

## Lanzisera, Penny

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**From:** Ilya Pavlenko <Ilya.Pavlenko@varian.com>  
**Sent:** Tuesday, February 23, 2016 9:46 AM  
**To:** Lanzisera, Penny  
**Cc:** Jose Bernazar  
**Subject:** [External\_Sender] Re: University of Puerto Rico DU removal

Yes, I confirm.

Sent from my iPhone

On Feb 23, 2016, at 6:44 AM, Lanzisera, Penny <[Penny.Lanzisera@nrc.gov](mailto:Penny.Lanzisera@nrc.gov)> wrote:

Mr. Pavlenko, can you confirm Mr. Bernazar's statement; that the following units were removed along with their DU:

<image002.png>

**From:** Jose Bernazar [<mailto:Jose.Bernazar@varian.com>]  
**Sent:** Friday, February 19, 2016 5:50 AM  
**To:** Ilya Pavlenko <[Ilya.Pavlenko@varian.com](mailto:Ilya.Pavlenko@varian.com)>; Lanzisera, Penny <[Penny.Lanzisera@nrc.gov](mailto:Penny.Lanzisera@nrc.gov)>  
**Subject:** [External\_Sender] RE: RE: RE: University of Puerto Rico DU removal

Hi Penny,

Below are the machines that were removed from the center. If there is anything else we can assist with, please let us know.

<image003.jpg>

Thanks, Jose.

José Bernazar  
Manager, District Field Operations  
Varian Medical Systems  
North America Customer Support Services  
cel +1 305 345 4551  
fax +1 772 933 3598

*CSS Mission-> We are a responsive and innovative organization that provides comprehensive support solutions enabling our customers to deliver the most effective patient care possible.*

*CSS Vision-> To be the fastest, friendliest, most knowledgeable, hassle free provider of support solutions, resulting in an exceptional experience for our customers worldwide.*

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## Lanzisera, Penny

**From:** Lanzisera, Penny  
**Sent:** Tuesday, February 23, 2016 9:45 AM  
**To:** Ilya Pavlenko  
**Cc:** 'Jose Bernazar'  
**Subject:** RE: RE: RE: RE: University of Puerto Rico DU removal

Mr. Pavlenko, can you confirm Mr. Bernazar's statement; that the following units were removed along with their DU:



## Quotation

NKG20120908-001

Page 1

*Quotation For:*

Jorge De Jesus  
University of Puerto Rico Comprehensive Cancer Center  
Medical Sciences Campus  
Biomedical Building 1, Floor 1, Office 162  
Puerto Medical Center  
San Juan, PR 00936  
(787) 772 - 8300

*Please address inquiries and replies to:*

Jose Bernazar  
Varian Medical Systems  
2250 Newmarket Parkway  
Ste 129  
Marietta, GA 30067  
(770) 933 - 1775 FAX (772) 933 - 3596  
jose.bernazar@varian.com

Your Reference	Quotation Form/Date	September 27, 2013	
FOB Point	US2 FOB Destination	Shipping Allocation	30 DAYS ARO
Payment Terms	10%/85%/5%	Varian Terms and Conditions of Sale 1652U Attached	

Disposal of CL-4 ser 0048  
Disposal of CL-4 ser 0214  
Disposal of CL-4 ser 0265  
Disposal of CL-6/100 ser 0038  
Disposal of CL-6/100 ser 0477  
Disposal of CL-2100C ser 0547

← Note - Liza's letter dated 11-21-11 indicated SN 216 instead of 214, Varian confirmed that correct SN is 214. PL

**From:** Jose Bernazar [mailto:Jose.Bernazar@varian.com]  
**Sent:** Friday, February 19, 2016 5:50 AM  
**To:** Ilya Pavlenko <Ilya.Pavlenko@varian.com>; Lanzisera, Penny <Penny.Lanzisera@nrc.gov>  
**Subject:** [External\_Sender] RE: RE: RE: University of Puerto Rico DU removal

Hi Penny,

Below are the machines that were removed from the center. If there is anything else we can assist with, please let us know.



# Quotation

NKG20120908-001

Page: 1

**Quotation For:**

**Jorge De Jesus**  
University of Puerto Rico Comprehensive Cancer Center  
Medical Sciences Campus  
Biomedical Building I, Floor 1, Office 162  
Puerto Medical Center  
San Juan, PR 00936  
(787) 772 - 8300

*Please address inquiries and replies to:*

**Jose Bernazar**  
Varian Medical Systems  
2250 Newmarket Parkway  
Ste 120  
Marietta, GA 30067  
(770) 955 - 1775 FAX: (772) 933 - 3598  
jose.bernazar@varian.com

Your Reference:	Quotation Firm Until: <b>September 27, 2013</b>
FOB Point: <b>US2 FOB: Destination</b>	Shipping Allocation: <b>30 DAYS ARO</b>
Payment Terms: <b>10%/85%/5%</b>	Varian Terms and Conditions of Sale <b>1652U Attached</b>

- Disposal of CL-4 ser 0048**
- Disposal of CL-4 ser 0214**
- Disposal of CL-4 ser 0265**
- Disposal of CL-6/100 ser 0038**
- Disposal of CL-6/100 ser 0477**
- Disposal of CL-2100C ser 0547**

Thanks, Jose.

José Bernazar  
Manager, District Field Operations  
Varian Medical Systems  
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cel +1 305 345 4551  
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-----Original Message-----

From: Ilya Pavlenko  
Sent: Thursday, February 18, 2016 1:31 PM  
To: Lanzisera, Penny <Penny.Lanzisera@nrc.gov>  
Cc: Jose Bernazar <Jose.Bernazar@varian.com>  
Subject: RE: RE: RE: University of Puerto Rico DU removal

Hello Penny,

Q1:

Clinac 4 (s/n: 48)  
Clinac 4 (s/n: 214)  
Clinac 4 (s/n: 265)

The part which was removed is 8.3kg oval shape plate. All of them were secretly stored. I picked them up and packaged one with each set of DU removed from each machine.

Q3:

I do not have the information regarding which model numbers of Clinac 4s that Varian sold to Gonzalez Oncological Hospital. I simply is not involved in the sales process. Our radiation safety team only ensure our equipment and services in sync and approved with current and local regulations. Varian is a very large company and we have sales and installation groups that make sure all regulatory requirements are met by customers. However, it is ultimately customer responsibility to ensure regulatory compliance after they receive and start using the equipment.

Let me know if you have any further questions.

Regards,

ILYA Pavlenko, MS, Health Physicist / Alternate RSO Americas Corporate Radiation Safety Department Varian Medical Systems  
911 Hansen Way, MS: C-255, Palo Alto, CA 94304  
T: 650-424-6998 | C: 650-518-6413 | F: 650-842-5051

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-----Original Message-----

From: Lanzisera, Penny [mailto:Penny.Lanzisera@nrc.gov]  
Sent: Thursday, February 18, 2016 3:37 AM  
To: Ilya Pavlenko  
Subject: RE: RE: RE: University of Puerto Rico DU removal

Thank you. For Q1, can you say which unit or even model of unit the DU was removed from?  
For Q3, can you tell me which model numbers of Clinac 4s that Varian sold to I Gonzalez Oncological Hospital

From: Ilya Pavlenko [Ilya.Pavlenko@varian.com]  
Sent: Wednesday, February 17, 2016 1:53 PM  
To: Lanzisera, Penny  
Cc: Jose Bernazar  
Subject: [External\_Sender] RE: RE: University of Puerto Rico DU removal

Hello Penny,

Question # 1:

It was actually three plates (oval shape electron gun shielding) and I did take possession of all of them during the decommissioning and they were included in the shipment.

Question # 2:

The DU was shipped to the following address: 11601 W. Touhy Ave., Bldg. 893 Unit 2, Chicago, IL 60666, which was on Varian radioactive material license at that time of the shipment and until it was picked up by the waste broker. Copy of the license is attached for your review.

Question # 3:

I cannot confirm or deny the fact the Clinac 4 s/n: 214 is the same as s/n 216 on LIGA's paperwork. I only can confirm the fact that we indeed picked up DU from Clinac 4 s/n 214. I am not familiar with LIGA's paperwork.

Let me know if you have any further questions,

Regards,

ILYA Pavlenko, MS, Health Physicist / Alternate RSO Americas Corporate Radiation Safety Department Varian Medical Systems

911 Hansen Way, MS: C-255, Palo Alto, CA 94304

T: 650-424-6998 | C: 650-518-6413 | F: 650-842-5051 [cid:image001.jpg@01CF83BA.C29368F0]

[radiationsafety\_header]

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From: Lanzisera, Penny [mailto:Penny.Lanzisera@nrc.gov]

Sent: Tuesday, February 16, 2016 3:05 PM

To: Ilya Pavlenko

Cc: Jose Bernazar

Subject: RE: RE: University of Puerto Rico DU removal

Thank you for the information. Three questions:

- 1) From a previous inspection of the facility, the NRC noted that 2 plates had been removed from a LINAC and were in storage. Did you take possession of these plates during your decommissioning, and if so, which unit were they associated with?
- 2) The licensee provide a license for you that expired in January 2013 that allowed Varian to take possession of the DU. Since the DU was removed from this facility in October 2013, can you provide a copy of the license in effect at that time that allowed possession?
- 3) One of the Clinac 4 units is listed on your letter with SN 124, on your detailed paperwork as SN 214, and in LIGA's paperwork as SN 216. Can you confirm that these are all the same unit?

Again, thank you for any assistance you can provide,

Penny Lanzisera  
Senior HP  
US NRC, Region I

From: Ilya Pavlenko [mailto:Ilya.Pavlenko@varian.com]  
Sent: Friday, February 05, 2016 6:39 PM  
To: Lanzisera, Penny <Penny.Lanzisera@nrc.gov<mailto:Penny.Lanzisera@nrc.gov>>  
Cc: Jose Bernazar <Jose.Bernazar@varian.com<mailto:Jose.Bernazar@varian.com>>  
Subject: [External\_Sender] RE: University of Puerto Rico DU removal

Hello,

My name is ILYA Pavlenko and I am Varian alternative RSO – Americas. Jose asked my assistance with answering your questions.

We indeed removed 122.3 kg of DU from each Clinac 4 machine (3 total) and 63 kg of DU from Clinac 6/100. I was the one who was conducting the removal. I can only speculate why the license stated that each unit had 106 kg (235 lbs). According to Varian records Clinac 4 has up to 123 kg (271.5 lbs) of DU and only Clinac 6/100 has up to 106 kg (235 lbs) of DU. The only explanation might be they mistakenly used information for Clinac 6/100 to provide information for all machines. I used term “up to” because throughout the history of those machines (Clinac 4 and 6/100) production some modification had happened and some DU components were obsoleted and replaced with tungsten equivalents. And after certain serial number those machines (Clinac 4 and 6/100) have not had DU components installed at all. For example, Clinac 6/100, which we removed from the hospital, supposed to have up to 106 kg (235 lbs), however it had only 63 kg, because this particular machine had a primary collimator made of tungsten instead of DU, which weights up to 44 kg. I personally inspect and surveyed every machine and component that might be manufactured from DU and confirmed no DU components or DU contamination was left after removal. It is easy to spot those components even visually, they have “CAUTION RADIOACTIVE MATERIAL, DEPLETED URANIUM” engraved on them. And it almost impossible to miss them when surveying with GM Counter. I have disassembled many Varian machines with DU components, and confident all DU components were removed from the machines. As of Marth 9, 2015 all the DU removed from those machines is successfully disposed by Toxco of at Energy Solution in Clive, Utah.

Unfortunately, we do not have any information about Clinac 4/80, Serial Number 216 and Clinac 6/100, Serial Number 477. According to Varian records Varian do not service those machines. And Varian only has information about machines that are “active”, meaning powered on and serviced by Varian service personnel.

Please, let me know if you have any further questions.

ILYA Pavlenko, MS, Health Physicist / Alternate RSO Americas Corporate Radiation Safety Department Varian Medical Systems  
911 Hansen Way, MS: C-255, Palo Alto, CA 94304  
T: 650-424-6998 | C: 650-518-6413 | F: 650-842-5051 [cid:image001.jpg@01CF83BA.C29368F0]

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From: Jose Bernazar  
Sent: Thursday, February 04, 2016 10:40 AM  
To: Ilya Pavlenko  
Subject: Fwd: University of Puerto Rico DU removal

Can you help respond? Should we have a conference call with Penny?

Sent from my iPhone

Begin forwarded message:  
From: "Lanzisera, Penny" <>  
Date: February 4, 2016 at 13:17:08 EST  
To: Jose Bernazar <Jose.Bernazar@varian.com<mailto:Jose.Bernazar@varian.com>>  
Subject: RE: University of Puerto Rico DU removal Two questions for your RSO-

The documents indicate that 122 kg was removed from each unit; however, documents originally submitted by the licensee stated that each unit had 235 pounds. Can you confirm the amount originally installed in each unit?

Also, does Varian have any information regarding the following units:

4/80, Serial Number 216  
6/100, Serial Number 477

Thank you for your assistance,

Penny

-----Original Message-----

From: Jose Bernazar [mailto:Jose.Bernazar@varian.com]  
Sent: Wednesday, February 03, 2016 11:51 PM  
To: Lanzisera, Penny <Penny.Lanzisera@nrc.gov<mailto:Penny.Lanzisera@nrc.gov>>  
Subject: [External\_Sender] University of Puerto Rico DU removal

Hi Penny,

I hope you are well. Please review the attached documents I received from my RSO and let me know if you have any questions or concerns.

Thanks, Jose.

November 11, 2013

**To:** Jossian J. Pagan-Lisboa, Radiation Safety Officer  
University of Puerto Rico  
Medical Sciences Campus, Office of the Chancellor  
P.O. Box 365067, San Juan, PR 00936-5067  
Phone: (787) 612-6825 or (787) 766-3082, Email: jossian.pagan@upr.edu

**Subject: Removal of Depleted Uranium (DU) components from four decommissioned Varian Low-Energy Accelerators**

During the week of October 21-25, 2013, Health Physicist Ilya Pavlenko of the Varian Medical Systems, Inc. (VMS) Radiation Safety Department assisted in removal of DU components from the following decommissioned VMS Low-Energy accelerators located in your facility:

- Clinac 4 (s/n: 48)
- Clinac 4 (s/n: 124)
- Clinac 4 (s/n: 265)
- Clinac 6/100 (s/n: 38)

The complete set of DU components expected for each model and serial number was retrieved from each machine. The components were then weighed, packaged in four 55-gallon barrels, and shipped to a temporarily storage location covered under a VMS radioactive materials license in the state of Illinois. A copy of the shipping declaration for each barrel, as well as a listing of the acquired material, and the license permitting VMS to take possession of the material is attached.

After finishing packaging of the material, a final contamination survey was conducted to verify that no loose contamination was left at the location. A copy of the survey report is attached for your review as well.

Please feel free to contact me if you have any further questions with this matter.

Kind Regards,



Elsa Nimmo, CHP, Radiation Safety Officer (Americas)  
Varian Medical Systems, 911 Hansen Way, MS: C-260, Palo Alto, CA 94304 USA  
Phone: (650) 424-6655, E-mail: elsa.nimmo@varian.com

Attached: Copy of shipping forms for radioactive components for each barrel (4 pages)  
Copy of inventory for acquired radioactive material from University of Puerto Rico (1 page)  
Copy of VMS license (IL-01143-01) in the state of Illinois (5 pages)  
Copy of post-job radiation contamination survey report (2 pages)

CC: Ilya Pavlenko, VMS  
Robert Gerber, VMS  
Jose Bernazar, VMS  
David M. Rhoe, Business Consulting, Phone: (787) 245-7248, E-mail: crmidmr@aol.com



**Acquired Radioactive Material from University of Puerto Rico**

<b>Barrel No. 1:</b>	<b>55 gal</b>	<b>Surface:</b>	<b>0.50 mR/hr</b>
	<b>8.83 cf</b>	<b>TI =</b>	<b>n/a</b>
<b><i>Clinac 4 (s/n: 48)</i></b>	<b>DU Weight</b>	<b>Activity (U-238)</b>	
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Gun Shield	8.3 kg	2.78 mCi	0.10 GBq
Primary Collimator	30.8 kg	10.32 mCi	0.38 GBq
<b>TOTAL</b>	<b>122.3 kg</b>	<b>40.99 mCi</b>	<b>1.52 GBq</b>

<b>Barrel No. 2:</b>	<b>55 gal</b>	<b>Surface:</b>	<b>0.50 mR/hr</b>
	<b>8.83 cf</b>	<b>TI =</b>	<b>n/a</b>
<b><i>Clinac 4 (s/n: 214)</i></b>	<b>DU Weight</b>	<b>Activity (U-238)</b>	
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Gun Shield	8.3 kg	2.78 mCi	0.10 GBq
Primary Collimator	30.8 kg	10.32 mCi	0.38 GBq
<b>TOTAL</b>	<b>122.3 kg</b>	<b>40.99 mCi</b>	<b>1.52 GBq</b>

<b>Barrel No. 3:</b>	<b>55 gal</b>	<b>Surface:</b>	<b>0.50 mR/hr</b>
	<b>8.83 cf</b>	<b>TI =</b>	<b>n/a</b>
<b><i>Clinac 4 (s/n: 265)</i></b>	<b>DU Weight</b>	<b>Activity (U-238)</b>	
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Lower Jaw Block	23.9 kg	8.01 mCi	0.30 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Upper Jaw Block	14.2 kg	4.76 mCi	0.18 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Gun Shield	8.3 kg	2.78 mCi	0.10 GBq
Primary Collimator	30.8 kg	10.32 mCi	0.38 GBq
<b>TOTAL</b>	<b>122.3 kg</b>	<b>40.99 mCi</b>	<b>1.52 GBq</b>

<b>Barrel No. 4:</b>	<b>55 gal</b>	<b>Surface:</b>	<b>0.50 mR/hr</b>
	<b>8.83 cf</b>	<b>TI =</b>	<b>n/a</b>
<b><i>Clinac 6/100 (s/n: 38)</i></b>	<b>DU Weight</b>	<b>Activity (U-238)</b>	
Gun Shielding Disk #1	20.6 kg	6.90 mCi	0.26 GBq
Gun Shielding Disk #2	19.3 kg	6.47 mCi	0.24 GBq
Gun Shielding Disk #3	16.1 kg	5.40 mCi	0.20 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
Face Plate	3.5 kg	1.17 mCi	0.04 GBq
<b>TOTAL</b>	<b>63.0 kg</b>	<b>21.11 mCi</b>	<b>0.78 GBq</b>

<b>TOTALS:</b>	<b>Volume</b>	<b>35.31 cf</b>	
	<b>Shipment Weight</b>	<b>656.3 kg</b>	<b>1447.1 lbs</b>
	<b>DU Weight</b>	<b>429.9 kg</b>	<b>947.9 lbs</b>
	<b>DU Activity</b>	<b>144.07 mCi</b>	<b>5.33 GBq</b>