

Terrance Alexander, Executive Director

September 1, 2015

U.S. Nuclear Regulatory Commission, Region III
Materials Licensing Branch
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

**RE: License Termination Request
University of Michigan
Materials License No. 21-00215-06 / Docket No. 030-06958**

Licensing Branch:

The University of Michigan (U-M) is requesting termination of the cobalt-60 wet storage facility license (Materials License 21-00215-06). The cobalt-60 sources were shipped off campus by Idaho National Laboratory (INL) personnel working in conjunction with the Los Alamos National Laboratory (LANL) / Offsite Source Recovery Program (OSRP) on June 16, 2015.

The Department of Energy (DOE) through National Nuclear Security Administration (NNSA) contractor Los Alamos National Security, LLC (LANS) authorized the U-M to transfer the cobalt-60 sealed sources to the LANS support subcontractor: Southwest Research Institute. The U-M relinquished all rights, title and ownership/custody of the sealed sources to DOE/NNSA/Southwest Research Institute in furtherance of the OSRP prior to LANS shipping the sources off campus to the Southwest Research Institute on June 16, 2015. LANS accepted the sealed sources on behalf of DOE/NNSA upon the execution of the loading of the cobalt-60 sources into a certified transportation container observed by a representative of the OSRP/LANS. Refer to the enclosed Authorization to Transfer/Relinquishment of Ownership/Custody form (ATRO #2015:59).

Representatives from the Nuclear Regulatory Commission (Region III) observed the handling, packaging, and shipment of the cobalt-60 sealed sources at the U-M on June 16, 2015.

Please find enclosed a completed NRC Form 314 (Certificate of Disposition of Materials) to terminate Materials License No. 21-00215-06.

In addition, please find enclosed the leak test results taken of the cobalt-60 well water prior to the shipment of the cobalt-60 sources off campus (June 4, 2015) and shortly after the shipment of the cobalt-60 sources off campus (June 19, 2015). The cobalt-60 well water samples were analyzed using a calibrated HPGe gamma spectroscopy system at the U-M. No residual radioactivity was identified in the two samples. Historical leak test records indicate that there had never been any evidence of residual cobalt-60 residual radioactivity identified within the cobalt-60 storage pool well water. In addition, there had never been any indication of residual radioactivity in the ion exchange resin filter system that was monitored on a continuous basis in accordance with 10 CFR 36.59(b).

RECEIVED SEP 04 2015

Thank you for your time and consideration with respect to this license termination request. Please do not hesitate to contact me at Radiation Safety Service / OSEH [(734) 647-2251 or 764-6200] should you have any questions or comments regarding this correspondence.

Sincerely,



Mark L. Driscoll
Director / Radiation Safety Service
Radiation Safety Service / OSEH

Enclosures:

- (1) NRC Form 314 (Certificate of Disposition of Materials)
- (2) LANL/OSRP Authorization to Transfer/Relinquishment of Ownership/Custody (ATRO #2015:59)
- (3) LANL/OSRP Correspondence to Cynthia Pederson / NRC - Region III (June 23, 2015)
- (4) Leak Test Records (June 4 and June 19, 2015)

MLD/mld
NRCCo60LicenseTermination090115.docx

cc: Terry Alexander, Executive Director, Occupational Safety & Environmental Health
Robert Blackburn, Facility Manager, Michigan Memorial Phoenix Project & Nuclear Engineering Lab
Robert Gattone, Senior Health Physicist, NRC Materials Inspection Branch
Ruthann Nichols, Ph.D., Chair, Radiation Policy Committee
Toye Simmons, Health Physicist, NRC Materials Licensing Branch
Materials License No. 21-00215-06 Files



CERTIFICATE OF DISPOSITION OF MATERIALS

Estimated burden per response to comply with this mandatory collection request: 30 minutes. This submittal is used by NRC as part of the basis for its determination that the facility is released for unrestricted use. Send comments regarding burden estimate to the FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0028), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE NAME AND ADDRESS

University of Michigan
Radiation Safety Service / OSEH
1239 Kipke Drive, Room 1500
Ann Arbor, MI 48109-1010

LICENSE NUMBER

21-00215-06

DOCKET NUMBER

030-06958

LICENSE EXPIRATION DATE

November 30, 2015

A. LICENSE STATUS (Check the appropriate box)

- This license has expired.
- This license has not yet expired; please terminate it.

B. DISPOSAL OF RADIOACTIVE MATERIAL

(Check the appropriate boxes and complete as necessary. If additional space is needed, provide attachments)

The licensee, or any individual executing this certificate on behalf of the licensee, certifies that:

- 1. No radioactive materials have ever been procured or possessed by the licensee under this license.
- 2. All activities authorized by this license have ceased, and all radioactive materials procured and/or possessed by the licensee under this license number cited above have been disposed of in the following manner:
 - a. Transfer of radioactive materials to the licensee listed below:
Frank Cocina, Los Alamos National Laboratory, Offsite Source Recovery Project, P.O. Box 1663, MS E539, Group NEN-3, Los Alamos, NM 87545 [(505)667-5822 or 667-4711]
 - b. Disposal of radioactive materials:
 - 1. Directly by the licensee:
 - 2. By licensed disposal site:
 - 3. By waste contractor:
- c. All radioactive materials have been removed such that any remaining residual radioactivity is within the limits of 10 CFR Part 20, Subpart E, and is ALARA.

C. SURVEYS PERFORMED AND REPORTED

- 1. A radiation survey was conducted by the licensee. The survey confirms:
 - a. the absence of licensed radioactive materials
 - b. that any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.
- 2. A copy of the radiation survey results:
 - a. is attached; or b. is not attached (Provide explanation); or c. was forwarded to NRC on: _____ Date
- 3. A radiation survey is not required as only sealed sources were ever possessed under this license, and
 - a. The results of the latest leak test are attached; and/or
 - b. No leaking sources have ever been identified.

The person to be contacted regarding the information provided on this form:

NAME	TITLE	TELEPHONE (Include Area Code)	E-MAIL ADDRESS
Mark L. Driscoll	Director / Radiation Safety Officer	(734) 764-6200	drisc@umich.edu

Mail all future correspondence regarding this license to:

Occupational Safety & Environmental Health, Radiation Safety Service, University of Michigan, Campus Safety Services Building, 1239 Kipke Drive, Ann Arbor, Michigan 48109-1010

C. CERTIFYING OFFICIAL

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE	SIGNATURE	DATE
Mark L. Driscoll		08/31/15

WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECT. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

ATRO # 2015:59

Off-Site Source Recovery Project
Authorization to Transfer/Relinquishment of Ownership/Custody

SOURCE OWNER: University of Michigan TELEPHONE: 734-763-9057
 LICENSE: MI - Region III FAX: 734-763-4600
 No.: 21-00215-04
 CONTACT NAME: Stuart Berry
 ADDRESS: CSSB
 1239 Kipke Dr
 Ann Arbor, MI 48109-1010

Pursuant to its authority under the Atomic Energy Act, the U.S. Department of Energy (DOE) National Nuclear Security Administration (NNSA) has directed Los Alamos National Security, LLC (LANS), to recover and store excess, unwanted, abandoned, orphan radioactive sealed sources and other radioactive material sources on behalf of DOE/NNSA.

LANS has determined that the sealed source(s) identified below meet the requirements of the Los Alamos National Laboratory Off-Site Source Recovery Project and, on behalf of DOE/NNSA, authorizes University of Michigan to transfer the sealed source(s) to the following designated LANS support subcontractor: Southwest Research Institute.

University of Michigan affirms it is the owner/custodian of the sealed source(s) identified below, and hereby irrevocably relinquishes all rights, title and ownership/custody in the sealed source(s) to DOE/NNSA in furtherance of the OSRP. LANS accepts the sealed sources on behalf of DOE/NNSA, pursuant to DOE/NNSA contract no. DE-AC52-06NA25396, upon the execution of the loading of the sources into a certified transportation container observed by a representative of the OSRP/LANS.

SOURCE INFORMATION

Isotope:	Mfr/Model:	Serial No.:	SFC No.:	Original Curies (Date):	Decayed Curies (Date):
60Co	NP/NPRP-330-14-K	NPI-96-201		2.660E+03 (9/1/96)	2.264E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-202		2.850E+03 (9/1/96)	2.426E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-203		2.800E+03 (9/1/96)	2.383E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-204		2.770E+03 (9/1/96)	2.358E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-205		2.770E+03 (9/1/96)	2.358E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-206		2.720E+03 (9/1/96)	2.315E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-207		2.610E+03 (9/1/96)	2.221E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-208		2.660E+03 (9/1/96)	2.264E+02 (5/21/15)
60Co	NP/NPRP-330-14-K	NPI-96-209		2.690E+03 (9/1/96)	2.289E+02 (5/21/15)

SOURCE OWNER:
 OFFICIAL NAME/TITLE: MARK L. DRISCOLL
NAME (Please Print or Type)
 SIGNATURE *Mark L. Driscoll*

RADIATION
SAFETY OFFICER
TITLE (Please Print or Type)
 DATE 05/27/15

LANS AUTHORIZATION:
 OFFICIAL NAME/TITLE: Team Leader, Off-Site Source Recovery Project
 SIGNATURE *[Signature]*

DATE 6/3/15

ACKNOWLEDGEMENT OF RECEIPT BY DESIGNATED OSRP REPRESENTATIVE:
 OFFICIAL NAME/TITLE: Frank C. Casna
NAME (Please Print or Type)
 SIGNATURE *[Signature]*

OSRP Team Member (Name)
TITLE (Please Print or Type)
 DATE 6/16/2015



International Threat Reduction, Group NEN-3
Off-Site Source Recovery Project (OSRP)
P.O. Box 1663, Mail Stop: E539
Los Alamos, New Mexico 87545
505-667-4711/Fax: 505-665-7913

Date: June 23, 2015
Refer to: NEN-3:15-087

Cynthia D. Pederson
Regional Administrator
U.S. NRC Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Re: ATRO 2015:59 License: MI-21-00215-04

Dear Mrs. Cynthia D. Pederson:

Enclosed please find a signed *Authorization to Transfer/Relinquishment of Ownership* form concerning:

University of Michigan
Department of Radiation Safety, OSEH
CSSB
1239 Kipke Dr.
Ann Arbor, MI 48109-1010

The radioactive sources described on the form have been removed from University of Michigan, Ann Arbor, MI and are in storage at Southwest Research Institute, San Antonio, TX. The sources have been transferred to Department of Energy (DOE) ownership and are being stored under DOE license exemption.

This action was completed as part of the Off-Site Source Recovery Project (OSRP) managed by this office. If you need any further information on this action, please contact the OSRP Office at 505/667-4711.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Cristy Abeyta'.

Cristy Abeyta,
OSRP Team Leader

CA/TW

Cy: Stuart Berry, University of Michigan
Temeka Taplin, DOE, NA-211
NEN3/OSRP File, MS: E539

* G A M M A S P E C T R U M A N A L Y S I S *

File name: C:\GENIE2K\CAMFILES\Co-60 Source\2015Jun04_Co60_H2O.CNF

Report Generated On : 6/4/2015 5:09:31 PM

Sample Title : Co-60 Leak Test
Sample Description : Co-60 Well H2O
Sample Identification : Co60 Leak Test
Sample Type : H2O
Sample Geometry : 500ml

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 1 - 8192
Peak Area Range (in channels) : 33 - 8192
Identification Energy Tolerance : 1.000 FWHM

Sample Size : 1.000E+000 500ml

Sample Taken On : 6/4/2015 2:50:00 PM
Acquisition Started : 6/4/2015 2:56:53 PM

Live Time : 5000.0 seconds
Real Time : 5000.1 seconds

Dead Time : 0.00 %

Energy Calibration Used Done On : 5/31/2015
Efficiency Calibration Used Done On : 6/4/2015
Efficiency ID : D264 500ml 1g/cc

Co-60 not detected

< 3.2E-5 μ Li/500 ml

6/4/15

[Signature]

*Jam
6/18/2015*

 ***** P E A K A N A L Y S I S R E P O R T *****
 ** *****

Detector Name: HPGE
 Sample Title: Co-60 Leak Test
 Peak Analysis Performed on: 6/4/2015 5:05:37 PM
 Peak Analysis From Channel: 33
 Peak Analysis To Channel: 8192

Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	FWHM (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
1	553-	562	556.96	185.67	1.12	2.51E+001	9.56	2.39E+001

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet

Errors quoted at 1.000 sigma

John
 6/8/2015

 ***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****
 ** *****

Sample Title: Co-60 Leak Test
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Libraries\Co60_leak_

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/500m)	Activity Uncertainty
--------------	---------------	--------------	-----------	---------------------	----------------------

* = Energy line found in the spectrum.
 Energy Tolerance : 1.000 FWHM
 Nuclide confidence index threshold = 0.30
 Errors quoted at 1.000 sigma

***** U N I D E N T I F I E D P E A K S *****

Peak Locate Performed on: 6/4/2015 5:05:23 PM
 Peak Locate From Channel: 1
 Peak Locate To Channel: 8192

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
1	185.67	3.6116E-004	574.27		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet

Errors quoted at 1.000 sigma

John
 6/8/2015

 ***** B A C K G R O U N D S U B T R A C T R E P O R T *****

Detector Name: HPGE
 Sample Title: Co-60 Leak Test
 Peak Analysis Performed on: 6/4/2015 5:05:23 PM

Env. Background File: C:\GENIE2K\CAMFILES\Co-60 Source\2015Ju

Peak No.	Energy (keV)	Original Area	Orig. Area Uncert.	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	185.67	2.51E+001	9.56	2.33E+001	4.03E+000	1.81E+000	1.04E+001

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet

Errors quoted at 1.000 sigma

Jmm
 6/8/2015

 ***** N U C L I D E M D A R E P O R T *****
 ** *****

Detector Name: HPGE
 Sample Geometry: 500ml
 Sample Title: Co-60 Leak Test
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Libraries\Co60_leak_

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (uCi/500m)	Nuclide MDA (uCi/500m)	Activity (uCi/500m)
CO-60	1173.24	99.90	3.1391E-005	3.14E-005	3.1904E-006
	1332.50	99.98	4.4686E-005		8.8694E-006

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = Calculated MDA is zero due to zero counts in the region, or the region is outside the spectrum, or has not been calculated
- @ = Half-life too short to be able to perform the decay correction

JGM
 6/8/2015

Filename: HPGE

Report Generated On : 6/19/2015 1:40:24 PM
Sample Title : Co-60 water post rod removal
Sample Description : 500 ml nalgene
Sample Identification : 6 17 Co60 Empty
Sample Type : water
Sample Geometry : 500ml

Peak Locate Threshold : 3.00
Peak Locate Range (in channels) : 1 - 8192
Peak Area Range (in channels) : 33 - 8192
Identification Energy Tolerance : 1.000 FWHM

Sample Size : 1.000E+000 bottle

Sample Taken On : 6/17/2015 1:25:00 PM
Acquisition Started : 6/17/2015 1:36:25 PM

Live Time : 5000.0 seconds
Real Time : 5000.1 seconds

Dead Time : 0.00 %

Energy Calibration Used Done On : 5/31/2015
Efficiency Calibration Used Done On : 6/4/2015
Efficiency ID : D264 500ml 1g/cc

< 0.005 µCi

OKay

6-19-15

JMM

6/29/2015

 ***** N U C L I D E I D E N T I F I C A T I O N R E P O R T *****

Sample Title: Co-60 water post rod removal
 Nuclide Library Used: C:\GENIE2K\CAMFILES\Libraries\Co60_leak_

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield (%)	Activity (uCi/bott)	Activity Uncertainty
--------------	---------------	--------------	-----------	---------------------	----------------------

* = Energy line found in the spectrum.
 Energy Tolerance : 1.000 FWHM
 Nuclide confidence index threshold = 0.30
 Errors quoted at 1.000 sigma

***** U N I D E N T I F I E D P E A K S *****

Peak Locate Performed on: 6/19/2015 1:28:31 PM
 Peak Locate From Channel: 1
 Peak Locate To Channel: 8192

Peak No.	Energy (keV)	Peak Size in Counts per Second	Peak CPS % Uncertainty	Peak Type	Tol. Nuclide
1	77.03	3.4912E-003	45.05		
2	92.50	-1.3070E-002	-21.57		
3	185.77	-8.4407E-003	-30.28		
4	294.32	1.1765E-004	998.93		
5	321.62	1.5656E-003	61.65		
6	351.42	-2.9957E-004	-516.28		
7	481.93	6.2222E-004	125.72		
8	511.27	-2.7851E-004	-727.49		
9	609.04	1.6566E-003	72.57		XE-135 BI-214

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet

Errors quoted at 1.000 sigma

```

*****
*****          N U C L I D E   M D A   R E P O R T          *****
*****

```

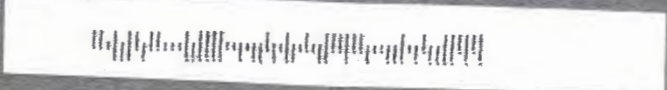
```

Detector Name:      HPGE
Sample Geometry:    500ml
Sample Title:       Co-60 water post rod removal
Nuclide Library Used: C:\GENIE2K\CAMFILES\Libraries\Co60_leak_

```

Nuclide Name	Energy (keV)	Yield (%)	Line MDA (uCi/bott)	Nuclide MDA (uCi/bott)	Activity (uCi/bott)
CO-60	1173.24	99.90	3.8773E-005	3.88E-005	2.2259E-005
	1332.50	99.98	4.6376E-005		-1.7985E-005

- + = Nuclide identified during the nuclide identification
- * = Energy line found in the spectrum
- > = Calculated MDA is zero due to zero counts in the region, or the region is outside the spectrum, or has not been calculated
- @ = Half-life too short to be able to perform the decay correction



UNITED STATES POSTAL SERVICE Metroplex MI 480 ZIP

USPS TRACKING #



9114 9999 4431 3739 4850 15

Label uses Intell Mail Barcode™

016H26515549

\$02.540

0970212045

Mailed From 48109

U.S. POSTAGE

M UNIVERSITY OF MICHIGAN 163600

OCCUPATIONAL SAFETY AND ENVIRONMENTAL HEALTH
 CAMPUS SAFETY SERVICES BUILDING
 1299 KEEPE DRIVE
 ANN ARBOR, MICHIGAN 48109-1010

**U.S. Nuclear Regulatory Commission, Region III
 Materials Licensing Branch
 2443 Warrenville Road, Suite 210
 Lisle, Illinois 60532-4352**

RECEIVED SEP 04 2015