

August 18, 2022

US NRC Region III  
2443 Warrenville Road  
Suite 210  
Lisle, IL 60532-4352

Licensee: Christian Hospital Dept. of Nuclear Medicine  
Address: 11133 Dunn Rd., St. Louis, MO 63136  
License #: 24-13383-01  
Amendment #: #77  
Action Requested: **Request to Amend Radioactive Materials License (RAML)**  
Purpose: Remove Material of Use

Dear Sir or Madam,

Christian Hospital wishes to amend the RAML referenced above:

1. In Conditions 6-9: please remove Uranium-235 for use as shielding in a linear accelerator.
2. In Condition 12B, please remove for following Authorized Users:

Gregory King, MD

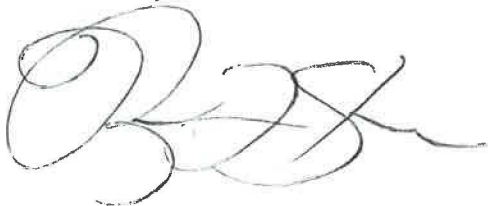
Javed Iqbal Malik, MD

John L Rollo, MD

Supporting documentation for the removal of Ur-235 is attached.

We look forward to your expedited review and approval of this amendment request to ensure uninterrupted patient care services in our Nuclear Medicine department. Should you require additional information, please contact Corey Ginetz at [Corey.ginetz@westphysics.com](mailto:Corey.ginetz@westphysics.com) or 770-435-9186.

Sincerely,



**Attachments:**

Attachment 1	ADCO removal service quote
Attachment 2	ADCO removal service invoice
Attachment 3	Uranium disposal work order
Attachment 4	ADCO RAML
Attachment 5	Linac removal summary

**RECEIVED SEP 13 2022**



July 1, 2009

Howard D. Rabe  
Project Engineer  
Project Management  
BJC HealthCare  
1537 Larkin Williams Road  
Fenton, MO 63026

Re: Depleted Uranium Removal

In all correspondence please refer to quote number: Q09-165

Dear Mr. Rabe,

I am please to offer you the following quote for the removal and disposal of depleted uranium collimator blocks installed in the head of your Clinac 6/100 unit that was discovered during the removal of DU shielding on 6/26/2009. It is estimated that the remaining depleted uranium will weigh approximately 300 lbs.

**Scope and Cost:**

ADCO Services personnel will package and transport the collimator head of the 6/100 unit from Christian Hospital to our facility in Tinley Park, IL where the depleted uranium will be removed in our controlled radiation work area. It will then be encapsulated in structural grade concrete and shipped to the Energy Solutions disposal facility in Clive, Utah.

Description	Price
Health Physics Technician	\$500.00
Depleted Uranium disposal	\$2,600.00
Transportation/Expenses	\$548.40
24 hour emergency telephone number	\$50.00
<b>Total cost</b>	<b>\$3,698.40</b>

**Schedule:**

Upon receipt of a purchase order, ADCO Services, Inc. will contact you to arrange a mutually agreeable time to have this waste material packaged and shipped.

**Special Provisions:**

ADCO Services, Inc. complies with the requirements of 10CFR20, appendix G, section III, C.1 and will notify you of the receipt of this material at our facility.

**Terms:**

Payment terms are net 30 days from the date of invoice. All prices quoted herein will be valid for a period of 30 days from the date of this letter. If you have any questions or require additional information please feel free to contact us at (708) 429-1660.

Respectfully,

Robert W. Bassett  
Operations/Technical Services Manager

RECEIVED SEP 13 2022

**ADCO SERVICES, INC.**

P O. BOX 1129  
TINLEY PARK, IL 60477

**INVOICE**

DATE	INVOICE #
8/31/2009	2009-181

**BILL TO**

BJC HEALTHCARE  
ATTN: HOWARD D RABE, PROJECT ENGINEER  
PROJECT MANAGEMENT  
1537 LARKIN WILLIAMS ROAD  
FENTON, MO 63026

**PICK-UP LOCATION / CONTACT**

CHRISTIAN HOSPITAL  
ATTN: HOWARD RABE  
11133 DUNN ROAD  
ST. LOUIS, MO 63136

P O. NUMBER	TERMS	DUE DATE	FEIN #	ACCOUNT #	
Q09-165	Net 30	9/30/2009	36-2652895	61694	
SERVICED	DESCRIPTION	TRACKING #	QUANTITY	RATE	AMOUNT
8/20/2009	DISPOSAL DEPLETED	09-0217 DU	1	2,600.00	2,600.00
	URANIUM/10-GAL.				
	HEALTH PHYSICS TECHNICIAN			500.00	500.00
	LABOR				
	TRANSPORTATION CHARGES			548.40	548.40
WE WOULD LIKE TO THANK YOU FOR YOUR BUSINESS!					

Make checks payable to:  
ADCO SERVICES, INC.  
P O. Box 1129, Tinley Park, IL 60477 708-429-1660

<b>Subtotal</b>	<b>\$3,648.40</b>
<b>Sales Tax (0.0%)</b>	<b>\$0.00</b>
<b>TOTAL DUE</b>	<b>\$3,648.40</b>

TERMS: This account is subject to finance charges of 1 1/2% per month (18% annum) of the unpaid balance when the invoice becomes 30 days past due with a minimum finance charge of \$5.00. Account will be placed for collection when the invoice becomes 60 days past due and will be subject to an additional \$25.00 collections fee. If any collection action is necessary we agree to pay Adco Services, Inc. all of the costs in this collection, including, but not by way of limitation, attorney's fees, filing and service fees and court costs, whether or not the action proceeds to judgement and collection charges.

**QUESTIONS ABOUT YOUR BILL? PLEASE VISIT [WWW.ADCOSERVICES.COM](http://WWW.ADCOSERVICES.COM)**

## Attachment 3

BJC HealthCare™

Clinical Engineering

Facility  
ProjectsWork Order #  
3210

Name: Howard Rabe

AIME

Requester	Contact Info/WO Ref	Date	Time	WO Status	WO Type
Howard Rabe		0 2 / 0 4 / 0 9		IW	EC

Cost Center	Christian Hospital NE	Location	Radiation Oncology
Employee Assigned to	Howard Rabe	Service Department	Project Team
Tag Number	PJ020409A	Description	Site ID#
Manufacturer	N/A	Model	Serial
Problem: Remove depleted uranium from Varian 6/100 unit located at Christian Hospital NE			

Failure Code: \_\_\_\_\_

Vendor FSR: \_\_\_\_\_

Employee	Response	Action	Hours	Date Done	Time Out
Employee				/ /	
Employee				/ /	
Employee				/ /	

Notes: Please provide REQ# only. Thank you!

<b>Purchase Order Requester Information</b> PO Number: _____ Requester Name: Howard Rabe Requester Phone: 677-0243 Date: 02/04/09 FAX: _____	<b>Vendor Information</b> OEM <input type="checkbox"/> 2 <sup>nd</sup> Source <input checked="" type="checkbox"/> Vendor Name: Adco Services Contact Name: Robert Bassett Phone: 708-429-1660 FAX: _____	<b>Shipping Info:</b> (Required for parts & service purchases) Deliver To: _____ Insurance Amount: _____ Courier <input type="checkbox"/> Overnight <input type="checkbox"/> Rush <input type="checkbox"/> Routine <input type="checkbox"/>
<b>PARTS &amp; PURCHASES – LINE ITEM DETAIL:</b> (P) PURCHASE PARTS OR SERVICES (FOR THIS WORK ORDER) (S) INSTALL FROM STOCK (FOR THIS WORK ORDER) (PS) PURCHASE STOCK (NOT FOR THIS WORK ORDER)		<b>Special Instructions:</b> _____ Approvals _____ Date/Time _____ Manager _____

(P, S, OR PS)	QTY	UNIT	PART NUMBER	ITEM DESCRIPTION	ACCOUNT # - COST CENTER#	UNIT PRICE
P	1	JOB	Removal & Disposal of	Depleted Uranium	570020 - 0235210	\$3,873.40

Clinical Engineering

Facility  
ProjectsWork Order #  
3210

Name: Howard Rabe



Requester	Contact Info/WO Ref	Date	Time	WO Status	WO Type
Howard Rabe		02/04/09		IW	EC

Cost Center	Location
Christian Hospital NE	Radiation Oncology

Employee Assigned to	Service Department
Howard Rabe	Project Team

Tag Number	Description	Site ID#
PJ020409A		

Manufacturer	Model	Serial
N/A		

Problem
Removal of Varian 6/100 unit from Christian Hospital NE

Failure Code: \_\_\_\_\_

Vendor FSR: \_\_\_\_\_

Employee	Response	Action	Hours	Date Done	Time Out
_____	_____	_____	_____	____/____/____	_____
Employee	Response	Action	Hours	Date Done	Time Out
_____	_____	_____	_____	____/____/____	_____
Employee	Response	Action	Hours	Date Done	Time Out
_____	_____	_____	_____	____/____/____	_____

Notes: Please provide REQ# only. Thank you!

**Purchase Order Requester Information**

PO Number: \_\_\_\_\_  
 Requester Name: Howard Rabe  
 Requester Phone: 677-0243  
 Date: 02/04/09 FAX: \_\_\_\_\_

**Vendor Information**

OEM ☐ 2<sup>nd</sup> Source ☒  
 Vendor Name: American Xray Equipment  
 Contact Name: Chaz T. Beadling  
 Phone: 301-697-3694  
 FAX: \_\_\_\_\_

**Shipping Info:** (Required for parts & service purchases)

Deliver To: \_\_\_\_\_  
 Insurance Amount: \_\_\_\_\_  
 Courier ☐ Overnight ☐  
 Rush ☐ Routine ☐

**PARTS & PURCHASES – LINE ITEM DETAIL:**

(P) PURCHASE PARTS OR SERVICES (FOR THIS WORK ORDER)  
 (S) INSTALL FROM STOCK (FOR THIS WORK ORDER)  
 (PS) PURCHASE STOCK (NOT FOR THIS WORK ORDER)

**Special Instructions:** \_\_\_\_\_

Approvals:  
 Manager \_\_\_\_\_

Date/Time \_\_\_\_\_

(P, S, OR PS)	QTY	UNIT	PART NUMBER	ITEM DESCRIPTION	ACCOUNT # - COST CENTER#	UNIT PRICE
P	1	JOB	Removal & Disposal of	Varian 6/100	570020 - 0235210	\$10,000.00

IS FLM-004-01 (9/91)

STATE OF ILLINOIS  
ILLINOIS EMERGENCY MANAGEMENT AGENCY  
DIVISION OF NUCLEAR SAFETY  
1035 OUTER PARK DRIVE  
SPRINGFIELD, ILLINOIS 62704  
(217) 785-9947

## RADIOACTIVE MATERIAL LICENSE

in accordance with the Illinois Radiation Protection Act and the rules and regulations in 32 Illinois Administrative Code promulgated thereunder and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess and transfer radioactive material(s) listed herein, and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Agency now or hereafter in effect and to any conditions specified in the license.

LICENSEE

DCO Services, Inc.  
7650 Duvan Drive  
Springfield Park, IL 60477

LICENSE NUMBER

IL-01347-01

EXPIRATION DATE

June 30, 2008

AMENDMENT NUMBER

33

Attention: James P. Bell  
President

In accordance with letter with attachments dated April 21, 2008, License Number IL-01347-01 is amended in its entirety. Previous amendments are void.

M	RADIONUCLIDE	CHEMICAL and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT
.	Any NARM radionuclide with Atomic No. 1 through 105, inclusive	Any, as specified in the Authorized Use for License Schedule Item A.		10 Ci
.	Any byproduct radionuclide	Any, as specified in the Authorized Use for License Schedule Item B.		600 Ci
.	Source Material	Any, except gases or liquids		8,000 kg
.	Special Nuclear Material	Any, except gases or liquids	No combination Special Nuclear Material nuclides in a single package to exceed 15 grams per cubic foot of total volume	Pu 60g U-235 100g

\*Ci-microcurie, mCi-millicurie, Ci-Curie; MBq-Megabecquerel, GBq-Gigabecquerel, TBq-Terabecquerel, g-gram, µg-microgram, kg-kilogram

APPROVED BY

  
Charles G. Vinson, Acting Head of Radioactive Materials

47-1-1059

DATE

May 30, 2008

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Attachment 5

BJC Clinical Asset Management  
CHNE Linac Removal

AREA/DEPT	ROOM NUMBER	EQUIPMENT DESCRIPTION	MANUFACTURER	MODEL	VENDOR	New/ Reform/ Existing	CLASSIFY/EQUIP. PUR INCL IN (CONST. TEL/CDM)	QTY NEEDED	QTY EXISTING	QTY TO PURCHASE	ESTIMATED PRICE (EA)	TOTAL ESTIMATED PRICE	QUOTE #	PO DOLLARS	REMARKS	PO ISSUE DATE	PO NUMBER
INCIDENTALS	CONT	Contingency				New	INC	1	0	1	\$ -	\$ -		\$ -	3% of Equipment		
INCIDENTALS	LABOR	De-Installation Management Hourly Rate				New	INC	0	0	0	\$ 426.00	\$ -		\$ -			
INCIDENTALS	LABOR	Union Labor Hourly Rate, De- Installation				New	INC	0	0	0	\$ 80.00	\$ -		\$ -			
INCIDENTALS	LABOR	Remove Uranium from Linac	Adco Services		Adco Services	New	INC	1	0	1	\$ 3,873.40	\$ 3,873.40		\$ 3,873.40		01/29/09	REQ3210
INCIDENTALS	LABOR	Remove Linac	American X-Ray Equipment		American X- Ray Equipment	New	INC	1	0	1	\$ 7,500.00	\$ 7,500.00	Removal of Linac (06-04- 09)	\$ 7,500.00	American X-Ray Lowered Offer	02/25/09	0090017646
INCIDENTALS	LABOR	Dispose of depleted uranium collimator blocks	Adco Services		Adco Services	New	INC	1	0	1	\$ 3,548.40	\$ 3,548.40	BJC 2nd DU Quote	\$ 3,548.40		08/31/09	INV2009-181
INCIDENTALS	LABOR	Remove and re-install casework as necessary	Hedcorp		Hedcorp	New	INC	1	0	1	\$ 4,851.00	\$ 4,851.00	Linear Accelerator PGE	\$ 4,851.00			
INCIDENTALS	FREIGHT	Freight (FOB)				New	INC	0	0	0	\$ -	\$ -		\$ -	3% of Equipment		
INCIDENTALS	FREIGHT	Rigging				New	INC	0	0	0	\$ -	\$ -		\$ -			
INCIDENTALS	STORAGE	Storage & Delivery Costs				New	INC	0	0	0	\$ -	\$ -		\$ -	\$1.37 per sq. ft. month		
INCIDENTALS	LABOR	Installation Management Hourly Rate				New	INC	0	0	0	\$ 426.00	\$ -		\$ -			
INCIDENTALS	LABOR	Union Labor Hourly Rate - Installation				New	INC	0	0	0	\$ 80.00	\$ -		\$ -			
INCIDENTALS	LABOR	Plotter Expenses				New	INC	0	0	0	\$ 150.00	\$ -		\$ -			
INCIDENTALS	CE	Clinical Engineering Project Labor - Used	8/27/09			New	INC	40	0	40	\$ 48.17	\$ 963.40		\$ 963.40	Cost Center# 0235210 Acct # 570020		INC SPENT
INCIDENTALS	CE	Clinical Engineering Project Labor - Used	7/27/09			New	INC	1	0	1	\$ 963.40	\$ 963.40		\$ 963.40			INC SPENT
INCIDENTALS	INFLATION	Inflation				New	INC	0	0	0	\$ -	\$ -		\$ -	3% of Equipment		
LINAC		Linac	Varian	6100		Existing	EDU	1	1	0	\$ -	\$ -		\$ -			
Total											\$ 21,839.60						