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To: Farrah Gasskins **From:** Sue Dupre

Fax: 610-337-5289 **Pages:** 3

Phone: 610-337-5143 **Date:** 10-29-08

Re: Mail Control #142770 (leak test record for Gammacell-40)

Urgent **For Review** **Please Comment** **Please Reply** **Please Recycle**

● **Comments:**

Ms. Gasskins,

This is in reference to Mail Control No. 142770. Attached to this cover sheet is a record of a leak test performed by David Pyefinch of Best Theratronics for the Gammacell-40 irradiator shipped from Princeton University on August 12, 2008.

Please let me know if you have any questions about this fax or about the shipment. I can be reached at 609-258-6252 or at dupre@princeton.edu.

Sue Dupre
University Health Physicist, Princeton University

142770
NPS/RGNI MATERIALS-002

ROUTINE WIPE TEST FOR CONTAMINATION AND LEAK TEST FORM

447 March Road, Kanata, Ontario, Canada K2K 1X8. Telephone: (613) 592-2790 Telefax: (613) 591-6815

Customer Information

Order No. 105861 Customer Name PRINCETON UNIVERSITY
 Customer's Location PRINCETON N.J.

Irradiator Type and Radiation Source Characteristics

Note: Initial all boxes.

Irradiator Type: 6C40 (e.g. JS-8900, GC-3000) Serial Number 0023 Radiation Source Type: ⁶⁰Co , or ¹³⁷Cs

Wipe Test Details

Wipe Test Performed on:

1. Surface Tests

- Surface of Transport Package
- Plug and Cavity of Transport Package

2. Source Tests

- Underwater Source
- Category I & II Irradiators
- Source Handling Tools
- OTHER _____ (Specify)

F168 S/N FU3041 FU3049

Description of Procedure Used: Initial One or more: J-Cloth Filter Paper Styrofoam Other: _____
 Initial One or more: Wet Wipe Dry Wipe Other: _____ Fuel Filter

Survey Meter Details and Measurement Results

Survey Meter Make and Model: Bicon Surveyor 2000, with Pancake Probe Other _____ (Specify)

Survey Meter S.N.: B2356 Calibration Expiry Date: 16 JULY 2009

Pancake Probe S.N.: 001003

1. Surface Tests

Wipe Test Results: Negative. Contamination < 0.4 Bq/cm². No further action is required. Retain all wipes for further testing.
 Positive. Contamination ≥ 0.4 Bq/cm². Outline initial corrective action on this form. Follow relevant SOP.

Instrument Conversion Factor: Source Tests

~~1.17~~ cpm = 5 nCi (185 Bq) for ⁶⁰Co (see SE-CA-006 F1), or
1630 cpm = 5 nCi (185 Bq) for ¹³⁷Cs (see SE-CA-006 F1)

Background Reading: 40 cpm (A)

Gross Wipe Reading: 162 cpm (B)

Net Wipe Reading: 0 cpm (C) = (B) - (A). Choose the calculation I, or II.

2. Source Tests

(I) Measured Removable Contamination = $\frac{\text{Net Wipe Reading (cpm)} \times 5 \text{ nCi}}{\text{cpm}}$ = $\frac{0 \times 5 \text{ nCi}}{1630 \text{ cpm}}$ = 0.12 nCi Cobalt - 60

(II) Measured Removable Contamination = $\frac{\text{Net Wipe Reading (cpm)} \times 5 \text{ nCi}}{\text{cpm}}$ = $\frac{0 \times 5 \text{ nCi}}{1630 \text{ cpm}}$ = 0 nCi Cesium - 137

Wipe Test Results: Negative. Contamination < 5 nCi. No further action is required. Retain all wipes for further testing.
 Positive. Contamination ≥ 5 nCi. Outline initial corrective action on this form. Follow relevant SOP.

ROUTINE WIPE TEST FOR CONTAMINATION AND LEAK TEST FORM

Initial the MDS Nordion Wipe Test Procedure Followed

- IN/IM 0273 Co60, Routine Wipe Test for the Detection of Radioactive Contamination for Submerged Cobalt 60 Source Assemblies
- IN/OP 0274 F000, Underwater Transport Package Unload Procedure
- IN/OP 0275 F000, Underwater Transport Package Load Procedure
- IN/OP 0276 CO60, Source Holder Load Procedure for a Wet Storage Irradiator
- IN/IM 0278 A000, Routine Wipe Test for the Detection of Radioactive Surface Contamination for Category I and II Irradiators
- IN/OP 0282 F168, Procedure for the Receipt of an F-168 Transport Package
- IN/IM 0293 F000, Routine Wipe Test for the Detection of Radioactive Surface Contamination for a Type B(U) Transport Package

Reference Information Documents

1. IN/DS 0277 IR000, Radiation Survey Specification for Category III and IV Irradiators
2. IN/DS 0517 F168, Preparation for Shipment of the F-168 and F168-X Transport Packagings
3. IN/DS 1093 Z000, Information Document on Survey Meters use by MDS Nordion's Installation and Service Group
4. SE-CA-006, Calibration of a Detection System for the Measurement of Loose Contamination on Swipe

Standard Operating Procedure List and Proper Usage

1. Handling Tools Work Table - IN/IM 0273 Co 60
2. Source Rack - IN/IM 0273 Co 60
3. Building Survey - IN/DS 0277 IR000
4. Leak Test - IN/OP 0282 F168
5. Shipping Container and Inner Plug - IN/IM 0293 F000
6. Torque Specs and Return of Sources Procedure - IN/DS 0517 F168

Outline Initial Corrective Action (if required):

Corrective Action Taken by _____ (Name) _____ (Signature)

Corrective Action Performed on _____ (Date)

Wipe Test Performed by and Result Certified by David Proffice (Name) [Signature] (Signature)

Source Rep (Title) 12 Aug 2008 (Date)