



# Children's Mercy HOSPITALS & CLINICS

www.childrensmc.org

## Department of Radiology

2401 Gillham Road

Kansas City, Missouri 64108

Phone: (816) 234-3273

Fax: (816) 983-6912

James C. Brown, MD

Department Chair

May 12, 2010

Nuclear Regulatory Commission  
Medical Licensing Division, Region III  
Attn: Michael Herr  
2443 Warrenville Road  
Lisle, IL 60532-4351

Dear Mr. Herr,

**This letter is in response to the requested additional information for control number 318692.** Please review the additional information to amend our Radioactive Materials License #24-15513-01 (Children's Mercy Hospital; 2401 Gillham Rd; Kansas City, MO 64108) as requested:

At this time, we will not continue with the request for Dr. Fickenscher to be added to our license. This will allow us time to continue discussions with our Radiation Safety Committee and determine the exact amount we wish to request as the possession limit for the 35.300 materials. We will also have time to collect the additional information needed to complete Dr. Fickenscher's preceptorship application properly and with the requested information from the broad scope licensee where she trained.

Below, you will find our responses to your questions:

In regard to your questions on the letter dated February 12, 2010 pertaining to the decommissioning, we have the following responses:

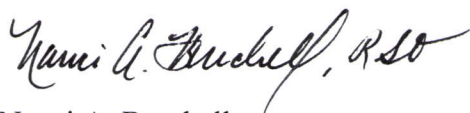
- A. The date the survey was performed is at the top of the close-out leak and area survey reports. It is **January 14, 2010**. However, in lieu of your other requests concerning this decommissioning, we re-wiped and surveyed all of the same areas on **May 6, 2010** and those results have been attached for your review. We decided to use a liquid scintillation counter for the wipes and a pancake probe for the area surveys as these instruments have a better efficiency for P-32.
- B. The last date that radioactive materials were used in this lab was **5-15-09**.

Brent E. Cully, MD  
Kristin A. Fickenscher, MD  
Emily D. Kucera, MD  
Lisa H. Lowe, MD  
Neil J. Mordis, DO  
Charlotte Waugh Moore, MD  
Frank P. Morello, MD  
David B. Nielsen, MD  
Douglas C. Rivard, DO  
Cynthia N.R. Taylor, MD  
Steven T. Welch, MD  
Timothy P. Zinkus, MD  
Corliss J. Panis, MBA, RT (R)  
Administrative Director

- C. The background measurement used, is listed on the close-out leak and areas survey reports. The background measurement for the wipes was **0 dpm** and for the area survey was **0-4uR/hr**. The new wipe and survey background measurements are also present in the same area. For the new wipe it is **0 dpm** and for the new area survey it is **0.02 to 0.03 mR/hr**.
- D. The efficiency for the wipe test liquid scintillation counter is **98.0 %** and for the Ludlum 14C pancake probe is **32%**.
- E. The action levels are listed on the paperwork as the **Result**. For the new area surveys, the action level was 0.05 mR/hr. There were no areas that exceeded this amount so no corrective action was necessary. The new action level for the area wipes was 20 dpm/cm<sup>2</sup> or 200 dpm/100 cm<sup>2</sup>. There were no areas that exceeded this amount and again no corrective action was necessary.
- F. Marcia R. West performed the surveys. We have typed her name below the line where she signs off on the reports, but her signature is unique to her and have her sign differently would render her signature invalid. From this point forward we will also include her name, in print, below the signature line and I will co-sign as further verification.
- G. The data on the last two pages is a print off from the Cobra II auto gamma of the results of the leak test samples collected during the first decommissioning. It should have been attached to the final leak test report to show that these were the results. The new result print off for the liquid scintillation counter has been included with this amendment response.
- H. The pharmacology lab is still under our control and will remain so.

Thank you for your patience in our response. Your attention in this matter is greatly appreciated. Should you have further questions, please contact me at 816-234-3231 or our health physicist, Marcia West, at 816-807-8090 or by fax at 816-974-1443.

Sincerely,



Nanci A. Burchell  
Radiation Safety Officer  
Children's Mercy Hospital & Clinics



## Close-out Area Surveys

Date: May 6, 2010

Licensee: Children's Mercy Hospital; Kansas City, MO

Instrument: Ludlum Model 14C GM Meter (SN: 263436) CAL. DATE: 11/23/2009

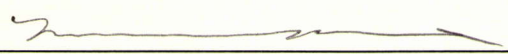
Location: Clinical Pharmacology Research Lab

|     | <u>Location</u> | <u>Results</u>  |
|-----|-----------------|-----------------|
| 1.  | Background      | 0.03 mR/hr      |
| 2.  | Floor           | 0.02-0.03 mR/hr |
| 3.  | Floor           | 0.02-0.03 mR/hr |
| 4.  | Floor           | 0.02-0.03 mR/hr |
| 5.  | Floor           | 0.02-0.03 mR/hr |
| 6.  | Floor           | 0.02-0.03 mR/hr |
| 7.  | Floor           | 0.02-0.03 mR/hr |
| 8.  | Floor           | 0.02-0.03 mR/hr |
| 9.  | Floor           | 0.02-0.03 mR/hr |
| 10. | Floor           | 0.02-0.03 mR/hr |
| 11. | Floor           | 0.02-0.03 mR/hr |
| 12. | Floor           | 0.02-0.03 mR/hr |
| 13. | Floor           | 0.02-0.03 mR/hr |
| 14. | Floor           | 0.02-0.03 mR/hr |
| 15. | Floor           | 0.02-0.03 mR/hr |
| 16. | Floor           | 0.02-0.03 mR/hr |
| 17. | Sink            | 0.02-0.03 mR/hr |
| 18. | Gel Boxes       | 0.02-0.03 mR/hr |
| 19. | Bench Top       | 0.02-0.03 mR/hr |
| 20. | Hood            | 0.02-0.03 mR/hr |
| 21. | Centrifuge      | 0.02-0.03 mR/hr |
| 22. | Freezer         | 0.02-0.03 mR/hr |
| 23. | Trash           | 0.02-0.03 mR/hr |

NRC

Results: The above area surveys were acquired of the assigned areas with a GM meter with a pancake probe. None of the areas exceeded the room background reading of 0.03 mR/hr. The efficiency of the pancake probe is 32% for P-32.

Performed by:

  
Marcia R. West

For: Cardinal Health Medical & Health Physics  
Nebraska Registry #50

  
Kari L. Burchell, RSO

**Close-out Wipe Tests**

Date: May 6, 2010

Licensee: Children's Mercy Hospital; Kansas City, MO

Instrument: Perkin Elmer Liquid Scintillation Counter

SN: DG03060719

Location: Clinical Pharmacology Research Lab

|     | <u>Location</u> | <u>Results</u>               |
|-----|-----------------|------------------------------|
| 1.  | Background      | 0 dpm                        |
| 2.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 3.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 4.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 5.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 6.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 7.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 8.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 9.  | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 10. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 11. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 12. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 13. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 14. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 15. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 16. | Floor           | <200 dpm/100 cm <sup>2</sup> |
| 17. | Sink            | <200 dpm/100 cm <sup>2</sup> |
| 18. | Gel Boxes       | <200 dpm/100 cm <sup>2</sup> |
| 19. | Bench Top       | <200 dpm/100 cm <sup>2</sup> |
| 20. | Hood            | <200 dpm/100 cm <sup>2</sup> |
| 21. | Centrifuge      | <200 dpm/100 cm <sup>2</sup> |
| 22. | Freezer         | <200 dpm/100 cm <sup>2</sup> |
| 23. | Trash           | <200 dpm/100 cm <sup>2</sup> |

Remarks: The above close-out wipe tests were acquired of the assigned areas. The sample areas consisted of a contiguous wipe from a 3' X 3' area or approximately 8361 cm<sup>2</sup>. The efficiency of the instrument is 98.0 % for P-32.

Performed by:

  
Marcia R. WestFor: Cardinal Health Medical & Health Physics  
Nebraska Registry #50

Assay Definition

## Assay Description:

WIPE TEST. CHILDREN'S MERCY HOSPITAL; KANSAS CITY - CLINICAL PHARMACOLOGY RESEARCH LAB

Assay Type: Direct DPM

Report Name: Single DPM Standard Report

Output Data Path: C:\Packard\Tricarb\Results\Default\Direct DPM\20100507\_1125

Raw Results Path: C:\Packard\Tricarb\Results\Default\Direct DPM\20100507\_1125\20100507\_1125.results

Assay File Name: C:\Packard\TriCarb\Assays\Direct DPM.lsa

Count Conditions

Nuclide: Direct DPM 3H

Quench Indicator: tSIE

External Std Terminator (sec): 0.5 2s

Pre-Count Delay (min): 0.00

Quench Set:

Low Energy: 3H

Count Time (min): 1.00

Count Mode: Normal

Assay Count Cycles: 1

#Vials/Sample: 1

Normalization Std DPM: 114900

Repeat Sample Count: 1

Calculate % Reference: Off

Background Subtract

Background Subtract: On - 1st Vial

Low CPM Threshold: Off

2 Sigma % Terminator: Off

| Regions | LL  | UL     | Bkg Subtract |
|---------|-----|--------|--------------|
| A       | 0.0 | 2000.0 | 1st Vial     |

Count Corrections

Static Controller: On

Colored Samples: n/a

Coincidence Time (nsec): 18

Luminescence Correction: n/a

Heterogeneity Monitor: n/a

Delay Before Burst (nsec): 75

## Cycle 1 Results

| S# | Count Time | CPMA | DPMI | SIS    | tSIE   | MESSAGES |
|----|------------|------|------|--------|--------|----------|
| 1  | 10.00      | 52   | 0    | 811.85 | 593.35 | B        |
| 2  | 1.00       | 0    | 0    | 0.00   | 574.67 | I        |
| 3  | 1.00       | 9    | 69   | 270.74 | 579.04 |          |
| 4  | 1.00       | 0    | 0    | 0.00   | 572.15 | I        |
| 5  | 1.00       | 0    | 0    | 0.00   | 574.10 | I        |
| 6  | 1.00       | 0    | 0    | 0.00   | 576.03 | I        |
| 7  | 1.00       | 0    | 0    | 0.00   | 564.75 | I        |
| 8  | 1.00       | 0    | 0    | 0.00   | 574.30 | I        |
| 9  | 1.00       | 0    | 0    | 0.00   | 570.98 | I        |
| 10 | 1.00       | 0    | 0    | 0.00   | 577.47 | I        |
| 11 | 1.00       | 0    | 0    | 0.00   | 570.91 | I        |
| 12 | 1.00       | 7    | 70   | 733.61 | 571.73 |          |
| 13 | 1.00       | 0    | 0    | 0.00   | 564.09 | I        |



5/7/2010 12:11:49 PM

QuantaSmart (TM) - 3.00 - Serial# 060719

Page # 1

Protocol# 30 - Direct DPM.lsa

User: Default

|    |      |    |    |         |        |   |
|----|------|----|----|---------|--------|---|
| 14 | 1.00 | 0  | 0  | 0.00    | 564.72 | I |
| 15 | 1.00 | 0  | 0  | 0.00    | 570.87 | I |
| 16 | 1.00 | 12 | 0  | 0.00    | 575.53 | I |
| 17 | 1.00 | 3  | 0  | 0.00    | 566.12 | I |
| 18 | 1.00 | 1  | 0  | 0.00    | 571.91 | I |
| 19 | 1.00 | 10 | 77 | 1161.15 | 573.75 | I |
| 20 | 1.00 | 0  | 0  | 0.00    | 574.84 | I |
| 21 | 1.00 | 3  | 70 | 7234.04 | 568.37 | I |
| 22 | 1.00 | 0  | 0  | 0.00    | 573.17 | I |
| 23 | 1.00 | 0  | 0  | 0.00    | 571.93 | I |
| 24 | 1.00 | 0  | 0  | 0.00    | 565.11 | I |

2/3

$\angle$  200 dpm/cm<sup>2</sup>

0 dpm

0.02 - 0.03 mL/hr

Qty. 0.02

# FedEx

For FedEx Express® Shipments

Contents should be complete

FedEx  
TRK#  
0215 8687 2080 4717

XH ENLA

MON - 17 MAY A1  
STANDARD OVERNIGHT

60532  
IL-US  
ORD



Emp# 689313 14MAY18 MKCA

241  
1000

**FedEx** US Airbill  
Express

FedEx Tracking Number: 8687 2080 4717

RECIPIENT: PEEL HERE

1 From This portion can be removed for Recipient's records.

Date 05/14/10 FedEx Tracking Number 868720804717  
Sender's Name Nancy A. Burchell Phone 816 254 3231  
Company CHILDREN'S MERCY HOSPITAL  
Address 2401 GILLHAM RD Dept./Floor/Suite/Room  
City KANSAS CITY State MO ZIP 64108

2 Your Internal Billing Reference

3 To Recipient's Name Internal Use Phone  
Company Internal Use  
Recipient's Address 400 W. Main St. Ste. 100 Dept./Floor/Suite/Room  
Address  
To request a package be held at a specific FedEx location, print FedEx address here.  
City St. Louis State IL ZIP 60532-4351



8687 2080 4717

4a Express Package Service

☐ FedEx Priority Overnight  
Next business morning\*  
Shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☐ FedEx Standard Overnight  
Next business afternoon\*  
Saturday Delivery NOT available.  
☐ FedEx 2Day  
Second business day\*  
Shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
FedEx Envelope rate not available. Minimum charge: One-pound rate.  
☐ FedEx Express Saver  
Third business day\*  
Saturday Delivery NOT available.

4b Express Freight Service

☐ FedEx 1Day Freight\*  
Next business day\*\*  
Shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☐ FedEx 2Day Freight  
Second business day\*\*  
Shipments will be delivered on Monday unless SATURDAY Delivery is selected.

5 Packaging

☒ FedEx Envelope\*  
☐ FedEx Pak\*  
Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.  
☐ FedEx Box  
☐ FedEx Tube  
☐ Other  
\*Declared value limit \$500.

6 Special Handling

☐ SATURDAY Delivery  
Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.  
☐ HOLD Weekday at FedEx Location  
Not available for FedEx First Overnight.  
☐ HOLD Saturday at FedEx Location  
Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.  
Does this shipment contain dangerous goods?  
One box must be checked.  
☒ No  
☐ Yes  
As per attached Shipper's Declaration.  
☐ Yes  
Shipper's Declaration not required.  
Dry Ice  
Dry Ice, 3 UN 1845  
kg  
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.  
☐ Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.  
☒ Sender  
Acct. No. in Section 1 will be billed.  
☐ Recipient  
☐ Third Party  
☐ Credit Card  
☐ Cash/Check  
Obtain Recip. Acct. No.

Total Packages  
Total Weight  
Credit Card Aut.

\*Your liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 Residential Delivery Signature Options

If you require a signature, check Direct or Indirect.

☒ No Signature Required  
Package may be left without obtaining a signature for delivery.  
☐ Direct Signature  
Someone at recipient's address may sign for delivery. Fee applies.  
☐ Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies.

519

Rev. Date 10/06-Part #158279-D1994-2006 FedEx PRINTED IN U.S.A.-5RF

Insert  
airbill  
here

fedex.com 1.800.GoFedEx 1.800.463.3339