



The University of
Montana

Environmental Health and Risk Management
The University of Montana
Missoula, Montana 59812-9144
FAX: (406) 243-6452

November 5, 2009

US NRC Region IV
612 E. Lamar Blvd, Suite 400
Arlington, TX 76011-4125

Attention: Licensing Section

RE: Amendment request for License Number 25-01706-03, Docket No. 030-00872

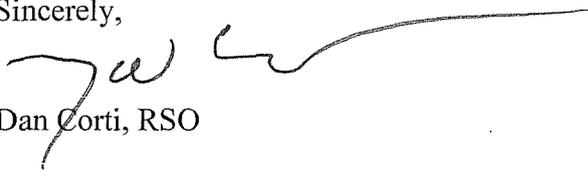
I am writing to request an amendment to the above referenced license Section 10 (A) as follows.

Please delete Section 10 (A) (3): St. Patrick Hospital and Health Sciences Center (rooms 3262, 3263, 3264 and 3276 at 554 West Broadway, Missoula, Montana.

The decommissioning surveys are complete and both the Radiation Safety Committee for the University of Montana and St. Patrick's Hospital and Health Sciences Center have approved removal of this suite of rooms from any further use of radioactive material under our license.

Thank you for your consideration of this request. Please let me know if I can provide any information by calling at 406-243-2881 or via email at dan.corti@mso.umt.edu .

Sincerely,


Dan Corti, RSO

RECEIVED

NOV 09 2009

DNMS

Browder, Rachel

From: Browder, Rachel
Sent: Wednesday, December 09, 2009 11:40 AM
To: 'Dan Corti'
Subject: Request for Additional Information
Attachments: Information that should be Submitted for Decommissioning Surveys.doc

Dan,

In order to continue our review of your request to remove St. Patrick Hospital and Health Sciences Center from your license, please review the attached request for additional information and provide a response within 30 days. If you have any questions, please let me know.

Sincerely,
Rachel

Rachel S. Browder, CHP

NRC, Region IV
Nuclear Materials Safety Branch B
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125
(817) 276-6552 (office) / (817) 860-8188 (fax)
email address: rachel.browder@nrc.gov

INFORMATION THAT SHOULD BE SUBMITTED
TO THE NRC STAFF FOR DECOMMISSIONING
OF LICENSED FACILITIES

The following information is needed from licensees who request authorization from the NRC for the release of a room, building or outdoor area for unrestricted use:

- 1) A list of the radiological isotopes that were actually used at the site based on the historical site assessment. To the extent possible (and reasonable), the quantities and dates of use of these isotopes should also be provided.
- 2) The physical form of each isotope, e.g., was the physical form a sealed source or was the isotope used in a loose form.
- 3) Information regarding major radiological spills of any licensed isotopes such as the location of the spill(s) and pertinent radiological information about the spill(s). (Major spills for the purposes of this document means a spill that resulted in off-site contamination or any other spill where more than minimal decontamination effort is required, e.g., spills requiring assistance in cleanup and monitoring from persons other than the user.)
- 4) Information on any leaking sealed source used or stored at the site being released, including isotope, amount of leakage, contamination of other areas or personnel, description of cleanup, and disposition of the source. If no sources were determined to be leaking at the facility, the licensee should state this fact.
- 5) The results of the licensee's final surveys as required by 10 CFR Parts 30.35(j)(2), 40.42(j)(2), 70.38(j)(2), and 72.54(l)(2). This includes submitting data in the following units: gamma radiation in units of mSv/hr (μ R/hr) at one meter from surfaces, radioactivity in units of MBq/100cm² (dpm/100cm²) (removable and fixed) for surfaces, MBq/ml (mCi/ml) for water, and Bq/g (pCi/g) for soils and concrete.
- 6) The survey instrumentation used for the final survey along with the certification that each instrument has been properly calibrated and tested and the minimum detectable activity (MDA) for each instrument. This information is needed for instruments used for measuring exposure rates and for those used for analysis of wipes, soil and water samples, etc.
- 7) Maps and/or drawings which clearly indicate the locations where wipes and fixed measurements were taken. If contaminated drain lines (or other buried and inaccessible pipes) are an issue, blueprints or drawings should be included that show the locations of the drain lines, including where they originate and end.
- 8) If other than minimal contamination efforts are necessary, both the before and after decontamination survey data should be provided as part of the final survey report, including the locations of these areas.
- 9) The release criteria used as a basis for demonstrating the site can be released for unrestricted use.

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Radiological isotopes were used at this location from May 17, 2004 until May 26, 2006. Dr. Poulsen remained in the lab until July of 2007 when the final contamination survey was completed on July 26, 2007. There were 4 orders placed for NET-581 Aspartic Acid H3 as follows:

May 17, 2004,	250 microcuries
August 9, 2004	1000 microcuries
October 15, 2005	250 microcuries
January 6, 2006	250 microcuries

During this period the highest amount on site in both waste and stock on hand was 1000 microcuries as orders were typically used and the waste shipped to the University of Montana main campus prior to ordering a new batch.

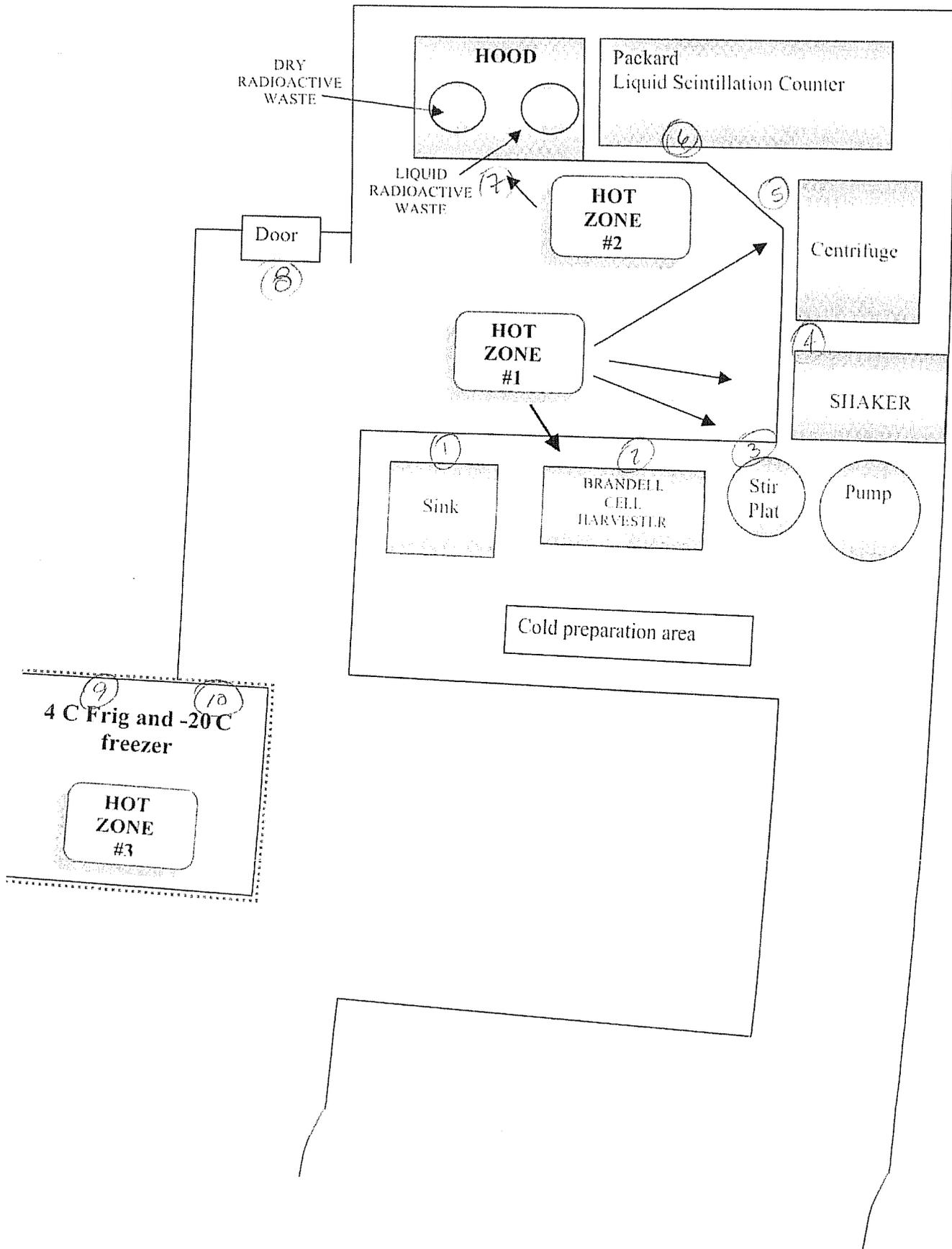
- 2) The physical form of each isotope, e.g., was the physical form a sealed source or was the isotope used in a loose form. The stock tritium was in an aqueous solute and further diluted into an aqueous solution for use in experiments. Ultimately, the tritium ended up as dry waste from marginally contaminated labware, in aqueous solution and in scintillation vials.
- 3) Information regarding major radiological spills of any licensed isotopes such as the location of the spill(s) and pertinent radiological information about the spill(s). (Major spills for the purposes of this document means a spill that resulted in off-site contamination or any other spill where more than minimal decontamination effort is required, e.g., spills requiring assistance in cleanup and monitoring from persons other than the user.) No spills were reported for this location.
- 4) Information on any leaking sealed source used or stored at the site being released, including isotope, amount of leakage, contamination of other areas or personnel, description of cleanup, and disposition of the source. If no sources were determined to be leaking at the facility, the licensee should state this fact. No sealed sources were used or stored at this location with the exception of that contained in the liquid scintillation counter. This LSC was a Beckman LS6500, Serial number 7068886 and was calibrated by Mike Dandy of Lab Performance Specialists on 06/12/2007 and annually thereafter with no leaks or performance issues noted.
- 5) The results of the licensee's final surveys as required by 10 CFR Parts 30.35(j)(2), 40.42(j)(2), 70.38(j)(2), and 72.54(l)(2). This includes submitting data in the following units: gamma radiation in units of mSv/hr (μ R/hr) at one meter from surfaces, Tritium was the only radioactive isotope used at this site so no dose rate was or could be measured above background at one meter from any surface. radioactivity in units of MBq/100cm² (dpm/100cm²) (removable and fixed) for surfaces, MBq/ml (mCi/ml) for

water, and Bq/g (pCi/g) for soils and concrete. Surface swipes for removable contamination show counts ranging from 135 to 250 dpm over a non-quantified area in excess of 100 centimeters squared (see discussion in (9) below) compared to reagent blank counts of 275 to 310 dpm (consistent with color quenching of dusty samples). Please see attached for print out of results in cpm.

- 6) The survey instrumentation used for the final survey along with the certification that each instrument has been properly calibrated and tested and the minimum detectable activity (MDA) for each instrument. This information is needed for instruments used for measuring exposure rates and for those used for analysis of wipes, soil and water samples, etc. A Beckman LS6500, Serial number 7068886 was used to count survey samples from the final contamination survey. This LSC was calibrated by Mike Dandy of Lab Performance Specialists on 06/12/2007 and annually thereafter with no leaks or performance issues noted. In conversation with Mike Dandy on December 16, 2009 he stated that as part of the calibration, he does not document minimum detection levels for an instrument. He did state that using Ecolume scint fluid, he obtained a 40% counting efficiency with unquenched samples (as we would run survey samples) and that depending on the scint fluid used, that efficiency would be accurate plus and minus 5%. While the Beckman LS6500 is programmable to provide results in dpm, the final samples were not run in that mode and instead were done as we normally do with results in cpm. MDA for this instrument then would be 40% plus and minus 5% of any tritium present.
- 7) Maps and/or drawings which clearly indicate the locations where wipes and fixed measurements were taken. If contaminated drain lines (or other buried and inaccessible pipes) are an issue, blueprints or drawings should be included that show the locations of the drain lines, including where they originate and end. Please see attached survey map.
- 8) If other than minimal contamination efforts are necessary, both the before and after decontamination survey data should be provided as part of the final survey report, including the locations of these areas. No decontamination efforts were necessary as part of this work.
- 9) The release criteria used as a basis for demonstrating the site can be released for unrestricted use. Our policy at the University of Montana is to regard removable contamination levels less than three times background compared to a reagent blank as non-contaminated. The logic in this is that our typical liquid scintillation counter has 40% efficiency for counting tritium. The specific Beckman LS6500 used to count the final swipes was found to have a 40% plus and minus 5% efficiency for counting unquenched samples for tritium (depending on the scintillation fluid used). Thus 100cpm may reflect an actual count of 250dpm. We encourage individuals doing swipes to wipe a large area (several hundred square centimeters) on flat surfaces and if elevated counts are noted, smaller areas are wiped to accurately provide contamination levels per known area (per 100 centimeters squared) Our swipe samples as noted were at or below reagent blank counts and as such, we considered this site as non-contaminated. This in conjunction with the fact that the maximum amount of H3 present on site in aggregate (not at one time) was only 1.75 millicuries or 1750 microcuries all of which was accounted for in waste disposal records led to the conclusion that this site could be used for any purpose without concern for previous radioisotope use.

Site Plan & Hot Zones:
Room 3262

MNIF Molecular Med. Lab St Pats
Poulsen Lab



26 JUL 2007 13:04

USER: 1

PRESET TIME : 1.00

DATA CALC : CPM

COUNT BLANK : NO

TWO PHASE : NO

SCINTILLATOR: LIQUID

LOW LEVEL : NO

COMMENT:

HH : YES

IC# : NO

AGC : NO

LUMEX : NO

HALF LIFE CORRECTION DATE: none

PRINTER : STD

REPLICATES : 1

CYCLE REPEATS : 1

DISK : OFF

ISOTOPE 1: 3H %ERROR: 0.00 FACTOR: 1.000000 BKS. SUB: 0

SAM NO	POS	TIME MIN	HH	CPM	%ERROR	LUMEX %	ELAPSED TIME
1	**	1.00	100.3	110.00	19.07	29.62	1.58
2	**	1.00	97.0	124.00	17.96	20.20	3.23
3	**	1.00	102.8	67.00	24.43	22.24	4.89
4	**	1.00	99.1	78.00	22.65	16.13	6.52
5	**	1.00	101.1	100.00	20.00	10.26	8.16
6	**	1.00	103.6	76.00	22.94	11.49	9.79
7	**	1.00	103.3	68.00	24.25	16.61	11.47
8	**	1.00	95.3	74.00	23.25	10.24	13.10
9	**	1.00	97.0	58.00	26.26	7.90	14.74
10	**	1.00	97.2	64.00	25.00	7.64	16.37
11	**	1.00	100.3	58.00	26.26	7.74	18.03
12	**	1.00	102.1	86.00	21.57	5.44	19.65

Blank