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ST LOUIS CANCER AND
BREAST INSTITUTE

Fax

| | |
|-----------------------|----------------------|
| To: Colleen Casey | From: Todd Grigoret |
| Fax: (630) 515-1078 | Pages: 6 incl. cover |
| Phone: (630) 829-9500 | Date: 8/15/07 |
| Re: Control # 316230 | CC: |

St. Louis Cancer and Breast Institute
(Ballas Cancer Center)
Suite 100
1000 Des Peres Rd.
Des Peres, MO 63131
(314) 471-0250
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August 15, 2007

Colleen Casey
Materials Licensing Branch
U.S. Nuclear Regulatory Commission, Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352
Phone: (630) 829-9500
Fax: (630) 515-1078

Re: Control # 316230

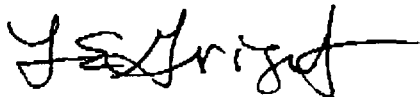
Clarification of Application for Materials License Amendment to USNRC license # 24-32151-01.

The numerical values of the exposure rates measured at 450 N. New Ballas Road and the last two leak tests done by the vendor for the Nucletron HDR unit were inadvertently omitted from the amendment request dated May 2, 2007. The exposure rates observed during the area survey did not deviate from the background exposure rate anywhere in the space, all of which was carefully surveyed. Those background rates ranged from 0 to 20 microcuries per hour. The last two leak tests performed on the HDR unit are attached.

The area survey done for decommissioning of the 450 N. New Ballas location was performed with a Victoreen 450P pressurized ion chamber survey meter. The 450P ion chamber is a sealed unit pressurized to 6 atmospheres with a gas mixture of 80/20 nitrogen/neon which enhances its sensitivity well beyond a typical ion chamber and renders it comparable to a GM tube. The operation is entirely electronic so that there are no electro-mechanical device failures or time lags; the response time is very fast: less than 5 seconds on the lowest scale (zero to 500 microcuries) while the integrate mode features a 100 millisecond response time. The meter autoranges so that inadvertent saturation and false low readings are not a problem, as can occur with Geiger-Muller tubes. The meter is sufficiently sensitive to detect quantities as low as a few microcuries during a walking sweep of the floor. A few microcuries of Cs-137, for example, raise the exposure level about 20 microR/hr at one foot which is easily detectable during a slow surface sweep. Quantities of contamination smaller than that should be picked up on the wipe tests.

Thank you for your patience and assistance. Our new fax number appears at the top of this page.

Sincerely,



Todd E. Grigereit, Ph.D.
Radiation Safety Officer

Nucletron.**Transport Drum (Barrel) Wipe Test Work Sheet
Sealed Source (Cable) Leak Test Work Sheet**

Nucletron Corporation, Service Department, 8671 Robert Fulton Drive, Columbia, MD 21046 PH: 410-872-4400 Fax: 410-312-4196

INSTRUCTIONS FOR NUCLETRON FIELD SERVICE ENGINEER

- 1 Follow the USA Nucletron Wipe Test Work Instruction, to perform the tests and analyses described below.
- 2 After the spent source is secured within the shielded inner source shipping container (pig), collect a leak test sample of the sealed source by wiping along the source cable. Using a dry wipe pad, wipe FROM the end of the cable TOWARD the source. Do not touch the wipe to any other surface.
- 3 Collect a wipe test of 300 cm² from the exterior of the outer shipping container using a dry wipe. Wipe twice (2x) around the side of the container and twice (2x) across the top using moderate pressure.
- 4 In a low radiation background area, use the "Inspector" Survey Instrument to measure the background count rate and the count rate from each wipe. Place the wipe on the tray, centered under the detector.
- 5 If the BR exceeds 80 cpm, re-measure the background count rate.
- 6 If either wipe exceeds one-half it's limits contact the RSO.
- 7 Measure and record the maximum dose rate on the surface of the outer shipping container and the maximum dose rate at one (1) meter.

| Device Serial No. and type | Source Serial No. & Type | Container S/N | Radiation Inst. S/N & Cal | Background BR | LLD = (4.66)(Sqrt B)+3+B | Source Wipe SWR | Drum Wipe DWR |
|-------------------------------|-----------------------------|--|------------------------------|--|-----------------------------|--------------------|------------------|
| 31502 | D36B0566 | 109C5 | 8556 | 43 cpm | 76.56 counts | 27 cpm | 21 cpm |
| mHDR V2 | IR192 | Calibrated on 22-Jun-06 Calibration due 22-Jun-07 | | If >80 move to lower background area | | | |
| Maximum dose rate (surface): | | Maximum dose rate (1 meter) | | Current activity: | | | |
| 9.0 mR/h | | 0.3 mR/h | | 3.691 Ci | | | |

CERTIFICATE OF TRANSPORT DRUM CONTAMINATION ANALYSIS

The Transport Drum Wipe Test was assayed for beta-gamma contamination. Title 49 CFR 173.443 limits the removable contamination for 300cm² surface wipes to less than 120 Bq (0.003 µCi)(6,600 dpm) for external surfaces of packages in transportation.

If DWR is less than or equal to LLD, record "<LLD". Otherwise, Sample Activity = (DWR-BR)/E, where E is the instrument efficiency found on the calibration sticker

FSE Name Scott T. McGuireSample Activity <LLD dpmDate 1-Mar-07

FSE Signature

Thu Mar 2007 09:04 AM EST**CERTIFICATE OF CABLE WIPE TEST**

The Leak Test Sample was assayed for beta-gamma contamination. Title 10 CFR 35.59 limits the removable contamination from a sealed source used in brachytherapy to 200 Bq (0.005 µCi)(11,100 dpm).

If SWR is less than or equal to LLD, record "<LLD". Otherwise, Sample Activity = (SWR-BR)/E, where E is the instrument efficiency found on the calibration sticker

FSE Name Scott T. McGuireSample Activity <LLD dpmDate 1-Mar-07

FSE Signature

Thu Mar 2007 09:04 AM EST

Hospital: US3015-St. Louis Cancer and Breast
Address: 450 N. Ballas Rd
St. Louis, MO 63141

Note to licensee: This report should be reviewed by your
Radiation Safety Officer and filed for future reference.

Contact name: Todd Grigereit

Nucletron

DO NOT REMOVE THIS DOCUMENT FROM THE TRANSPORT DRUM**Source Return Document (USA) for Container type ADIC (Part No. 081.040-xx)**

| | | | |
|---|---------------------------|--|-----------------------|
| Company Name | ST. LOUIS CANCEL & BREAST | Address | 450 N. New Ballas Rd. |
| City | ST. LOUIS | State/Zip | MO / USA |
| Container No. | 109 C5 | Source No. | D36B - 0566 |
| Source ID | 31502 | | |
| <input checked="" type="checkbox"/> mHDR V2 / GENIE (0.9mm) <input type="checkbox"/> mPDR V2 (0.9mm) | | <input type="checkbox"/> mHDR Classic (1.1mm) <input type="checkbox"/> mPDR Classic (1.1mm) | |

| Nucletron Handling Procedure (Article 190.052) | | Nucletron Certified Source Handler | |
|--|--|--|---------------------------------|
| 1. | Are you Nucletron-certified for source exchanges? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 2. | Dose rate above the source channel (without lid) should be lower than on the side of the container | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 3. | Source is locked (lever down) and source cable is undamaged | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 4. | Length of source cable extending from unload tube | 477 | |
| 5. | Source information label on container matches actual source | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 6. | Container lid is closed: both nuts fastened and lid locked | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 7. | Surface dose rate of the hot spot on top of the transport drum | 0.9 | |
| 8. | Surface dose rate of the hot spot on the side of the transport drum | 9.0 | |
| 9. | Dose rate for the hot spot at 1 metre from the transport drum | 0.3 | |
| 10. | Radioactive contamination on transport drum | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 11. | Measurements within specification? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 12. | Transport Index (TI) | 0.3 | |
| 13. | Source activity | 136.567 | GBq |
| 14. | Labels are correctly placed and filled in (II-Yellow and address labels) | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 15. | Shipping documents are completed and signed | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 16. | No other reportable quality problems with source, container(s), packaging, labelling, error code 227/228, etc.? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 17. | RMA label attached? (If yes, submit an FPR report to Nucletron) | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| 18. | Lid screwed tightly on to transport drum and red tamper inserted; source return document enclosed (tick 'Pass' if done immediately after completing this form) | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |

| | | | |
|------------------|------------------|------------|--|
| Signature | Signature | Date | <input checked="" type="checkbox"/> Yes (no unresolved remarks) <input type="checkbox"/> NO: DO NOT SHIP and call Nucletron (1-800-4459295) |
| SCOTT T. McGUIRE | SCOTT T. McGUIRE | 2007-03-01 | |

Fax a copy to Nucletron, fax no. (1) 410-3124196, and include the white original in the transport drum.

Remarks (place a red RMA Label on the container and on the transport drum):


Nucletron.

Transport Drum (Barrel) Wipe Test Work Sheet Sealed Source (Cable) Leak Test Work Sheet

Nucletron Corporation, Service Department, 8671 Robert Fulton Drive, Columbia, MD 21046 PH: 410-872-4400 Fax: 410-312-4186

INSTRUCTIONS FOR NUCLETRON FIELD SERVICE ENGINEER

- Follow the USA Nucletron Wipe Test Work Instruction, to perform the tests and analyses described below.
- After the spent source is secured within the shielded inner source shipping container (plg), collect a leak test sample of the sealed source by wiping along the source cable. Using a dry wipe pad, wipe FROM the end of the cable TOWARD the source. Do not touch the wipe to any other surface.
- Collect a wipe test of 300 cm² from the exterior of the outer shipping container using a dry wipe. Wipe twice (2x) around the side of the container and twice (2x) across the top using moderate pressure.
- In a low radiation background area, use the "Inspector" Survey Instrument to measure the background count rate and the count rate from each wipe. Place the wipe on the tray, centered under the detector.
- If the BR exceeds 80 cpm, re-measure the background count rate.
- If either wipe exceeds one-half it's limits contact the RSO.
- Measure and record the maximum dose rate on the surface of the outer shipping container and the maximum dose rate at one (1) meter.

| Device Serial No. and type | Source Serial No. & Type | Container S/N | Radiation Inst. S/N & Cal | Background BR | LLD = (4.66)(Sqrt B)+3+B | Source Wipe SWR | Drum Wipe DWR |
|--|-----------------------------|--|------------------------------|--|-----------------------------|--------------------|------------------|
| 31502 mHDR V2 | D36B1151 IF192 | 1883ADIC Calibrated on 22-Jun-06 Calibration due 22-Jun-07 | 8556 | 31 cpm If >80 move to lower background area | 58.95 counts | 32 cpm | 31 cpm |
| Maximum dose rate (surface): 9.0 mR/h | | Maximum dose rate (1 meter) 0.3 mR/h | | Current activity: 4.259 Ci | | | |

CERTIFICATE OF TRANSPORT DRUM CONTAMINATION ANALYSIS

The Transport Drum Wipe Test was assayed for beta-gamma contamination. Title 49 CFR 173.443 limits the removable contamination for 300cm² surface wipes to less than 120 Bq (0.003 µCi)(6,600 dpm) for external surfaces of packages in transportation.

If DWR is less than or equal to LLD, record "<LLD". Otherwise, Sample Activity = (DWR-BR)/E, where E is the instrument efficiency found on the calibration sticker

FSE Name Scott T. McGuire

Sample Activity <LLD dpm

Date 29-May-07

FSE Signature

CERTIFICATE OF CABLE WIPE TEST

The Leak Test Sample was assayed for beta-gamma contamination. Title 10 CFR 35.59 limits the removable contamination from a sealed source used in brachytherapy to 200 Bq (0.005 µCi)(11,100 dpm).

If SWR is less than or equal to LLD, record "<LLD". Otherwise, Sample Activity = (SWR-BR)/E, where E is the instrument efficiency found on the calibration sticker

FSE Name Scott T. McGuire

Sample Activity <LLD dpm

Date 29-May-07

FSE Signature

Hospital: US3015-St. Louis Cancer and Breast
Address: 450 N. Ballas Rd
St. Louis, MO 63141

Note to licensee: This report should be reviewed by your
Radiation Safety Officer and filed for future reference.

Contact name: Todd Grigereit

Nucletron

DO NOT REMOVE THIS DOCUMENT FROM THE TRANSPORT DRUM**Source Return Document (USA) for Container type ADIC (Part No. 081.040-xx)**

| | |
|---|---|
| ST. LOUIS Cancer & BREAST | 1100 DAS PERES Road |
| ST LOUIS | MO / USA |
| 1883 ADIC | D36B 1151 |
| 31502 | |
| <input checked="" type="checkbox"/> mHDR V2 / GENIE (0.9mm) | <input type="checkbox"/> mHDR Classic (1.1mm) |
| <input type="checkbox"/> mPDR V2 (0.9mm) | <input type="checkbox"/> mPDR Classic (1.1mm) |

| | | | |
|-----|--|--|---------------------------------|
| 1. | Are you Nucletron-certified for source exchanges? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 2. | Dose rate above the source channel (without lid) should be lower than on the side of the container | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 3. | Source is locked (lever down) and source cable is undamaged | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 4. | Length of source cable extending from unload tube | 470 | |
| 5. | Source information label on container matches actual source | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 6. | Container lid is closed: both nuts fastened and lid locked | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 7. | Surface dose rate of the hot spot on top of the transport drum | 0.9 | |
| 8. | Surface dose rate of the hot spot on the side of the transport drum | 2.0 | |
| 9. | Dose rate for the hot spot at 1 metre from the transport drum | 0.3 | |
| 10. | Radioactive contamination on transport drum | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 11. | Measurements within specification? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 12. | Transport Index (TI) | 0.3 | |
| 13. | Source activity | 157.58 | GBq |
| 14. | Labels are correctly placed and filled in (II-Yellow and address labels) | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 15. | Shipping documents are completed and signed | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 16. | No other reportable quality problems with source, container(s), packaging, labelling, error code 227/228, etc.? | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |
| 17. | RMA label attached? (If yes, submit an FPR report to Nucletron) | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| 18. | Lid screwed tightly on to transport drum and red tamper inserted; source return document enclosed (tick 'Pass' if done immediately after completing this form) | <input checked="" type="checkbox"/> Pass | <input type="checkbox"/> Remark |

| | | | |
|------------------|------------------|------------|--|
| SCOTT T. McGUIRE | SCOTT T. McGUIRE | 2007-05-29 | <input checked="" type="checkbox"/> Yes (no unresolved remarks) <input type="checkbox"/> NO: DO NOT SHIP and call Nucletron (1)-800-4459295 |
|------------------|------------------|------------|--|

Fax a copy to Nucletron, fax no. (1) 410-3124196, and include the white original in the transport drum.

Remarks (place a red RMA Label on the container and on the transport drum):