01	N/A Not Fissile						
Pu-238	2.14E-01	1.58E-03	(c)						
Pu-239	7.12E+01	4.34E-01	(c)						
Pu-240	1.91E+01	1.19E-01	(c)						
Pu-241	6.50E-01	1.57E-02	(c)						
Sr-90	5.07E-04	5.88E-02	N/A Not Fissile						
Tc-99	1.87E+03	1.42E+03	N/A Not Fissile						
Th-228	2.22E-06	3.33E-05	N/A Not Fissile						
Th-229	6.00E-02	6.32E-02	N/A Not Fissile						
Th-230	1.57E+00	1.31E+00	N/A Not Fissile						
Th-232	9.68E+03	Unlimited	N/A Not Fissile						
U-232	8.75E-05	1.20E-03	N/A Not Fissile						
U-233	1.12E+02	1.66E+01	(c)						
U-234	9.03E+02	2.60E+01	N/A Not Fissile						
U-235	2.01E+04	Unlimited	(c)						
U-236	1.18E+05	2.50E+03	N/A Not Fissile						
U-238	1.52E+05	Unlimited	N/A Not Fissile						
Non-Radioactive Material Mass Limits (g)									
Material Type	Shipping Configuration								
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6			
Carbon (e.g., graphite) ^(d)	1.00E+03 ^(f)	9.00E+04	1.00E+03 ^(f)	9.00E+04	9.00E+04	1.00E+03 ^(f)			
Beryllium		1.00E+03		0	1.00E+03				
Hydrocarbons ^(e)	1.00E+03	9.00E+04	9.00E+04	1.00E+03	9.00E+04	9.00E+04			
Overall Content Mass Limits (g)									
Fissile Material [U-235 (eq)] ^(c)	3.50E+02	3.50E+02	3.00E+02	1.50E+02	1.20E+02	2.80E+02			
Package Payload	9.00E+04								
Special Shipping Requirements									
Fissile material and carbon must be bonded together	No ^(g)	<u>Yes</u> ^(h)	No ^(g)	No ^(g)	No ^(g)	No ^(g)			
MacroBag® Use Authorized	No	<u>Yes</u> ⁽ⁱ⁾	No	No	<u>Yes</u> ^(j)	<u>Yes</u> ^(j)			

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Notes for Table 2:

- a. The radiation shielding mass limits are conservative, calculated, predetermined limits that ensure the external radiation limit in 10 CFR 71.47(a) for non-exclusive use shipment is not exceeded. Each limit is based on the individual radioisotope embedded in 15 grams of uranium isotopes (i.e., U-233, U-234, U-235, U-236, or U-238) for shielding purposes, either metal or oxide. The sum-of-the-fractions methodology can be used to calculate the predetermined limit for mixtures of radioisotopes.

$$\sum \frac{M_i}{L_i} \leq 1$$

Where: M_i is the actual mass of radioisotope "i"
 L_i is the radioisotopic mass limit from CoC Table 2, "Radiation" column.

The radiation shielding mass limits may be exceeded **ONLY** if:

- The activity, criticality, and payload mass limits are met, **AND**
- The package meets 10 CFR 71.47(a), for non-exclusive use shipment, **OR**
- The package and shipment meet 10 CFR 71.47(b), (c), and (d), for exclusive use shipment.

- b. The package is limited to a Type A quantity. For a mixture of Table 2 radioisotopes, the Sum-of-the-Fractions methodology shall be used to ensure the mixture does not exceed one:

$$\sum \frac{M_i}{R_i} \leq 1$$

Where: M_i is the actual mass of radioisotope "i"
 R_i is the radioisotopic mass limit (A_2) from CoC Table 2, "Activity (A_2)" column.

- c. Criticality mass limits for fissile material are determined using the following equations and the specified U-235 (eq) limit for the various shipping configuration options:
- U-235(eq) = U-235 + [4.1 × U-233] + [4.1 × Pu] and
 - U-233 + Pu ≤ 5 wt.% total fissile mass
- d. This limit applies to elemental forms of carbon (e.g., carbon allotropes such as graphite). This limit does not apply to the carbon content in compounds (e.g., carbides, organic compounds, and hydrocarbons), metal alloys (e.g., steel), or other similar materials).
- e. This limit applies to materials predominantly containing hydrogen and carbon (that is, molecular formula involving CxHy), such as plastics, acrylates, polyethylene, oil, and MacroBag®.
- f. This limit applies to the sum of beryllium and elemental forms of carbon in the payload.
- g. Fissile material may be bonded with carbon together in this configuration option. An example of unbonded fissile material and carbon is uranium metal shipped with accumulable loose carbon fines.
- h. Fissile material and carbon must be bonded together chemically or by a strong physical bond in this configuration option for nuclear criticality safety under Normal Conditions of Transport (NCT) or Hypothetical Accident Conditions (HAC) and form an optimally reactive configuration (e.g., sphere of uranium surrounded by a shell of carbon). Examples include carbon impurities within uranium metal, fissile materials that are chemically bonded with carbon (e.g., ThUC₂, UCO, UC₂), fissile materials that are physically bonded to carbon in fuels or process materials (e.g., TRISO fuel and process materials and LWBR fuel rods), and fissile material fixed to graphite molds. Contents that are indeterminate or contain both bonded and unbonded carbon and fissile material must be considered unbonded.
- i. Daughter products of the radioisotopes in Table 2 are not listed but have been evaluated. Unlisted radioisotopes that are not daughter products of listed radioisotopes may be present in quantities less than the 49 CFR 173.436 exempt material activity limits.
- j. A PacTec, Inc. MacroBag® may be used as dunnage within the 30-gallon drum.

Table 3 – Content Envelope Limits for LEU Cube or Plates

Feature	Material	Weight Fraction	Mass (kg)
Radioisotopes	U-235	0.199	3.819
	U-238	0.801	15.373
Total Mass	Radioactive Material	-	19.192
	Package Payload	-	90

Low Enriched Uranium less than or equal to 19.9 weight percent U-235 and 80.1 weight percent U-238. Limits are based on U-235 enrichment: weight fraction and mass of U-238 may be higher when U-235 weight fraction and mass is lower than shown in the Table.

Table 4 – Content Envelope Limits for LEU Metal Waste

Feature	Material	Mass (g)
Radioisotopes	Tc-99	4.00E+00
	Th-228	6.72E-09
	Th-230	3.84E-03
	Th-232	1.76E+00
	U-232	6.13E-08
	U-234	2.20E+01
	U-235 ^a	2.00E+03
	U-236	1.72E+02
	U-238 ^b	9.0E+04
	Np-237	6.15E-02
	Pu-238	1.22E-06
	Pu-239	5.63E-03
	Pu-241	3.41E-05
	Am-241	9.97E-07
Total Mass	Radioactive Material	9.0E+04
	Package Payload	9.0E+04

a Low Enriched Uranium (LEU) Content Envelope $\leq$ 1.25 weight % U-235

b Includes contributions from daughter products, e.g., Th-234, etc.

Table 5a – Content Envelope Limits for Vogan/POP, Am1.N02, Cs-137, & Th-232

Radioactive Materials				
Form	Description	Material	Mass/Assembly (g)	Mass/package (g)
Special	Vogan Assembly ^a	Pu-239	16.3625	1.309E+02
		Pu-240	1.05	8.400E+00
		Pu-241	0.0875	7.000E-01
	POP Assembly ^a	Pu-239	16.83	1.3464E+02
		Pu-240	1.08	8.640E+00
		Pu-241	0.09	7.200E-01
Normal	Am1.N02 ^b	Am-241	1.60E-02 ^c	1.600E-01
	Cesium	Cs-137	-	1.300E-06
	Thorium	Th-232	-	3.000E+02
Radioactive Material ^d				4.4416E+02
Package Payload				9.0E+04
Total Mass per Special Form Assembly (For Tables 5a and 5b)				
Assembly		Mass (g)		
Vogan		7.95E+01		
POP		5.34E+01		
Am1.N02		6.84E+00		

- a Up to eight Vogan or POP Assemblies, or a mixture of eight per package. Pu may include up to 4.5% gallium as an alloying metal.
- b Up to ten Am1.N02 Assemblies per package.
- c Am₂O₃ mixed with a maximum of 20 mg of Beryllium.
- d Total radioactive material per package is based on eight POP Assemblies, ten Am1.N02 Assemblies, and max mass for Cs-137 and Th-232.

Table 5b. – Content Envelope Limits for Vogan/POP

Radioactive Materials				
Form	Description	Material	Mass/Assembly (g)	Mass/package (g)
Special	Vogan Assembly ^a	Pu-239	16.3625	8.509E+02
		Pu-240	1.05	5.460E+01
		Pu-241	0.0875	4.550E+00
	POP Assembly ^a	Pu-239	16.83	8.752E+02
		Pu-240	1.08	5.616E+01
		Pu-241	0.09	4.680E+00
Radioactive Material ^b				9.36E+02
Package Payload				9.0E+04

- a Up to 52 Vogan or POP Assemblies, or a mixture of 52 per package. Pu may include up to 4.5% gallium as an alloying metal.
- b Total radioactive material per package is based on 52 POP Assemblies.

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(3) Maximum Decay Heat:

The maximum decay heat for the package thermal design is 3.5 watts.

The maximum calculated decay heat for Content:

Table 2 is 1.63E-01 watts

Table 3 is 3.65E-04 watts

Table 4 is 5.20E-03 watts, and

Tables 5a is 3.42E-01 watts and 5b is 2.11 watts.

(c) Criticality Safety Index

The Criticality Safety Index (CSI):

CSI = 1.0 for Table 2 contents

CSI = 0.1 for Table 3 and Tables 5a and 5b contents

CSI = 0.0 for Table 4 contents

(d) Conditions

- (1) Pyrophoric materials, cryogenic liquids, compressed gasses, free liquids (means liquids which readily separate from the solid portion of a waste/contents under ambient temperature and pressure), and chemically reactive substances are prohibited as content in the 9979 package.
- (2) Transport of fissile material by air in the 9979 package is not authorized.
- (3) In addition to the requirements of Subparts G and H of 10 CFR Part 71:
 - (a) The package must be prepared for shipment and operated in accordance with the Operating Procedures in Chapter 7 of the SARP, as supplemented by 5.(e) of this certificate,
 - (b) Each packaging must meet the Acceptance Tests and Maintenance Program of Chapter 8 of the SARP, as supplemented by 5.(e) of this certificate, and
 - (c) Each entity must comply with the Quality Assurance requirements of Chapter 9 of the SARP, as supplemented by 5.(e) of this certificate.
- (4) All contents shall be packaged in the 30-gallon containment drum. Contents defined in Table 1 as "Combustible", including combustible non-radioactive dunnage, must be packed in the Thermal Insulation Bag (Drawing R-R4-G-00064) by the procedure described in SARP Section 1.2.4. This bag is optional dunnage for non-combustible contents.
- (5) The following are requirements for content packing configurations:
 - Sharp edges and corners must be padded.
 - Liquid waste and waste containing free liquids must be processed to a solid form or be collected on sorbent material sufficient to retain twice the volume of the liquid. Sorbents must be non-biodegradable in accordance with 40 CFR 265.314(e).
 - Handling containers must be packed with closures upright.
- (6) CAPS device must meet the technical requirements of 9979 *TYPE A FISSILE PACKAGING COMPACT AUGMENTED PERMEATION SYSTEM (CAPS)*, Technical Requirements Datasheet, M-DS-G-00124, Revision 0, June 4, 2025.
- (7) Fuel pellets from scrap unirradiated LWBR fuel rods must be either be confined within sized-reduced fuel rods [e.g., the cut end(s) of the fuel rod shall be covered with metal tape] or

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placed in a stainless steel convenience container, prior to loading in the 30-gallon containment drum. Loose fuel pellets are prohibited in the containment drum.

- (8) The calculated external radiation for the package with Table 5a contents exceeds the limits in § 71.47(a), so the package with Table 5a contents must be transported by exclusive use shipment only, in accordance with § 71.47(b), if the measured external radiation level before each shipment exceeds § 71.47(a).
- (9) Packaging serial numbers 11-100 through 11-599 must be modified in accordance with Appendix 8.2 of the SARP, prior to authorized use under this certificate.
- (10) Revision 20 of this certificate may be used until May 31, 2027.
- (11) This certificate authorizes use of two hundred (200) silicone gaskets from Batch No.0057022890, Lot # S0059225 produced by Parker Hannifin Corporation in accordance with the Drawing R-R4-G-00062, Rev. 3.
- (12) Only DOE or persons working under contract to DOE shall consign the package for domestic transport.
- (13) NRC or Agreement State licensees shall not consign a DOE certified package for domestic transport but can transfer the material on-site to DOE or persons working under contract to DOE, for consignment of the package.
- (14) Packaging configured without CAPS (Drawing R-R1-G-00028, Rev. 8, Items 8 and 9) and the 55 Gallon Drum diffusion hole (Drawing R-R2-G-00057, Rev. 12, Item 13) may continue to be used subject to the calculated package shipping window restrictions in Section 7.1.3 of the SARP Revision 7 Supplement for Docket 26-04-9979 for Tables 2 through 4 contents. The shipping window may be reset in accordance with Section 7.4.3 or Section 7.4.4 of the SARP supplement. There are no shipping restriction windows for Table 5a and 5b contents.
- (15) If Macrobag® dunnage is used without the CAPS device in the 30-gallon drum lid and diffusion hole in the 55-gallon drum, the MacroBag® shall also be purged/sampled in accordance with Condition 14 to reset the shipping window.

(e) Supplements

- (1) Safety Analysis Report for Packaging Model 9979 Type AF Shipping Package, S-SARP-G-00006, Revision 7 (Supplement for Docket 21-03-9979), July 2023.
- (2) Safety Analysis Report for Packaging Model 9979 Type AF Shipping Package, S-SARP-G-00006, Revision 7 (Supplement for Docket 23-11-9979, Rev 1), January 10, 2024.
- (3) Safety Analysis Report for Packaging Model 9979 Type AF Shipping Package, S-SARP-G-00006, Revision 7 (Supplement for Docket 21-16-9979, Rev 1), January 2025.
- (4) *9979 TYPE A FISSION PACKAGING COMPACT AUGMENTED PERMEATION SYSTEM (CAPS)*, Technical Requirements Datasheet, M-DS-G-00124, Revision 0, June 4, 2025.
- (5) *DOE-SR / SRNL Request for docket and review of 9979 CoC Amendment*, email Luke Sobus to Christopher Cable, February 27, 2025.
- (6) *DOE-SR 9979 CoC Renewal Request*, email from Luke Sobus to Christopher Cable, July 1, 2025.
- (7) Safety Analysis Report for Packaging Model 9979 Type AF Shipping Package, S-SARP-G-00006, Revision 7 (Supplement for Docket 26-04-9979, Rev 1), April 2026