# **SHIPPING PROCEDURE**

for

"Return " of Disused / Spent on Radioactive Sources to the Manufacturer.

# **1.0 Shipping Procedure**

The following procedure shall be utilized for shipping INC depleted source inside the container drum. The container drum shall contain INC source enclosed in a source changer. Shipping procedure shall be performed by the RHSO or a designated radiographer under his supervision in strict compliance with radiation safety procedures. Shipping shall be shipped by airline only.

## **1.1 Pre-Shipping Procedure**

The following procedure shall be utilized in preparation of the radioactive package.

 Individuals performing the pre-shipping operation shall utilize a calibrated operable survey meter and wear a properly mounted current TLD Thermoluminiscent Device and calibrated charged pocket dosimeter.

Wardshield



- Carefully approach the storage area with the survey meter set on the 0-10 mr scale to a distance of approximately 3 feet from the storage area. The reading shall not exceed 2 mr/hr.
- **NOTE:** If the dose rate on the survey meter exceeds 2 mr/hr, follow the Emergency Procedure.





3. If the value is within the allowable, continue approaching the storage area. Survey the outside area of the storage area. The reading shall not exceed 2 mr/hr.

**NOTE:** If the dose rate on the survey meter exceeds 2 mr/hr, follow the Emergency Procedures.

4. If the value is within the allowable, switch to the 0-1000 mr range of the survey meter and unlock the storage area and open the lid/door. Survey the area. The reading shall not exceed 200 mr/hr.

**NOTE:** If the dose rate on the survey meter exceeds 200 mr/hr, follow the Emergency Procedures.

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**5.** Remove the exposure device from the storage area to an area of low backround radiation (Unrestricted Area). Survey the area at 6" all around the perimeter of exposure device or source changer. The reading shall not exceed 50 mr/hr at 6". Record the readings on the Shipping Record.





**NOTE:** If the dose rate on the survey meter exceeds 50 mr/hr, follow the Emergency Procedures.

6. Close and lock the storage area. Log out the exposure device from the storage area location and complete the information on the appropriate Utilization Log.

7. Obtain an empty shipping drum and place the source changer of the exposure device into the shipping drum in the same orientation which it was received. Place the short exchange tube into the drum





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8. Complete the isotope information sheet. Place it inside the shipping drum.



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**9.** Place the top on the shipping drum and secure it with the locking ring.



our commitment

**10.**Survey the Type B shipping drum as follows and retain the readings as they will be recorded on the shipping papers. Survey the shipping drum at a distance of 36". The dose rate shall not exceed 10 mr/hr. Survey the surface perimeter all around of the shipping drum. The dose rate shall not exceed 200 mr/hr. Record the values on the Certificate of Transport. Complete all the information required by the form.

**NOTE:** If the dose rate exceeds either of the two values above, refer to the Emergency Procedures.







## **11.** Apply for the Authority to transport from PNRI.



Republic of the Philippines Department of Science and Technology PHILIPPINE NUCLEAR RESEARCH INSTITUTE NUCLEAR REGULATORY DIVISION Commonwealth Avenue, Diliman, Quezon City P.O. Box Nos. 213 U.P. Quezon City 392 Maniar, 1314 Central, Quezon City Telephone Nos. (+632) 929-8010 to 15 Fax No. (+632) 920-1646



September 10, 2013

TO WHOM THIS MAY CONCERN:

#### AUTHORITY TO TRANSPORT

This is to certify that the consignor, <u>WELDERS TESTING LABORATORIES</u> (PHILS.), INC..., with an address located at <u>S-7 Sunvar Plaza Pasay Road</u> cor. Amorsolo Street, Makati City is a holder of PNRI License No. (16.16405.13 to expire on <u>September 30</u>, 2014. On the basis of licensee's letter of request for the issuance of authorization to transport, duly accomplished Certificate of Transport and other submitted documents, the consignor is hereby authorized to transport the licensed radioactive material/s from the <u>consignor's</u> address as <u>above</u> to <u>Industrial Nuclear</u> <u>Company, Inc., 14320 Wicks Blvd., San Leandro, CA. USA (Ninoy Aquino</u> <u>International Altrort, Parañaque City</u>) on <u>September 10-17, 2013, in</u> accordance with CPR Part 4, "Regulations for the Safe Transport of Radioactive Materials in the Philippines".

Radioactive Material/type/form/activity: <u>One (1) Unit Ir-192 Radiography</u> Sealed Source, Source Model No. 7 / SN: T583 / 0.23458 TBg (6.33 Ci)

Type / Category of Package: <u>Type B(U) / CATEGORY II / YELLOW</u> General Description/Condition of Container/Packaging: <u>IR-50 Changer</u>, <u>SN: 2019, OP 100 Overpack Drum No. 11, D=19cm. x H=42cm</u>.

TEOFILO V. LEONIN, JR.

Chief, Nuclear Regulatory Division

Amount Paid: P 300.00 Total Amount Paid: P 1,800.00 PNRI Receipt No.: 7146684 Date issued. 09-11-13 AT.No.: RPB-13-128-09



12. Labeling Instructions- The survey readings obtained in Step 10 shall be used to determine the correct type attached to the outside of the shipping drum.



Table 1-1

	Table 1-1		
Category Label	Maximum dose rate at surface	Maximum dose rate at 1 metre	
RADIOACTIVEIII	5 μ Sv/h (0.5 mrem/h)	ZERO	
RADIOACTIVE ##	500 μ Sv/h (50 mrem/h)	10 μ Sv/h (1 mrem/h)	
II YELLOW	2 μ Sv/h (200 mrem/h)	100 μ Sv/h (10 mrem/h)	
III YELLOW	Integrit	vis our co	mmitment

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 Satisfy both requirements of maximum radiation on the surface and 36" away and select the correct label type.

14. On each of the two external Class labels enter the correct isotope type (Ir-192), the current amount of curies or TBq (obtained from decay chart) and the transport index (survey meter reading in mr/hr at 36").

**15.** Mount the two labels on the outside of the shipping drum.



**16.** Affix a leaded tamper proof safety seal onto the shipping drum locking ring and fasten with a hammer or other suitable means.

- 14. On each of the two external Class labels enter the correct isotope type (Ir-192), the current amount of curies or TBq (obtained from decay chart) and the transport index (survey meter reading in mr/hr at 36").
- **15.** Mount the two labels on the outside of the shipping drum.
- **16.** Affix a leaded tamper proof safety seal onto the shipping drum locking ring and fasten with a hammer or other suitable means.



**17.** Obtain a red-bordered Shipper's Certification for Radioactive Materials from the RSO.

SHIPPER'S DECLARATION FOR DANGEROUS GOODS		•	(Provide at least three copies to the airline.)					
Shipper WELDER'S TESTING LAB (PHE.S) INC. 5-7 Sultwar Peza, Pesay Road cor. Anoropio SI. Makali City Philippines		Pag	Air Waybill No. 023 – 1522 0951 Page 2 of 3 Peges Shipper's Reference Number					
14320 W	GAL NUCLEAR CO., INC. KIS Boulevard, dro, CA 94517			Fed	Express *	This templat NOT subject	e for shipmenta to FX-18 Only	
	ieted and signed copies of I to the operator	this Declaration mu	r V	VARNING				
TRANSPORT DETAILS This shipment is within the Imitations preserved to Microsoftwork of the Mi		H of Departure MANILA (MNL) PHILIPPINES	- 0	Failure to comply with all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.				
	Algort of Destination: SAN FRANCISCO (SFO)			Shipmeni type: Jakes Ashaptischel Vechensele Ashaptischel				
	RE AND QUANTITY OF		OODS				í	
UN or ID No	Proper Shipping Ne	dam	tr]	Qua type o	antity and If packaging	Packing Inst.	Authorizatio	
UN 2916	RADIOACTIVE MATERIAL TYPE BIU PACKAGE	7		Iridium 192 1 Type B(U) 5 yoo B(Type B(U) 7 yoo B(Type B(U) X 0.23502 T 5 beet Dram Changer SN	n Foq SIN: 41	II Veliow TJ: 0:2 Dima: 41x020x44 Weight: 32 Kgs.	Special Form Certificate USA 02877 S-80 Rex. 7 Type 8(U) Pockage Certificate USA 01957 B(U) 90 Rex. 9 Certificate USA 01957 B(U) 90 Rex. 9 Certificate of Transport Datad Oct 3. 2013	
l her sccu class resp-	al Handling Information by declare that the contr rately described above by filed, packaged, marked scis in progen condition i hational and National Go the applicable air transp WYCONTACT ME ALL PLAN	y the proper shippic and labellod/placan or transport accord remnental Regulat ort requirements ha	ig name, a led, and an ing to appl ions. I deci	nd are to in all licable lare that	Narra/Title of St Place and Date Signature	DANTE A BE PADIOLOGIC SAFETY AND MODIFICATION	AL HEALTH &	



- 18. Obtain a Bill of Lading from the Commercial Airline Carrier who is transporting the shipping drum. WTL personnel shall complete the form in a similar manner.
- 18. Secure the shipping drum in the transporting vehicle as applicable below: Mount vehicle signs.

Trunk of car physically secured in place.b. Developing section of camper mounted pick-upc. Bed of pick-up physically secured in place

- **20.** Survey the passenger compartment area. Readings shall be 2 mr/hr or less. If the reading is exceeded, add shielding between the package and the passenger compartment area to reduce the dose rate to 2 mr/hr or less.
- 21. Store the survey meter on the seat of the vehicle.
- 22. Transport the source to the location where the device will be shipped. Periodically during transportation check the passenger compartment area to insure that the dose rate is 2 mr/hr or less.
- 23. Upon arrival, remove the drum from the transporting vehicle, and transfer it the carriers facility and resurvey the barrel. The readings shall not exceed 10 mr/hr at 3 feet or 200 mr/hr on the surface. Remove the vehicle signs.

24. Carrier Acknowledgement regrity is our commitment

**NOTE:** Have the person who receives the drum for the carrier sign the bill of lading. Retain a copy of the bill of lading and the last two (20 copies of the shipper's certification for radioactive materials.

25. Forward the retained copies to the RSO who shall place them in the applicable sealed source file.



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# Thank You

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