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X-Ray Department  
NORTHWESTERN  
HOSPITAL SERVICES

120 LABREE AVENUE SOUTH

PHONE 881-4240

THIEF RIVER FALLS, MINNESOTA 56701

REHABILITATION AND ACUTE SECTION  
DAY-NIGHT PSYCHIATRIC UNIT  
MEDICAL OFFICE BUILDING

NRC Licence Number 22-10236-01

James G. Keppler, Director  
Nuclear Regulatory Commission, Region III  
799 Roosevelt Road  
Glenellyn, Illinois 60137

Dear Sir:

In response to your bulletin NO. 79-19, the only radioactive materials shipped for this hospital are used Minetec (Technecium 99m) Generators. They are returned to Medi-Ray, Inc., 150 Marbledale Road, Tuckahoe, New York 10707. Medi-Ray is licensed by New York state to handle radioactive waste. Their license number is 2077-2157.

We receive one generator each week and return them to Medi-Ray, Inc. in groups of 6 or more according to the enclosed "Return Program Instruction".

I hope this meets with your approval.

Sincerely,

12/11/79

Orvel Stocks, RT (ARRT)  
Chief X-Ray Tech

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CONVALESCENT & NURSING  
CARE UNIT (CNC)

# STRAIGHT BILL OF LADING - SHORT FORM

ORIGINAL - NOT NEGOTIABLE  
 Date \_\_\_\_\_

Hospital Account No. \_\_\_\_\_  
 Agent's No. \_\_\_\_\_

SQ 54-2 Rev. 8/79

COMPANY \_\_\_\_\_

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

Hospital Name \_\_\_\_\_

Address \_\_\_\_\_

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to **Medi-Ray, Inc.** (Mail or street address of consignee - For purposes of notification only)  
 Destination **150 Marbledale Road**  
**Tuckahoe, New York (Westchester County) 10707**

Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignor shall sign the following statement:  
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Route \_\_\_\_\_  
 Delivering Carrier \_\_\_\_\_ Car or Vehicle Initials \_\_\_\_\_ No. \_\_\_\_\_

No. Generators	Kind of Package	HM	Description of Articles, Special Marks, and Exceptions	Weight* (Subject to Correction)	Class	Check Column
	Bases	X	Radioactive Material NOS Item # 164900-Sub. 1		70	
			Radionuclide	Chemical Form	Physical Form	
		X	Molybdenum-99	Technetium-99 Generator	Solid	
			T. I.	Activity In Curies	Radioactive Label	
					White I	Yellow II
						Yellow III

Per \_\_\_\_\_  
 (Signature of Consignor)

If charges are to be prepaid, write or stamp here "To be Prepaid"

**COLLECT**

This shipment is correctly described. Gross weights of this shipment are correct as shown herein and subject to verification by the governing Weighing and Inspection Bureau.

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

"FOR PAYMENT" ALL FREIGHT BILLS SHOULD BE MAILED TO: **Medi-Ray, Inc.**  
**150 Marbledale Road, Tuckahoe, New York 10707**

\* (Shipper's expense in law of stamp not a part of bill of lading approved by the Interstate Commerce Commission.)

\*\* The fibre barrels, boxes or drums used for this shipment conform to the specifications set forth in the barrel, box or drum maker's certificate thereon, and all other requirements of Uniform Freight Classifications.

† If the shipment agrees between two parts by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."  
 NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

\* The agreed or declared value of property is hereby specifically stated by the shipper to be not exceeding **40 cents per pound**

Per \_\_\_\_\_ Shipper Per \_\_\_\_\_

IF MORE THAN ONE BILL OF LADING IS USED, PLEASE STAPLE TOGETHER

POOR ORIGINAL



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TECHNOLOGIST EDUCATION PLAN

SPONSORED BY

MINITEC\* (TECHNETIUM 99m) GENERATOR

RETURN PROGRAM

RETURN INSTRUCTIONS:

1. Remove the MINITEC\* (Technetium 99m) GENERATOR you have just received from the shipping box. (Save shipping box.)
2. Remove needle adapter assembly from last week's MINITEC GENERATOR and replace lead plugs.
3. Place last week's MINITEC GENERATOR into the shipping box, and write the calibration date on the box. If the MINITEC GENERATOR was accompanied by a special lead shipping shield make sure it is also put into the shipping box.
4. Seal the shipping box with the tape provided in the envelope. KEEP THIS INSTRUCTION ENVELOPE AS IT CONTAINS ALL OF THE LABELING NECESSARY FOR SHIPPING BACK ONE USED MINITEC GENERATOR.
5. After at least six (6) MINITEC GENERATORS have been accumulated, paste the return address labels (MEDI-RAY, INC., 150 Marbledale Road, Tuckahoe, New York 10707) found in each of the instruction envelopes over every old address label located on the shipping boxes.
6. Determine the appropriate D.O.T. radioactive warning labels for each shipping container by using an appropriate survey meter. The following criteria apply:

Radioactive-White I Label: The package measures no more than 0.5 milliroentgen per hour on the surface.

Radioactive-Yellow II Label: The package measures more than 0.5 but less than 50 milliroentgen per hour on the surface and measures no more than one (1.0) milliroentgen per hour at three feet from the surface.

Radioactive-Yellow III Label: The package measures more than 50 milliroentgen per hour on the surface or exceeds one (1.0) milliroentgen at three feet from the surface. The surface of the package must not exceed 200 milliroentgen per hour or 10 milliroentgen per hour at three feet.

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7. Complete the applicable D.O.T. radioactive warning labels for each shipping box. (Discard labels not required.)

The following information must appear on the warning label:

- A. Radionuclide ("Molybdenum 99" or "99 Mo").
- B. Number of curies: To calculate remaining activity use formula

$$\text{Final Activity} = \text{Initial Activity} \times \text{Decay Factor}$$

--See example and decay factor on the attached chart.

- C. Transport Index: The Transport Index is the highest radiation dose rate, in milliroentgen per hour, at three (3) feet from any surface of the shipping box rounded up to the next highest tenth.

8. Deface the old D.O.T. radioactive warning labels. Affix the new warning labels directly over the old labels completely covering them.
9. Perform a wipe test on the exterior surface of the shipping boxes to insure that they are free of "significant removable contamination". The Transportation Department considers significant levels to be those which exceed 22,000 DPM/100 cm<sup>2</sup> for beta-gamma emitters.
10. After each box has been properly labeled complete the enclosed Bill of Lading as directed below: (Only the enclosed Bill of Lading should be used.)
  1. Indicate the total number of packages to be shipped. (Return no less than six Minitec Generators at a time. Only one Bill of Lading should be used per shipment, however, regardless of the total number of packages being returned.)
  2. Indicate the total weight of the shipment:  
  
MINITEC GENERATOR WEIGHTS are:  
  
Generator only 29 lbs.  
880 mCi & 1330 mCi generator with additional shield 41 lbs.  
1770mCi & 2220 mCi generator with additional shield 64 lbs.
  3. For each box indicate the Transport Index, the activity in curies, and put a "✓" or "x" in the appropriate box to indicate which radioactive warning label has been applied to the package.
  4. Sign the shipper's certification.
11. Call a common carrier to arrange for the return of the used MINITEC GENERATOR. SOME RECOMMENDED carriers are:

APA Transport, Associated Transport,  
Mc Lean Trucking, Ryder Trucking

If you cannot locate a carrier who will handle the shipment or need assistance in Bill of Lading preparation, call the MEDI-RAY Transportation Department for assistance at the following number 914- 961-8484. Send the shipment via freight collect.

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INSTRUCTIONS FOR CALCULATING REMAINING MOLYBDENUM-99 ACTIVITY

FINAL ACTIVITY = INITIAL ACTIVITY X DECAY FACTOR

FA = IA X DF

EXAMPLE: FA = 2220 mCi X .00056  
 (calibration date 5/27/77) (Decay Factor <sup>99</sup>Mo for 30 days)

FA = 1.2432 mCi 6/25/77

MOLYBDENUM-99 POST CALIBRATION

DECAY FACTOR CHART

<u>TIME (DAYS)</u>	<u>DECAY FACTOR</u>	<u>TIME (DAYS)</u>	<u>DECAY FACTOR</u>
0	1.00000	26	.00153
1	.77926	27	.00119
2	.60725	28	.00093
3	.47321	29	.00072
4	.36875	30	.00056
5	.28735	31	.00044
6	.22392	32	.00034
7	.17450	33	.00027
8	.13598	34	.00021
9	.10596	35	.00016
10	.08257	36	.00013
11	.06435	37	.00010
12	.05014	38	.00008
13	.03907	39	.00006
14	.03045	40	.00005
15	.02373	41	.00004
16	.01849	42	.00003
17	.01441	43	.00002
18	.01123	44	.00002
19	.00875	45	.00001
20	.00682	46	.00001
21	.00531	47	.00001
22	.00414	48	.00001
23	.00323	49	.00000
24	.00251	50	.00000
25	.00196		

GREATER THAN 50 DAYS -- NUMBER OF CURIES FOR D.O.T. PURPOSES = 0

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12. Retain the shipper's copy for a record of disposition.

NOTE: COMPLAINT MINITEC GENERATORS SHOULD NOT BE SHIPPED USING THIS PROCEDURE. CONTACT SQUIBB TECHNICAL CUSTOMER SERVICE (telephone 609-921-4100) FOR RETURN INSTRUCTIONS.

TO INSURE PROPER CREDITING OF ALL MONETARY REBATES PLEASE FOLLOW INSTRUCTIONS.

IMPORTANT: THIS PROGRAM IS INTENDED ONLY FOR THE RETURN OF MINITEC GENERATORS. NO OTHER ITEMS WILL BE ACCEPTED.

E. R. SQUIBB & SONS, INC.

K4297C

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