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----------TRADUCCIÓN PÚBLICA----------

[All of the characters, words, phrases, and sentences herein written in italics and between brackets, including this one, are the certified translator's own.]----------

[Heading] "2015 – The Bicentennial Anniversary of the Free Peoples' Congress" ----------

ARN No. 3092/15----------

THE NUCLEAR REGULATORY AUTHORITY *[In Spanish: "Autoridad Regulatoria Nuclear", abbreviation: "ARN"].* UNDER THE AUTHORITY OF THE NATIONAL PRESIDENT'S OFFICE ----------

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COMPETENT AUTHORITY'S APPROVAL CERTIFICATE ----------

CONCERNING THE DESIGN OF B(U)-TYPE PACKAGE FOR FISSIONABLE SUBSTANCE CONTENTS, IN SOLID FORM, MODEL LEUPA ----------

RA/0103/B(U)F-96 (Original Version) ----------

It is hereby certified that the MODEL LEUPA package, as described in the next paragraphs, complies with the regulatory requirements related to B(U)-Type Packages for fissionable substance contents set forth by AR 10.16.1 Standard, Revision 2[1], "Transportation of Radioactive Materials", issued by the Nuclear Regulatory Authority, for its being transported by sea, land, and air .----------

1. COMPETENT AUTHORITY'S IDENTIFICATION MARK: ----------

RA/0103/B(U)F-96 ----------

2. ISSUANCE DATE: **June 1, 2015** ----------

3. EXPIRATION DATE: **May 31, 2020** ----------

4. PACKAGE IDENTIFICATION: ----------

Model: **LEUPA**. Series Numbers: **02**, **03**, **04**, **05**. ----------

5. PACKAGING DESCRIPTION: ----------

The LEUPA B(U) Type package design has been intended for transportation and storage of fissionable substances storage (U enrichment lower than 20% in U^{235} atoms, in solid form (metallic) or into known solid compounds, i.e. U_3O_8, UO_2, U_3Si_2, UN, U_xAl_y. ----------

The fissionable substances are packed inside non air-tight steel containers called "internal containers". Each of said containers is of 1.56 dm^3 internal volume. The LEUPA package can hold up to four of these internal containers which, on their turn, are fitted inside said package. This package has been designed according to ASME code and its usable internal volume is of approximately 8.25 dm^3. The package consists of a main body and a standard flange, both of them made in stainless steel. The flange is fitted to the main body with 8 UNC 3/4" screws. The joint between the flange and the main body has been sealed with a spiraled graphite seal that is suitable for operating up to a limit temperature of 450 °C. The flange is fitted with folding grippers of ergonomic design for its handling. ----------

Rubber supplements offset the free space between the internal containers and the package, in order to reduce the dynamic effects under normal

transportation or accident conditions. ----------

Attached to the package is a water-tight double-wall stainless steel cylindrical component. The space between both walls (of approximately 17 mm) is filled with high purity cast cadmium. The flanged cover of the package has a double wall inside which cadmium is cast, so that the cargo of fissionable substances is practically fully surrounded by neutron-absorbent material. This set constitutes a central compact non-deformable cell. ----------

Outside the central cell described in the foregoing section are fitted, radially, eight (8) welded stainless steel structural plates that fit that cell to the external wall of the package. Besides, the package has four rings of cylinder-angle profile, i.e. one ring at each end of the package and the other two rings at approximately one third (1/3) and two third (2/3) portion distance from the package height, respectively, for strengthening purposes. ----------

Each ring is welded to the radial plates. These plates, on their turn, are welded to the central cell, constituting an integrated unit. The external wall of the package is a stainless steel cylindrical plate. At its ends, the package has welded circular covers, which together with the external wall and the central cell define a volume into which the thermal insulating material is fitted, with the central cell resulting to be surrounded by thermal insulating material of approximately 150 mm thickness. ----------

The package has an intermediate dismountable cover consisting of a welded construction made-up of stainless steel cylinder plate and circular covers, which in a way similar to the foregoing define a volume suitable to

be filled with the insulating material, which results to be approximately 150 mm thick.----------

The dismountable intermediate cover is fitted to the remainder of the package with six (6) M12 screws, there being an elastomeric joint between both parts. ----------

Externally to the dismountable intermediate cover there is another cover, solely consisting of a circular stainless steel plate, fitted to the remainder of the package also with six (6) M12 screws. Between both parts is also fitted a 5 mm thick elastomeric joint for preventing dirty or moisture entry. ---------

The external dimensions of the package are approximately 1155 mm height and 532 mm diameter, with the package total mass being of approximately 430 Kg. See diagram in Annex 1. ----------

6. AUTHORIZED RADIOACTIVE CONTENTS: ----------

The design of the package is authorized for transporting ----------

- Uranium enriched up to 20 % (19.75 (±), 0.25 %) in U^{235} atoms of the total content of U to be transported (50 Kg.). The total mass of U^{235} should not be higher than 10000 g.----------

The fissionable substance to be transported can be:----------

Substance	**Form**
Metallic U	Powder – Grains – Chips – Other
UO_2	Powder – Pellets – Other
U_3Si_2	Powder – Chips – Other
UN	Powder – Pellets – Other
U_XAl_y	Powder – Chips – Other
U_3O_8	Powder – Pellets – Other

The whole of the material to be transported should be presented in its solid state, under normal pressure and temperature conditions. ----------

7. CRITICALITY SAFETY INDEX (CSI): ----------

For the authorized radioactive contents, as indicated in paragraph 6 above, the value of the CRITICALITY SAFETY INDEX (CSI) is 0.69----------

8. SHIPPING, TRANSPORT, AND MAINTENANCE CONDITIONS: ---------

8.1 The package should be inspected and maintained according to the INVAP S.E.'S Inspection and Maintenance Manual for MODEL LEUPA Package, 0908-LE00-3BSIN-026 LEUPA – INSPECTION AND MAINTENANCE MANUAL and pursuant to AR 10.16.1 Standard, "Transportation of Radioactive Materials" Revision 2[1]. ----------

8.2 The package should be prepared for its being transported by land, sea or air, according to the Operation Manual for MODEL LEUPA Package, 0908-LE00-3BSIN-017 LEUPA – OPERATION MANUAL and pursuant AR 10.16.1 Standard, "Transportation of Radioactive Materials" Revision 2[1].---

8.3 With regard to each shipment, the sender should give the Nuclear Regulatory Authority notice of: a) the details of the pertinent shipment, at least 2 working days' in advance, by means of form F-TMR-09 or such other form as may replace it, and b) any event or accident that might take place throughout the transportation. ----------

8.4 Each package manufactured according to the package design, as well as the vehicle that transports the package, shall comply with all of the pertinent requirements contained in AR 10.16.1 Standard "Transportation of Radioactive Materials" Revision 2[1].----------

8.5 The sender shall provide to the carrier with the specific instructions to comply with. The carrier shall appropriately know the instructions to follow for emergency cases and shall hold Intervention File No. 127 as set forth in

the applicable regulations.----------

9. QUALITY ASSURANCE----------

The package should be inspected, maintained, prepared for shipment and transported in compliance with 0908-LE00-EDSIN-019 "PROGRAM FOR LEUPA PROJECT QUALITY MANAGEMENT" document, the INVAP S.E.'S pertinent quality documentation, and all of the applicable requirements contained in AR 10.16.1 Standard "Transportation of Radioactive Materials" Revision 2[1]. ----------

10. This certificate does not exempt the sender from complying with any requirement set forth by the Government of any country through/whereto the package is transported. ----------

11. This certificate is issued according to Section VIII, paragraphs 802, 808, 814, and 833 of AR 10.16.1 Standard, "Transportation of Radioactive Materials", Revision 2, and as requested by INVAP S.E., with office at 356 Esmeralda St., Autonomous City of Buenos Aires, Republic of Argentina. --

Call System of Intervention in Radiological Emergencies (Sky Tel) TEL. 4597-9000 mentioning PIN number 1110886----------

CERTIFIED BY:----------

SIGNATURE AND NAME: [*There appears a signature below which is a seal reading as follows:]* Diego HURTADO. Chairman to the Board of Directors..----------

DATE: May 20, 2015----------

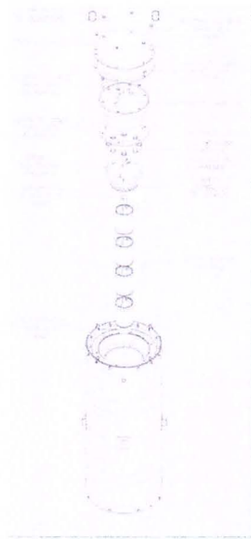
NUCLEAR REGULATORY AUTHORITY *[AUTORIDAD REGULATORIA NUCLEAR]* (ARN). *[Domicile]* Av. Del Libertador 8250 - (1429) - Buenos Aires – Republic of Argentina. TEL.: (54 11) 6323-1722/1708/1722. FAX:

(54 11) 6323-1798/1771 ----------

(1) "Regulations for the Safe Transport of Radioactive Materials", 2009 Edition, Collection of Safety Standards N° TS-R-1 from the International Atomic Energy Agency (IAEA). ----------

ANNEX 1 ----------

DIAGRAM OF MODEL LEUPA PACKAGE DESIGN ----------



2 precintos de seguridad	2 safety seals
Tapa externa	External cover
5 tornillos M12 para tapa intermedia	5 M12 screws for intermediate cover
Junta de goma para tapa intermedia	Rubber seal for intermediate cover
Brida de contención primaria	Primary holding flange
Suplemento superior de goma	Upper rubber supplement
Suplemento inferior de goma	Lower rubber supplement
6 tornillos M12 para tapa externa	6 M12 screws for external cover
Junta de goma para tapa externa	Rubber seal for external cover
Tapa intermedia	Intermediate cover
6 tornillos UNC 1/3" para brida de contención primaria	6 UNC 1/3" screws for primary holding flange
Junta espiralada de grafito	Spiraled graphite seal
4 recipientes internos	4 internal containers

I HEREBY CERTIFY that this translation is a true and correct English version of the attached document in Spanish. Buenos Aires, August 27, 2015. *[In Spanish only for authentication purposes:]* ES TRADUCCIÓN FIEL al idioma inglés del documento adjunto, redactado en idioma castellano, que he tenido a la vista y al cual me remito en Buenos Aires a los 27 días de agosto de 2015.----- ----------

COLEGIO DE TRADUCTORES PUBLICOS
DE LA CIUDAD DE BUENOS AIRES
Corresponde a la Legalización
N° 56043/15
PRISCILA CRISTINA GUELFFI

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