COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE B(U)F FISSION
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/0693/B(U)F-96, REVISION 1

REVALIDATION OF FRENCH COMPETENT AUTHORITY
CERTIFICATE F/379/B(U)F-96

This certifies that the radioactive material package design described is hereby approved for use within the United States for import and export shipments only. Shipments must be made in accordance with the applicable regulations of the International Atomic Energy Agency¹ and the United States of America².


2. Package Description and Authorized Radioactive Contents - as described in France Certificate of Competent Authority F/379/B(U)F-96, Revision Ct (attached). Contents are limited to Content 26 as described in Appendix 26 to the French Certificate.

3. Criticality - The minimum criticality safety index is 0. There is no restriction on the number of packages per conveyance.

4. General Conditions -
   a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation. The user shall prepare the package for shipment in accordance with the documentation and applicable regulations.
   c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

¹ "Regulations for the Safe Transport of Radioactive Material, 1996 Edition (Revised), No. TS-R-1 (ST-1, Revised)," published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

² Title 49, Code of Federal Regulations, Parts 100-199, United States of America.
d. This certificate provides no relief from the limitations for transportation of plutonium by air in the United States as cited in the regulations of the U.S. Nuclear Regulatory Commission 10 CFR 71.88.

e. Records of Quality Assurance activities required by Paragraph 310 of the IAEA regulations¹ shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors in the United States exporting shipments under this certificate shall satisfy the applicable requirements of Subpart H of 10 CFR 71.

5. Special Conditions -

a. This package design approval is limited to packagings with serial number TN-106 No. 01 or TN-106 No. 02.

b. The maximum allowable combined uranium and plutonium content mass is 42 grams.

c. The maximum activity of the contents is 5 TBq.

d. The maximum decay heat of the contents is 40 W/m.

e. Only dry loading and unloading of contents are authorized.

f. Prior to loading, the package must be demonstrated to meet the "leaktight" test criterion of $10^{-7}$ ref cm$^3$/sec, per ANSI N14.5. Subsequent periodic and maintenance leakage tests must also meet the "leaktight" leakage test criteria of $10^{-7}$ ref cm$^3$/sec, per ANSI N14.5. These leakage tests shall not be based on the pressure rise method. After loading, the package must be demonstrated to meet the pre-shipment leakage test criterion of $10^{-3}$ ref cm$^3$/sec, per ANSI N14.5.

g. All seals shall be replaced at an interval not to exceed one year.

h. Transport by air is not authorized.

i. Packages must be transported as exclusive use.

j. Confined or covered transport is not authorized unless the thermal conditions of the configuration have been reviewed and approved by the French Competent Authority. Such approval must be provided to the U.S. Competent Authority at least 7 days prior to the beginning of transport.
CERTIFICATE USA/0693/B(U)F-96, REVISION 1

6. Marking and Labeling - The package shall bear the marking USA/0693/B(U)F-96 in addition to other required markings and labeling.

7. Expiration Date - This certificate expires on December 31, 2014.

This certificate is issued in accordance with paragraph 814 of the IAEA Regulations and Section 173.472 and 173.473 of Title 49 of the Code of Federal Regulations, in response to the June 14, 2013 petition by Areva - TN Inc, Columbia, MD, and in consideration of other information on file in this Office.

Certified By:

[Signature]

Dr. Magdy El-Sibaie
Associate Administrator for Hazardous Materials Safety

Jun 12 2014
(DATE)

Revision 1 - Issued to revalidate French Certificate of Approval No. F/379/B(U)F-96, Revision Ct for limited contents and with additional conditions.
The Competent Authority in France,


Certifies that the package design consisting in the TN 106 packaging, described in appendix 0 index t and:

- containing uranium oxide as described in appendix 1 index t;
- containing plutonium oxide or uranium and plutonium oxide as described in appendix 2 index t;
- containing uranium and plutonium compounds, or experimental materials, as described in appendix 3 index t;
- containing uranium and plutonium compounds, possibly doped with americium, curium and/or neptunium, as described in appendix 8 index t;
- containing uranium oxide and eventually with thorium and graphite, as described in appendix 9 index t;
- containing a mixture of uranium oxide and/or plutonium oxide and/or uranium and plutonium oxide, as described in appendix 11 index t;
- containing a mixture of uranium and plutonium as described in appendix 12 index t;
- containing uranium oxide and eventually thorine and polymer resin, as described in appendix 22 index t;
- containing uranium, plutonium, americium, neptunium and/or technetium under metallic or nitride form, as described in appendix 26 index t;

complies with the package design type B(U) loaded with fissile materials;

- emptied, whether or not contaminated, with or without internal arrangements, complies with package design type B(U).

With the stipulations of the regulations, agreements and recommendations listed below:

- IAEA regulations on the transport of radioactive materials, Safety Standards Series, NTS-R-1, 2009 edition;
- European Agreement relating to the international carriage of dangerous goods by road (ADR);
- regulations concerning the international transport of dangerous goods by rail (RID);
- European Agreement concerning the international carriage of dangerous goods on inland waterways (ADN);
- International Maritime Dangerous Goods Code (IMDG Code from the International Marine Organization);
- French Decree of May 29, 2009 (amended) relating the carriage of dangerous goods by land (TMD Decree);
- French Decree of November 23, 1987 (amended) relating to the safety of shipping, division 411 associated regulations (RSN Decree).

This certificate does not absolve the dispatcher from conforming to the prescriptions established by the authorities of the countries through or into which the package will be transported.
This certificate is valid until: June 7, 2017

Registration number: CODEP-DTS-2012-028226

Paris, June 7, 2012

For the president of the ASN, and by delegation.
The assistant general director

J.L. LACHAUME
### SUMMARY OF CERTIFICATES ISSUED

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<td>B(U)F-96</td>
<td>Bn  n j j j - j</td>
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<td>B(U)F-96</td>
<td>Bo  o - - - - - -</td>
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<td>27/01/10</td>
<td>07/05/12</td>
<td>Extension to content 25</td>
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<td>B(U)F-96</td>
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<tr>
<td>17/05/10</td>
<td>07/05/12</td>
<td>Extension to contents 23, 24</td>
<td>ASN</td>
<td>B(U)F-96</td>
<td>Bq  - q - - - - -</td>
</tr>
<tr>
<td>25/07/11</td>
<td>07/05/12</td>
<td>Extension to content 26</td>
<td>ASN</td>
<td>B(U)F-96</td>
<td>Br  r - - - - - -</td>
</tr>
<tr>
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<td>07/06/17</td>
<td>Renewal</td>
<td>ASN</td>
<td>B(U)F-96</td>
<td>Bs  s - - - - - -</td>
</tr>
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| corps | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Bj    | - | - | i | j | - | j | j | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bk    | k | - | - | k | - | k | k | k | k | k | k | k | - | - | - | - | - | - | - | - | - | - |
| Bl    | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bm    | - | - | - | - | - | - | - | - | - | - | - | - | m | - | - | - | - | - | - | - | - | - |
| Bn    | - | - | j | j | - | j | j | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bo    | k | - | - | k | - | k | k | k | k | k | k | k | k | - | - | - | - | - | - | - | - | - |
| Bp    | - | - | - | - | - | - | - | - | - | - | - | - | - | p | - | - | - | - | - | - | - | - |
| Bq    | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | q |
| Br    | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | r | - | - | - | - | - | - |
| Bs    | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | s |
| Ct    | - | - | t | t | t | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | t |
APPENDIX 0
PACKAGING TN 106

1. PACKAGING DEFINITION

The packaging is designed, manufactured, inspected, tested, maintained and used in compliance with TN International Safety Analysis Report ref. DOS-06-00032898-000 Rev. 12.

The packaging, of a generally cylindrical form, is presented in figure 0.1. The packaging's body delimits a cylindrical cavity whose length is between 2200 and 2400 mm.

The design plan for the packaging is plan TRANSNUCLEAIRE 5573-04 ind. F.

The overall external dimensions of the packaging are:
- total length: .................................. Ul + 1.424 m (therefore between 3.624 and 3.824 m);
- length without covers: ............... Ul + 0.778 m (therefore between 2.978 et 3.178 m);
- diameter with covers:................. 1.458 m;
- diameter without covers: ......... 0.958 m, (at the level of the trunnions);
- exterior diameter of the body:.. 0.820 m.

with the Ul: Useful cavity length

The dimensions of the internal cavity are:
- Useful length (Ul):...................... variable from 2.2 to 2.4 m;
- useful diameter:........................... 0.203 m.

The maximal mass (in kg) for the loaded package (with the covers) in function of the useful Ul length (in meters) is:
M= 3400 x Ul + 4140 (therefore between 11620 and 12300 kg).

1.1. Body and closing mechanism

The packaging is formed of a body, of a top end and a bottom end, welded, and two shock-absorbing covers.

The body is successively made up of:
- an internal stainless steel sheet envelope;
- a primary biological shield (gamma shielding) made of lead;
- a secondary biological shielding (neutron shielding) in Type F borated resin;
- an external stainless steel sheet envelope including a bed plate as well as handling and stowage devices.

The top end is made of a stainless steel flange welded to the shell to which the following is fitted:
- a revolving lead plug which provides access to the cavity;
- two screwed metal clamps that hold the revolving plug in place;
- a revolving plug control orifice with a protective plug
- a front lid for revolving plug maintenance;
- a front closure plate to load contents;
- a vent orifice (orifice A)

The back end consists in a stainless steel flange welded to the shell to which the following is fitted:
- a stainless steel pushing device, equipped with a shielding disk;
- a back closure plate providing access to the pushing device;
- a fill and drain orifice.
The leak tightness of the six openings (front lid, front closure plate, orifices A and B, revolving plug control, back closure plate) is ensured by double EPDM O ring gaskets recessed in grooves. These systems are used to check leak tightness between the gaskets.

1.2. Shock-absorbing systems
Two removable covers, made of wood, covered in a steel envelope, are fixed by 6 screws, in such a way as to absorb shocks to the packaging in the event of a fall.

1.3. Handling and tie-stowage devices
They are made up of:
− two pairs of welded trunnions, one at the bottom, one at the top, which are used for stowage during transport, for tilting on the frame, and possibly for handling;
− two lugs, welded on the upper generating line of the body are used for handling and possibly tilting on the chassis;
− a plate on which the package can rest when it has or does not have its covers attached;
− the external stainless steel sheet envelope.

1.4. Internal arrangements
The content may be placed into two types of internal arrangements:
− internal arrangements which guarantee a criticality safety function;
− internal arrangements that facilitate loading and unloading and/or avoiding contamination of the cavity.

1.4.1 Internal arrangements for criticality purposes
This internal arrangement, presented in figure 0.3, must be in stainless steel and bronze, with a cylindrical shape and variable useful diameter. This internal arrangement is also composed of bronze pads. Loading the contents into the internal arrangements must be carried out under dry conditions. No water is permitted inside this arrangement

In function of the content's mass, this arrangement must respect the following minimal and maximal thickness for the steel:

<table>
<thead>
<tr>
<th>Internal diameter of the arrangement 120mm</th>
<th>Minimal thickness (mm)</th>
<th>Maximal thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content's mass kg/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤45</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>≤61</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>≤76</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>≤91</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal diameter of the arrangement 60 mm</th>
<th>Minimal thickness (mm)</th>
<th>Maximal thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content's mass kg/m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>≤15</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>≤21</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>≤22</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Moreover, the total mass of the content must not exceed 120 kg.

The internal arrangements are designed, manufactured, inspected and tested in compliance with:
− TRANSNUCLEAIRE plan 5573-75 index E.

1.4.2 Internal arrangements that facilitate loading and unloading and/or avoiding contamination of the cavity.

The only requirement concerning these internal arrangements is that they must be in stainless steel and/or in aluminium and/or bronze.
These internal arrangements may take the form of an assembly of leak proof capsules per rod or pin, with a leak tight or non-leak tight packaging canister, a holding rack, a sheath, or a loading / unloading shovel for the fuel element assembly.

By capsule we mean the equivalent of leak tight fuel cladding which may contain pieces of rods, pins or pellets.

By packaging canister we mean any metal container whether or not cylindrical, with a shape that is compatible with the TN 106 packaging cavity and with a variable capacity that may include several types of fuel or radioactive materials as described in the appendices.

In the case of pins or rods, the internal arrangements may take the form of maintenance jackets.

These internal arrangements can be fitted to each other and can be added to the canisters presented in paragraph 1.4.1

Examples of loading / unloading shovels, the holding rack for 6 fuel rods, the leak tight capsules, the packaging canister and the sheath are presented in figures 0.4 to 0.8.

1.5. Safety functions

The main safety functions and the main elements relevant for safety are:

- **The containment** ensured by the containment shell of the packaging which is made up of the front lid with its internal gasket, the front closure plate and its internal gasket, the orifice A closure plate and its internal gasket, the orifice B closure plate and its internal gasket, the revolving plug closure plate and its internal gasket, the back closure plate and its internal gasket, the font and rear flanges and the welds between the flanges and the internal shell;

- **The radiological protection** is guaranteed in the radial direction by cylindrical shell in steel, lead and resin, in the top axial direction through the revolving plug, the top lid and the top cover, in the bottom axial direction through the tappet, the back lid and the back shock-absorbing cover;

- **The criticality safety** is ensured by the isolation system which is described in chapter 5A (ref. DOS-06-00032898-500 Rev. 5) of the Safety Analysis Report;

- **The thermal dissipation** is guaranteed in the radial direction by the steel, lead and resin cylindrical shells;

- **Protection against shocks** is provided by the two lids and external cylindrical shell of the packaging;

- **Protection against fires** is provided by the steel and resin cylindrical shells and by the front and back shock-absorbing covers.

2. MEASURES THAT THE SHIPPER MUST TAKE BEFORE SHIPPING THE PACKAGE

The packaging must be used in compliance with the instructions set out in chapter 6A (ref. DOS-06-00032898-600 Rev. 8) of the Safety Analysis Report.

The use of drying's procedure of the cavity different from the method by riser of pressure, presented in chapter 6A (ref. DOS-06-00032898-600 Rev. 8) of the Safety Analysis Report, will have to be validated preliminarily by the Competent authority.

3. MAINTENANCE PROGRAM

Maintenance for the packaging is described in chapter 7A (ref. DOS-06-00032898-700 Rev. 1) of the Safety Analysis Report.
4. **NOTIFICATION AND RECORDING OF SERIAL NUMBERS**

The competent authorities must be informed of any packaging that is taken out of service or transferred to another owner. An owner who disposes of a packaging will communicate the name of the new owner.

5. **QUALITY INSURANCE**

The quality insurance principles to be applied in the design, manufacture, inspection, testing, maintenance and use of packaging should be in compliance with those described in chapter 8A (ref. DOS-06-00032898-800 Rev. 0) of the Safety Analysis Report.

6. **ADDITIONAL REGULATIONS IN CASES OF CONFINED TRANSPORT**

Transport done in a confined way is unauthorized on the French territory, except after authorization of the French Competent Authority.

When package are transported using a method of confined transport (covered vehicle, transport crates, canopy…) the heat dissipation is susceptible to be changed.

The thermal power must then respect the values presented in the content description.
FIGURE 0.1
DIAGRAM OF THE TN106 PACKAGING

Front cover

Lug

Back cover

Revolving plug

Lay down bed plate

Trunnion

Useful length of the cavity (L0)
FIGURE 0.2
DETAILS OF THE PACKAGING'S ORIFICES

- Front lid
- Front closure plate
- Back closure plate
- Orifice A and B closure plates
- Revolving plug closure plate
FIGURE 0.3
DIAGRAM OF A SHEATH PROVIDED FOR CRITICALITY NEEDS
FIGURE 0.4
EXAMPLE OF A LOADING / UNLOADING SHOVEL
FIGURE 0.5
EXAMPLE OF A RACK
FOR 6 FUEL RODS
FIGURE 0.6
EXAMPLE OF A LEAKTIGHT CAPSULE

Longueur maximale = Lu$^{(1)}$ - 30

$^{(1)}$ : Ul: useful length of the packaging cavity (in mm)
FIGURE 0.7
EXAMPLE OF A PACKAGING CANISTER

The closing mechanisms and the base of the canister in this diagram are presented for information purposes only. Other systems may be envisaged in order to facilitate operations.
FIGURE 0.8
EXAMPLE OF A SHEATH

Longueur maximale = $L_u^{(1)} - 30$

$\phi$ maximal
200 mm

$^{(1)}$: $L_u$: longueur utile de la cavité de l'emballage (en mm)
APPENDIX 26

CONTENT N°26

URANIUM, PLUTONIUM, AMERICIUM, NEPTUNIUM AND/OR TECHNETIUM UNDER METALLIC OR NITRIDE FORM

The Safety Analysis Report that justifies this content is referenced DOS-06-00032898-000 Rev. 12.

1. DEFINITION OF THE AUTHORIZED CONTENT

The authorized materials are described in chapter 0A (ref. DOS-06-00032898-005 Rev. 8) of the Safety Analysis Report and recalled below. The content n°26 allowed is type 1, 2, 3, 4 or 5.

1.1. General description

Materials: Fuel elements containing uranium, plutonium, americium, neptunium and/or technetium under metallic or nitride form, alone or in inert matrix (Zr as example) and all other inert materials.

The following materials are excluded:
- those whose hydrogen concentration is higher than that of water.
- those which can be decomposed by radiation.
- those which can be decomposed by thermal power.
- those which present subsidiary risks and do not respect the criteria of paragraph 1.2.
- those which contain graphite and beryllium.

Form: Pins, rods.

Conditioning: Any (possible presence of envelope(s), pressurized or not, surrounding the material). Presence of at least one metallic welded or screwed closed conditioning.

Pressurization: an envelope is pressurized when the pressure of the gas in this envelope is higher than 0.2 bar at 20 °C.

Irradiation: Non irradiated or irradiated in Fast Neutrons Reactors.

1.2. Loading conditions

The maximal mass for the content (internal arrangements included) must not exceed 254 kg/m.

The void volume in the cavity must be higher than or equal to 37.4 litres.

For irradiated elements, the absence of radiolysis risk is ensured by the cladding entirety and their drying.

The content may contain sodium traces (a maximum of 50 grams in the cavity). In this case, the package cavity must be filled with a neutral gas (nitrogen, argon, etc except helium which is excluded) and if the material is put in one or several internal arrangements, the latter must not be leak tight or must be filled in the same way than the cavity. Moreover, if the package unloading before the transport is done under water, the cavity must be dried before loading.
1.3. Content characteristics

The elements must verify the following characteristics given before irradiation:

<table>
<thead>
<tr>
<th>Type</th>
<th>Nominal composition (mass %)</th>
<th>Maximal enrichment (mass %)</th>
<th>Pu_{total} content (mass %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tc</td>
<td>Am</td>
<td>Np</td>
</tr>
<tr>
<td>Type 1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Type 2</td>
<td>-</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Type 3</td>
<td>-</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Type 4</td>
<td>-</td>
<td>100 %</td>
<td>100 %</td>
</tr>
<tr>
<td>Type 5</td>
<td>100 % ^{99}Tc</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* HV: Heavy Metal (U+Pu+Am+Np); a variation of +/-2 around these values is acceptable for the transport.

For irradiated elements:
- The burn up must be lower than or equal to:
  - type 1 element: 9.3 at%.
  - type 2 element: 17.4 at%.
  - type 3 element: 1.7 at%.
  - type 4 element: 4.5 at%.
  - 28.05 at% for technetium;
- the cooling time must be higher than 1 year.

The total mass of heavy metal per envelope before irradiation must be lower than or equal to 9.1 grams of (Am + Pu + U + Np + Tc) per cavity meter.

The maximal number of welded or gasket-equipped envelopes is 5.

The quantity of filling gas for one envelope must be lower than or equal to 10.13 bar.cm³ at 20°C.
1.4. Maximal quantity of fissile materials

The total (U+Pu) maximal mass per loading is 42 g. The americium maximal mass before irradiation is 6.2 g. The neptunium maximal mass before irradiation is 2.1 g.

The values presented in the following table must be verified for the fuel element considered before irradiation:

<table>
<thead>
<tr>
<th>Fissile material</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical form</td>
<td>(U, Pu) *</td>
</tr>
<tr>
<td>$^{235}\text{U} / \text{U}_{\text{total}}$ (mass %)</td>
<td>$\leq 10$</td>
</tr>
<tr>
<td>Maximal Pu$<em>{\text{total}}$ content mass (%) : Pu$</em>{\text{total}}$ / (U + Pu)$_{\text{total}}$</td>
<td>$\leq 100$</td>
</tr>
<tr>
<td>Pu isotopic composition</td>
<td>Any **</td>
</tr>
</tbody>
</table>

* See previous paragraphs: presence of americium, neptunium and/or technetium under metallic or nitride form

** Any irradiated material from fertile covers of breeder reactors has to be excluded.

1.5. Maximal thermal power released by the content

The total content linear thermal power and the linear thermal power per welded or gasket-equipped envelope* must verify the values given in the following table as a function of the welded or gasket-equipped envelope diameter:

<table>
<thead>
<tr>
<th>Element diameter</th>
<th>Linear thermal power in the cavity (W/m)</th>
<th>Linear thermal power per element (W/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\geq 10$ mm</td>
<td>$\leq 289$</td>
<td>$\leq 41.3$</td>
</tr>
<tr>
<td>$\geq 9$ mm</td>
<td>$\leq 269$</td>
<td>$\leq 38.5$</td>
</tr>
<tr>
<td>$\geq 8$ mm</td>
<td>$\leq 249$</td>
<td>$\leq 35.6$</td>
</tr>
<tr>
<td>$\geq 7$ mm</td>
<td>$\leq 228$</td>
<td>$\leq 32.6$</td>
</tr>
<tr>
<td>$\geq 6$ mm</td>
<td>$\leq 206$</td>
<td>$\leq 29.5$</td>
</tr>
<tr>
<td>$\geq 5$ mm</td>
<td>$\leq 183$</td>
<td>$\leq 26.1$</td>
</tr>
</tbody>
</table>

* First welded or gasket-equipped envelope

1.6. Total activity

The total activity of the loaded content must be in such a way that, considering the nature and the energy of the emitted radiations, the regulatory criteria concerning the equivalent dose rate around the packaging will not be exceeded.

Moreover, this activity must be lower than 75 x Ul (in PBq) where Ul is the useful cavity length in meters.
2. CRITICALITY STUDIES

The criticality studies are presented in chapter 5A (ref. DOS-06-00032898-500 Rev.5) of the Safety Analysis Report. The isolation system, as defined in chapter 5A of the Safety Analysis Report, is made of the fissile content as defined in this appendix, the package to which the shock absorbing covers and a 10 mm thick resin layer located under the external sheet envelope have been removed, and the internal arrangement for criticality purposes when necessary.

Criticality Safety Index : CSI = 0 (N number : infinite)
CERTIFICATE NUMBER: USA/0693/B(U)F-96, Revision 1

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