Cardinal Health
Nuclear Pharmacy Services
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CardinalHealth

July 18, 2008

Sandy F. Frazier
U.S. Nuclear Regulatory Commission
Region III – Division of Nuclear Materials Safety
2443 Warrenville Rd, Suite 210
Lisle, IL 60532-4352

RE: Amendment Request for License #34-29200-01MD, Control # 317201, Cardinal Health, Glastonbury, CT.

Ms. Frazier,

As per the phone conversation between Ms. Hueter and Mr. Regits, and as follow-up to the letter dated May 22, 2008, Cardinal Health, Nuclear Pharmacy Services (Cardinal Health), is submitting a revised decommission report. Please amend the above referenced license to release for unrestricted use the facility located at 628 Hebron Ave., Blg. 4, Glastonbury, CT 06033. The facility has been cleaned and all sources of radioactive materials were removed from the area prior to the commencement of decommission surveys. Please see the attached report.

Please contact me at 614.757.3147 with any questions regarding this request.

Sincerely,

Willie Regits, Ph.D.
Director, Health Physics
Nuclear Pharmacy Services

/cw

CC: Matthew Svejk, RSO, Loc. 13
License File 13(3)

Encl: Restricted Area Decommissioning Report

Facility and Operations

The nuclear pharmacy licensed by the NRC resided at the location listed below. Use of radioactive materials was conducted under the license referenced below.

Pharmacy Location: 628 Hebron Rd
Glastonbury, CT 06033

Radioactive Materials License: 34-29200-01MD

Sources of Radiation

The information presented below addresses the requirements presented by your office in 10 CFR 30.36 and NUREG 1757.

1. Please see Attachment C for the *Certificate of Disposition of Radioactive Materials.*

2. The facility used radioactive materials for nuclear pharmacy operations and instrument calibrations or constancy checks. The facility ceased using the materials on April 7, 2008. Sealed sources were transferred to another facility on the same RAM License, located at 131 Hartland St, East Hartford, CT 06108, prior to the decommissioning surveys. Radioactive waste was either decayed or transferred to a certified waste broker prior to the decommissioning surveys.

3. The table below lists all isotopes used at the facility over the span of the licensed activities, and includes the date of last use for each.

Isotope	Date Last Handled	Physical Form (S, G, L or Sealed)	Quantities (uCi, mCi or Ci)
Barium-133	4/4/08	Sealed	115 uCi
Cesium-137	4/4/08	Sealed	150 uCi
Chromium-51	4/4/08	L	1 mCi
Cobalt-57	4/4/08	Sealed	9 nCi
Gallium-67	4/4/08	L	25 mCi
Indium-111	4/4/08	L	20 mCi
Iodine-123	4/3/08	S	5 mCi
Iodine-125	4/14/05	S	1 mCi
Iodine-131	4/5/08	L	2 Ci
Molybdenum-99	4/5/08	S	75 Ci
Samarium-153	4/3/08	L	75 mCi
Technetium-99m	4/5/08	L	60 Ci
Thallium-201	4/4/08	L	30 mCi
Xenon-133	4/4/08	G	2 Ci
Yttrium-90	2/19/08	L	50 mCi

There have been no major radiological spills of any licensed material (e.g., greater than 100 mCi of Tc-99m or 1 mCi of I-131) requiring assistance in clean-up and monitoring from persons other then the user.

During the life of the license, no sealed sources have been determined to be leaking.

Surveys and Monitoring

Surveys were conducted in both the restricted and unrestricted areas. All surfaces were surveyed for contamination in the restricted areas. Wipe tests for removable contamination were taken over a 100 cm^2 area every square meter in the restricted areas. In the unrestricted area, wipes and contamination surveys were taken on a larger grid and in areas of most probability for finding contamination (e.g., door handles, walkways from the restricted areas, etc.). The locations are identified on the diagram in Attachment A.

Contamination surveys were taken with the instrument listed below. Wipes were taken dry, unless otherwise indicated, with absorbent paper. Each wipe was counted on the analytical detector listed below. Operating specifications, efficiencies, and minimum detectable activities are also provided below.

EQUIPMENT		
Surveys	Make and Model of Survey Meter	**Ludlum 14C**
	Serial Number	**168130**
	Last Calibration Date	**2/6/2008**
	Background	**0.03 mR/hr or 50 cpm (44-38)**
	Make and Model Number of Probe	**Ludlum 44-38**
Wipes	Make and Model Number	**Spectrum Techniques UCS-20**
	Window (should be open, this is usually 20 to 400 keV)	**20-600**
	Efficiency of Well Counter (for I-131 or Ba-133 open window)	**92%**
	Date of Efficiency	**5/1/2008**
	Region of Interest (should be the same as for efficiency)	**20-600**
	Count Time	**1 minute**
	Background	**85 cpm**
	MDA (must be <200 dpm)	**47 dpm**

Please see Attachment A for the impacted area map with wipe test locations indicated.

Please see Attachment B for the results of the wipe test survey of the impacted area.

A reference background was established for the portable survey meter in the non-impacted area, where there is similar construction to the materials encountered the impacted area. This was determined to be 30 μR/hr for the facility.

Waste and RAM Disposition

A search for radioactive materials and radioactive waste was performed, resulting in none found. All materials were transferred to another licensee prior to the survey.

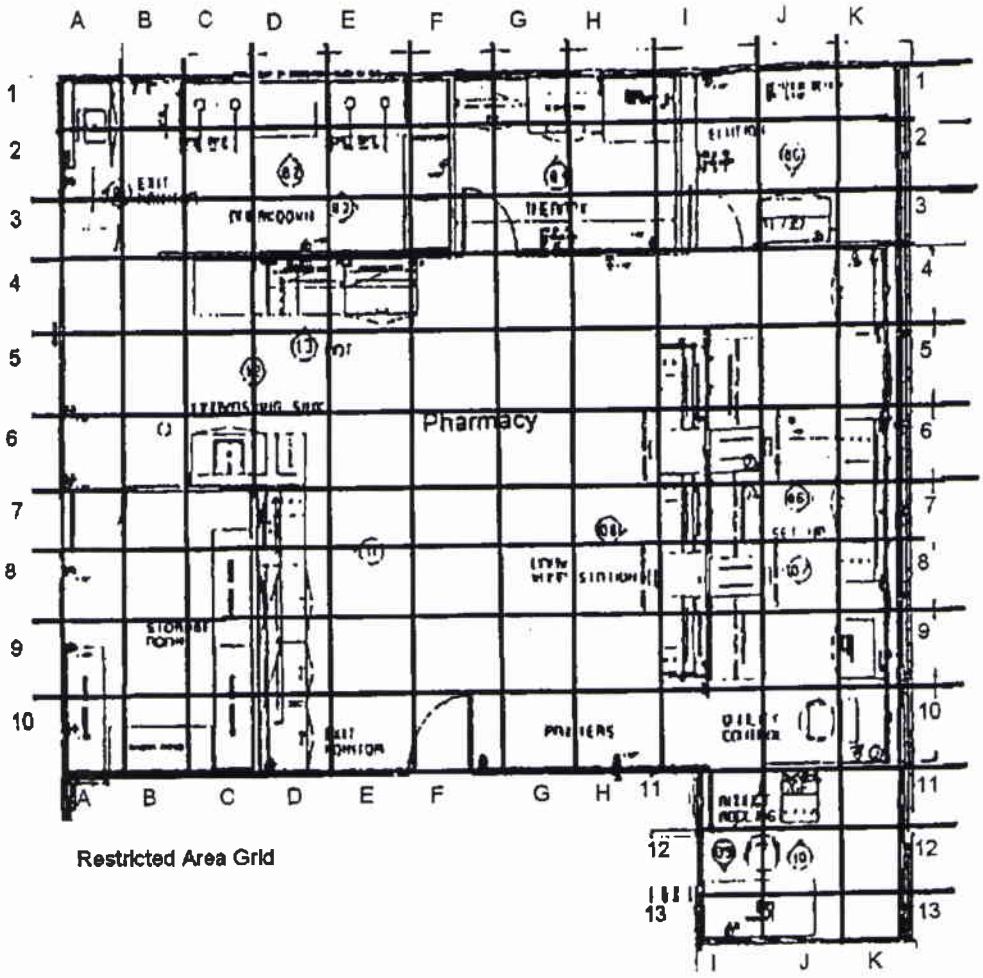
During the life of the license, no underground piping or sink/sewer piping was used for disposal of radioactive materials (*excluding excreta*).

Please see Attachment C for a copy the Certificate of Disposition of Radioactive Materials and Surveyor Certification.

Please see Attachment D for a copy of the packing list showing receipt of sealed sources by an authorized licensee.

ATTACHMENT A

Survey Map



Restricted Area Grid

ATTACHMENT B

Wipe Test Surveys Results

Unrestricted Area Wipes

MCA Serial Number: UCS-20
Efficiency Date: 05/01/08
Window: 20-600
Efficiency: 92.00% c/d for Ba-133
Count time (minutes): 1.0 minute
Background (cpm): 102 cpm
MDA (dpm): 51 dpm

0.05 mR/hr or 50 cpm

Area		Location (surveyed)	Area Survey (cpm)	Wipe (gross cpm)	Wipe (net cpm)	Wipe (dpm)	Status
Office	O1	Floor	50	86			OK
Office	O2	Floor	50	86			OK
Office	O3	Floor	50	86			OK
Office	O4	Floor	50	86			OK
Office	O5	Floor	50	86			OK
Office	O6	Floor	50	86			OK
Conf.	C1	Floor	50	84			OK
Conf.	C2	Floor	50	84			OK
Conf.	C3	Floor	50	84			OK
Hall	H1	Floor	50	82			OK
Hall	H2	Floor	50	82			OK
Hall	H3	Floor	50	82			OK
Vestibule	V1	Floor	50	82			OK
Vestibule	V2	Floor	50	82			OK
Lunch	LR1	Floor	50	87			OK
Lunch	LR2	Floor	50	87			OK
Hallway	HW	Floor	50	87			OK
Men's Room	MR	Floor	50	82			OK
Ladies Room	WR	Floor	50	82			OK
Manager	M1	Floor	50	87			OK
Supply	S1	Floor	50	87			OK
Suppy	S2	Floor	50	87			OK
Suppy	S3	Floor	50	87			OK

Restricted Area Wipes

MCA Serial Number: UCS-20
Efficiency Date: 05/01/08
Window: 20-600
Efficiency: 92.00% c/d for Ba-133
Count time (minutes): 1.0 minute
Background (cpm): 75 cpm
MDA (dpm): 44 dpm

Area or Item	Location surveyed	Area Survey (cm²)	Wipe (gross cpm)	Wipe (net cpm)	Wipe (dpm)	Status
Drawing Hoods	I5	Wall	50	85	[redacted]	OK
Drawing Hoods	I7	Wall	50	85	[redacted]	OK
Drawing Hoods	I9	Wall	50	85	[redacted]	OK
Blood Room	I11	Floor	50	86	[redacted]	OK
Blood Room	I12	Floor	50	86	[redacted]	OK
Blood Room	I13	Floor	50	86	[redacted]	OK
Blood Room	J11	Floor	50	86	[redacted]	OK
Blood Room	J12	Floor	50	86	[redacted]	OK
Blood Room	J13	Floor	50	86	[redacted]	OK
Blood Room	K11	Floor	50	83	[redacted]	OK
Blood Room	K12	Floor	50	83	[redacted]	OK
Blood Room	K13	Floor	50	83	[redacted]	OK
Storage	A7	Floor	50	102	[redacted]	OK
Storage	B7	Floor	50	102	[redacted]	OK
Storage	C7	Floor	50	102	[redacted]	OK
Storage	A8	Floor	50	102	[redacted]	OK
Storage	B8	Floor	50	102	[redacted]	OK
Storage	C8	Floor	50	102	[redacted]	OK
Storage	A9	Floor	50	79	[redacted]	OK
Storage	B9	Floor	50	79	[redacted]	OK
Storage	C9	Floor	50	79	[redacted]	OK
Storage	A10	Floor	50	79	[redacted]	OK
Storage	B10	Floor	50	79	[redacted]	OK
Storage	C10	Floor	50	79	[redacted]	OK
Gen. Room	I3	Floor	50	74	[redacted]	OK
Gen. Room	I2	Floor	50	74	[redacted]	OK
Gen. Room	I1	Floor	50	74	[redacted]	OK
Gen. Room	J2	Floor	50	74	[redacted]	OK
Gen. Room	J1	Floor	50	74	[redacted]	OK
Gen. Room	K3	Floor	50	74	[redacted]	OK
Gen. Room	K2	Floor	50	74	[redacted]	OK
Gen. Room	K1	Floor	50	74	[redacted]	OK
Waste	A10	Floor	50	86	[redacted]	OK
Waste	A2	Floor	50	86	[redacted]	OK
Waste	A3	Floor	50	86	[redacted]	OK
Waste	B10	Floor	50	86	[redacted]	OK
Waste	B2	Floor	50	86	[redacted]	OK
Waste	B3	Floor	50	86	[redacted]	OK
Waste	C10	Floor	50	86	[redacted]	OK
Waste	C2	Floor	50	86	[redacted]	OK
Waste	C3	Floor	50	86	[redacted]	OK
Waste	D1	Floor	50	86	[redacted]	OK
Waste	D2	Floor	50	86	[redacted]	OK

Location Map		Location Survey	Area Survey (cpm)	Wipe (gross count)	Wipe (net cpm)	Wipe (dpm)	Status
Waste	D3	Floor	50	86	[illegible]	[illegible]	OK
Waste	E1	Floor	50	86	[illegible]	[illegible]	OK
Waste	E2	Floor	50	86	[illegible]	[illegible]	OK
Waste	E3	Floor	50	86	[illegible]	[illegible]	OK
Iodine	F3	Floor	50	87	[illegible]	[illegible]	OK
Iodine	F2	Floor	50	87	[illegible]	[illegible]	OK
Iodine	F1	Floor	50	87	[illegible]	[illegible]	OK
Iodine	G3	Floor	50	87	[illegible]	[illegible]	OK
Iodine	G2	Floor	50	87	[illegible]	[illegible]	OK
Iodine	G1	Floor	50	87	[illegible]	[illegible]	OK
Iodine	H3	Floor	50	77	[illegible]	[illegible]	OK
Iodine	H2	Floor	50	77	[illegible]	[illegible]	OK
Iodine	H1	Floor	50	77	[illegible]	[illegible]	OK
Iodine	I3	Floor	50	77	[illegible]	[illegible]	OK
Iodine	I2	Floor	50	77	[illegible]	[illegible]	OK
Iodine	I1	Floor	50	77	[illegible]	[illegible]	OK
Inside Stack	St1	Stack	50	66	[illegible]	[illegible]	OK
Outer Stack	St2	Stack	50	66	[illegible]	[illegible]	OK
Lab	I4 TO K10	Floor	50	88	[illegible]	[illegible]	OK
Lab	F4 TO H10	Floor	50	101	[illegible]	[illegible]	OK
Lab	D4 TO E10	Floor	50	110	[illegible]	[illegible]	OK
Lab	A4 TO C6	Floor	50	93	[illegible]	[illegible]	OK

ATTACHMENT C

Certificate of Disposition of Materials

Surveyor Certification

NRC FORM 314 (7-2001)
10 CFR 30.35(d)(1); 40.42(d)(1); 70.38(d)(1); and 72.54(d)(1)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0028 EXPIRES: 07/31/2004

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 Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@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.

CERTIFICATE OF DISPOSITION OF MATERIALS

LICENSEE NAME AND ADDRESS	LICENSE NUMBER	DOCKET NUMBER
Cardinal Health 628 Hebron Ave, Bldg. 4, Glastonbury, CT 06033	34-29200-01MD	317201
	LICENSE EXPIRATION DATE: August 31, 2011	

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:

☒ 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
Matthew J. Sujk	RPh, PRSO	860-291-9027	matthew.sujk@cardinal.com

Mail all future correspondence regarding this license to:

D. CERTIFYING OFFICIAL

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

PRINTED NAME AND TITLE	SIGNATURE	DATE
Matthew J. Sujk RPh, PRSO		5/20/08

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.

Surveyor Certification

Surveyor: Matthew J. Svejk

R.Ph., PRSO
Authorized User, License No. 8749
Cardinal Health
Nuclear Pharmacy Services

Survey Location: 628 Hebron Ave. Bldg.4 Glastonbury, CT 06033

Survey Date: 5/13/08-5/15/08

Certification Statements:

1. All non-exempt radioactive material and waste was removed from the facility prior to performing the decommission surveys.
2. A gross search for radioactive material was performed and no material was present.
3. The background radiation levels measured at several locations in the non-impacted area of the facility measured 0.03 mR/hr, therefore the readings listed as "Survey gross mR/h" in the closeout survey data form are background at all locations measured in the impacted area of the facility.
4. The wipe test results on the Closeout Survey data sheet are shown in dpm per 100 cm^2. All wipe measurement results were less than the MDA and less than 200 dpm per 100 cm^2.

I certify the above data and statements to be true.

Print: Matthew J. Svejk Sign: _____ Date: 5/20/08

ATTACHMENT D

SEALED SOURCE TRANSFER LOG

DATE OF TRANSFER: 4/7/08

TRANSFER FROM: Cardinal Health NPS Location #13
628 Hebron Ave. Bldg 4 Glastonbury, CT 06033
License # 34-29200-01MD

TRANSFER TO: Cardinal Health NPS Location #13
131 Hartland St. East Hartford, CT 06108
License #34-29200-01MD

Nuclide	Type	Serial Number	Assay Activity	Assay Date	Current Activity (μCi)	Leak Test Date	Leak Test Results* (Pass/Fail)
Ba-133	Cartridge	408-8-5	0.54uCi	10/1/92	0.1915	Exempt	N/A
Ba-133	Vial	S358018-017	271uCi	10/26/94	110.92	5/23/08	Pass
Ba-133	Rod	S138s021-14	0.11uCi	12/8/95	0.0489	Exempt	N/A
Ba-133	Rod	780-39-43	5.15uCi	8/1/03	3.756	Exempt	N/A
Ba-133	Rod	1103-58-7	0.11uCi	9/1/05	0.008	Exempt	N/A
Co-57	Rod	S356024-020	212uCi	1/18/93	148.86	5/23/08	Pass
Cs-137	Vial	Nes-139s-032	0.11uCi	3/28/85	0.0622	Exempt	N/A

*Pass=Removable contamination less than 0.005 uCi.
All of the RAM was disposed of separately. Certificates of Receipts for the transfer of RAM are maintained at the new facility.

PETER SPOSATO
Signature

Pharmacy MANAGER
Title
RPh, BCNP