NRC FORM 374A (7-94) U.S. NUCLEAR REGULATORY COMMISSION

PAGE 1 OF 1 PAGES

License Number 21-26523-01

Docket or Reference Number 030-33281

Amendment No. 03

399801

MATERIALS LICENSE SUPPLEMENTARY SHEET

Medical Arts Center
337 E. Houghton Avenue
West Branch, MI 48661

In accordance with NRC Form 314 "Certificate of Disposition" dated June 7, 1996, License Number 21-26523-01 is hereby terminated.

TERMINATED

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date August 29, 1996

By Charles A. Gill
Nuclear Materials Licensing Branch, Region III

070030

COPY

2 ML 30 SD

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 02120
STATUS CODE: 0
FEE CATEGORY: 7C
EXP. DATE: 19980930
FEE COMMENTS:
DECOM FIN ASSUR REQD: N

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
APPLICANT/LICENSEE: MEDICAL ARTS CENTER
RECEIVED DATE: 950608
DOCKET NO: 3033281
CONTROL NO.: 399806
LICENSE NO.: 21-26523-01
ACTION TYPE: TERMINATION

SR

2. FEE ATTACHED
AMOUNT: 0
CHECK NO.: 0

3. COMMENTS

SIGNED D. Hersey
DATE 1-19-96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED /✓/)

1. FEE CATEGORY AND AMOUNT: 7C Decommissioning

FEE EXEMPT

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED AS:
AMENDMENT ✓
RENEWAL
LICENSE

3. OTHER

SIGNED SC
DATE 1/24/96

RECEIVED BY LFDCB
Date Jan. 24 1996
Log Jan 15 III
By SC
Date Completed 1/24/96

RECEIVED
JAN 27 1996
REGION III

JAN 24 AM 11:40

NRC FORM 314
10 CFR 30.36(c)(1)(iv)
10 CFR 40.42(c)(1)(iv)
10 CFR 70.38(c)(1)(iv)

U.S. NUCLEAR REGULATORY COMMISSION

CERTIFICATE OF DISPOSITION OF MATERIALS

INSTRUCTIONS: SEND THE COMPLETED CERTIFICATE TO THE NRC OFFICE SPECIFIED ON THE REVERSE. *(All items MUST be completed--print or type)*

APPROVED BY OMB: 3150-0028
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30 MIN. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB-7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0028), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE NAME AND ADDRESS

Medical Arts Center
337 E. Houghton Avenue
West Branch, MI 48661

LICENSE NUMBER
26523
21-~~26253~~-01

LICENSE EXPIRATION DATE
09-30-98

THE LICENSEE OR ANY INDIVIDUAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE LICENSEE CERTIFIES THAT:
(Check and/or complete the appropriate item(s) below.)

A. MATERIALS DATA *(Check one and complete as necessary)*

☐ 1. NO MATERIALS HAVE EVER BEEN PROCURED OR POSSESSED BY THE LICENSEE UNDER THIS LICENSE.

OR

☒ 2. ALL MATERIALS PROCURED AND/OR POSSESSED BY THE LICENSEE UNDER THE LICENSE NUMBER CITED ABOVE HAVE BEEN DISPOSED OF IN THE FOLLOWING MANNER. *(If additional space is needed, use the reverse side or provide attachments.)*

Describe specific material transfer actions and, if there were radioactive wastes generated in terminating this license, the disposal actions, including the disposition of low-level radioactive waste, mixed waste, Greater-than-Class-C waste, and sealed sources, if applicable.

All waste decayed to background and disposed.

For transfers, specify the date of the transfer, the name of the licensed recipient, and the recipient's NRC license number or Agreement State name and license number. Tolfree Memorial Hospital 21-18892-01
337 E. Houghton Avenue
West Branch, MI 48661

If materials were disposed of directly by the licensee rather than transferred to another licensee, licensed disposal site or waste contractor, describe the specific disposal procedures *(e.g., decay in storage).*

B. OTHER DATA

☒ 1. OUR LICENSE HAS NOT YET EXPIRED; PLEASE TERMINATE IT.

2. WAS A RADIATION SURVEY CONDUCTED TO CONFIRM THE ABSENCE OF LICENSED RADIOACTIVE MATERIALS AND TO DETERMINE WHETHER ANY CONTAMINATION REMAINS ON THE PREMISES COVERED BY THE LICENSE? *(Check one)*

☒ NO *(Attach explanation)*
☐ YES, THE RESULTS *(Check one)*
  ☐ ARE ATTACHED, or
  ☐ WERE FORWARDED TO NRC ON *(Date)*

3. THE PERSON TO BE CONTACTED REGARDING THE INFORMATION PROVIDED ON THIS FORM

NAME James M. Botti, M.S.
Medical Physics Consultants, Inc.

TELEPHONE NUMBER 313-661-3197

4. MAIL ALL FUTURE CORRESPONDENCE REGARDING THIS LICENSE TO

Claude Rohrer, CNMT
Nuclear Medicine Department
Tolfree Memorial Hospital

CERTIFYING OFFICIAL

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

SIGNATURE [signature]

DATE 6-7-95

PRINTED NAME AND TITLE PATRICIA CEO

399806

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 RESPECTS. 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.

NRC FORM 314 (6-90)

Termination

FEE EXEMPT

RECEIVED
JUN 08 1995
REGION III

TOLFREE MEMORIAL HOSPITAL

June 6, 1995

UNITED STATES NUCLEAR REGULATORY COMMISSION
Region III, Office of Materials Licensing
801 Warrendale Road
Lisle, IL 60532-4351

RE: License Renewal

Dear Sir/Madam:

Item #1. Please find the enclosed license renewal for a NRC Byproduct materials license for:

TOLFREE MEMORIAL HOSPITAL
337 EAST HOUGHTON AVENUE
WEST BRANCH, MI 48661
NRC LICENSE # 21-18892-01

Item #2. Please find the enclosed NRC form 314 for the disposition of radioactive materials and termination of the following license.

MEDICAL ARTS CENTER
337 EAST HOUGHTON AVENUE
WEST BRANCH, MI 48661
NRC LICENSE # 21-26253-01

Item #3. It is our intention to add the above location, as a location of use for the Tolfree Memorial Hospital License. Please note, that this will not take effect until we have been notified by you of this approval.

Item #4. Please note that we will not conduct or forward a close-out survey to you for the Medical Arts Center location.

Item #5. A check for the $1400.00 renewal fee is enclosed.

If you have any questions or require additional information, please contact our physicist, James M. Botti at (313) 662-3197.

Sincerely,

Douglas Pattullo
Chief Executive Officer

DP/lra

335 East Houghton Avenue
West Branch, Michigan 48661
517-345-3660

SEP 23 1996

Douglas E. Pattullo
Chief Executive Officer
Medical Arts Center
337 E. Houghton Avenue
West Branch, MI 48661

Dear Mr. Pattullo:

Enclosed is Amendment No. 03 which terminates your NRC License Number 21-26523-01 in accordance with your request.

If you have any questions or require clarification on any of the information stated above, you may contact us at (630) 829-9887.

Sincerely,

Original Signed By
Charles F. Gill
Nuclear Materials Licensing Branch

License No.: 21-26523-01
Docket No.: 030-33281

Enclosure: Amendment No. 03

DOCUMENT NAME: M:\03033281.T6

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	DNMS/RIII	E							
NAME	CGILL:jaw								
DATE	08/28/96								

OFFICIAL RECORD COPY

399806

AUG 2 2 1996

Douglas E. Pattullo
Chief Executive Officer
Medical Arts Center
337 E. Houghton Avenue
West Branch, MI 48661

Dear Mr. Pattullo:

Please be advised that your July 8, 1996 response letter to our request for information letter, dated July 2, 1996, was inadequate to continue the review of your requested licensing action because the necessary additional information was not in your submittal. Therefore, we will state more specifically the additional information we need to continue our review, provide more guidance and explain why your July 8, 1996 submittal was inadequate.

Please be advised that your request (letter dated June 6, 1995) to terminate your License No. 21-24368-01 may not be appropriately reviewed until you submit close-out survey results to us. We cannot authorize you to release your old nuclear medicine space and "hot lab" for unrestricted use (even by other members of your staff) until we have received and reviewed a copy of the results of your close-out survey. The survey should consist of exposure rate measurements to show that all sources of radioactive material have been removed, and contamination checks of areas where radioactive materials were used or stored. Average radiation levels associated with surface contamination and removable contamination should not exceed those specified in the enclosed decontamination guide. Please submit, at a minimum, the following information (referenced as additional information) for Control No. 399806 with your close-out survey:

a. A history of all radionuclides used at your old nuclear medicine space and "hot lab".

b. A current copy of the leak test results for the sealed sources used at your nuclear medicine space and "hot lab". Also a history of leaking sealed sources (if any).

c. A diagram of your old facility with survey and wipe test results keyed to specific locations. Please record your survey results using the appropriate units as described in 10 CFR 30.36(j)(2)(i)(copy enclosed).

d. The name of the person performing the survey.

e. The date the survey was performed.

f. The instrument(s) used for exposure rate measurements and for analysis of the wipes.

g. Background readings.

h. The date that the survey instrument was last calibrated.

Please be advised that the close-out survey results which were sent to us by Claude Rohrer, R.T.N., by letter dated July 3, 1996, was inadequate for our review because the reporting criteria above and in the enclosed guidance documents were not followed. For your resubmittal of the close-out survey results, please carefully review the guidance information we are sending you and be sure you understand what information is needed for our review. If there are any questions, please call the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate answers.

Sincerely,

Original Signed By
Charles F. Gill
Nuclear Materials Licensing Branch

License No. 21-26523-01
Docket No. 030-33281

Enclosures: 1. Decontamination Guidelines
2. 10 CFR Part 30

DOCUMENT NAME: M:\03033281.DF6
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	DNMS/RIII	C							
NAME	CFGill:brt	CFG							
DATE	08/22/96								

OFFICIAL RECORD COPY

TOLFREE MEMORIAL HOSPITAL

August 20, 1996

United States Nuclear Regulatory Commission
Region III, Office of Materials Licensing
801 Warrandale Road
Lisle, IL 60532-4351

Re: Amendment to NRC License #21-18892-01
Tolfree Memorial Hospital

Closure of NRC License #21-26253-01
Medical Arts Center
337 East Houghton Avenue
West Branch, Michigan 48661

Control #301330

Dear Mr. Gill:

Item #1 Please drop our request to have an assistant RSO.

Item #2 Medical Arts Center is located within the same building and facility as Tolfree Memorial Hospital. Medical Arts Center in addition has the same address. Medical Arts Center and Tolfree Memorial Hospital are owned and operated by the same entity. Medical Arts Center is the out-patient service portion of the Hospital.

Item #3 It is our intention to not discontinue service at the Medical Arts Center location. Therefore, we will not conduct or forward a close-out survey to you for the Medical Arts Center location. This item was discussed during a phone conversation between our consultant James Botti and John Madera of your office on 8/16/96.

Item #4 Please delete Richard a Rideout, M.D. and Richard Jankowski, M.D. as authorized users from our license.

Item #5 Please authorize Stephen R. Brown for group 35.300 use. We have enclosed the required preceptor statements.

If you have any questions or require additional information, please contact our physicist, James M. Botti at #313-662-3197.

Sincerely,

Douglas E. Pattullo
Chief Executive Officer

RECEIVED
AUG 2 3 1996
REGION III

335 East Houghton Avenue
West Branch, Michigan 48661
517-345-3660

PM 8/20/96

AUG 2 3 1996

NRC FORM 313M SUPPLEMENT B
(9-81)

U. S. NUCLEAR REGULATORY COMMISSION

Approved by OMB
3150-0041
Expires 9-30-85

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document supervised, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

STEPHEN B BROWN

STREET ADDRESS

33 FERNS WAY

CITY | STATE | ZIP CODE

BALTIMORE MD 21236

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1. Supervised examination of patients to determine the suitability for radioisotope diagnostic and/or treatment and recommendations for prescribed dosage.
2. Calculation of dose calculation and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.
3. Adequate period of training to enable physician to manage radioactive patients through diagnostic and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be furnished in duplicate or separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	60	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	0	
	LIVER FUNCTION STUDIES	0	
	FAT ABSORPTION STUDIES	0	
	KIDNEY FUNCTION STUDIES	34	
	IN VITRO STUDIES	0	
OTHER			
I-125	DETECTION OF THROMBOSES	0	
I-131	THYROID IMAGING	60	
P-32	EYE TUMOR LOCALIZATION	0	
Se-75	PANCREAS IMAGING	0	
Yb-169	CISTERNOGRAPHY	2	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	4	
OTHER			
Tc-99m	BRAIN IMAGING	20	
	CARDIAC IMAGING	150	
	THYROID IMAGING	4	
	SALIVARY GLAND IMAGING	0	
	BLOOD POOL IMAGING	0	
	PLACENTA LOCALIZATION	0	
	LIVER AND SPLEEN IMAGING	25	
	LUNG IMAGING	100	
	BONE IMAGING	102	
OTHER			

PRECEPTOR STATEMENT (Continued)

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheet.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	0	
P-32 (Colloidal)	INTRACAVITARY TREATMENT	0	
I-131	TREATMENT OF THYROID CARCINOMA	20	
	TREATMENT OF HYPERTHYROIDISM	30	
Au-198	INTRACAVITARY TREATMENT	0	
Co-60 or Cs-137	INTERSTITIAL TREATMENT	0	
	INTRACAVITARY TREATMENT	0	
I-125 or Ir-192	INTERSTITIAL TREATMENT	0	
Co-60 or Cs-137	TELETHERAPY TREATMENT	0	
Sr-90	TREATMENT OF EYE DISEASE	0	
	RADIOPHARMACEUTICAL PREPARATION	0	
Mo-99/ Tc-99m	GENERATOR	0	
Sn-113/ In-113m	GENERATOR	0	
Tc-99m	REAGENT KITS	0	
Other			

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

6 month total
from 6-91-6-95

4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR
DAVID L. OSHER MD

b. NAME OF INSTITUTION
PROVIDENCE HOSPITAL

c. MAILING ADDRESS
16001 W. NINE MILE

d. CITY
Southfield MI

5. MATERIALS LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE
D Osher

7. PRECEPTOR'S NAME (Please type or print)
D. OSHER, M.D.

8. DATE
6/14/96

NRC FORM 313N SUPPLEMENT B
(9-81)

TOLFREE MEMORIAL HOSPITAL

July 8, 1996

Charles F. Gill
Nuclear Materials Licensing Branch
U.S.N.R.C.
Region III
801 Warrenville Road
Lisle, ILL 60532-4351

Dear Mr. Gill:

Here is the additional information you requested. We sent you copes of actual surveys and wipes, along with calibration certificates from survey meter.

Items you requested are highlighted in yellow for your convenience.

Sincerely,

Claude Rohrer RTN

Claude Rohrer, R.T.N.

License No. 21-26523-01
Docket No. 030-33281

Enclosures:
Area Survey Printout
Wipe, Survey Map
Well calibration, background, wipes
Well Counter Efficiency
Certificate of Calibration Survey, Meter

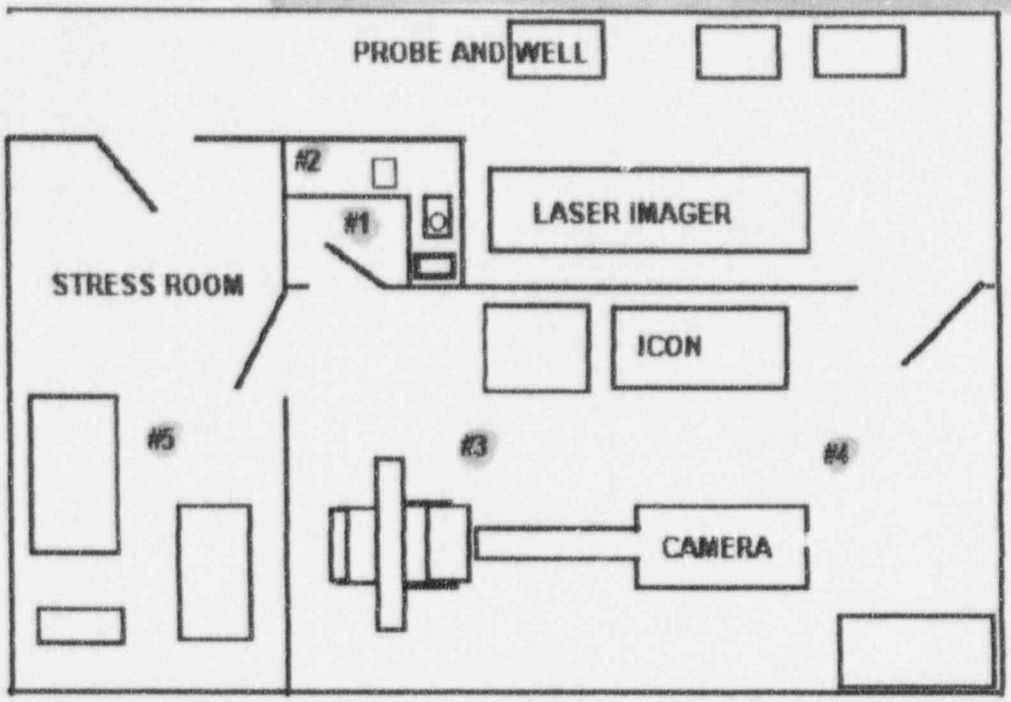
RECEIVED
JUL 11 1996
REGION III

pm: 7-9-96

JUL 11 1996

335 East Houghton Avenue
West Branch, Michigan 48661
517-345-3660

MEDICAL ARTS CENTER (AREA DIAGRAM FOR DAILY SURVEYS AND WEEKLY WIPES)



1=HOT LAB FLOOR
2=DOSE PREP AREA
3=IMAGING ROOM FLOOR
4=IMAGING ROOM
5=STRESS ROOM AND TREADMILL

MEDICAL ARTS CENTER

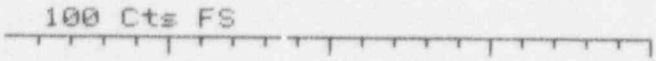
Jul 05,1996 12:16

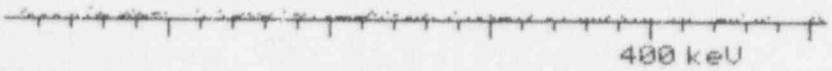
CAPTUS - 500 REV 1.24 SN: 000126

BACKGROUND Trigger Level: 2000.0 cpm

Counted For 60.0 sec

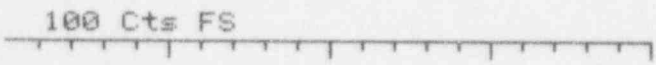
Total Counts: 166.0 cpm

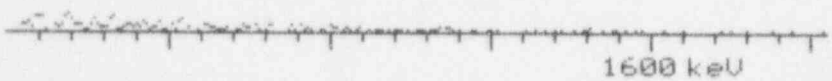




Counted For 60.0 sec

Total Counts: 262.0 cpm





MEDICAL ARTS CENTER

Jul 05,1996 12:13

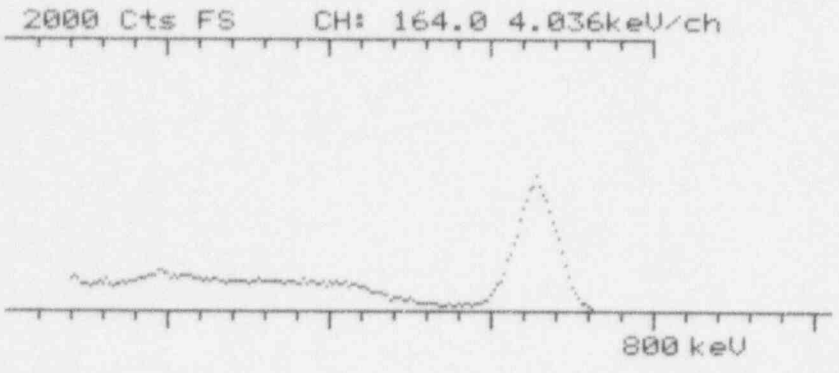
CAPTUS - 500 REV 1.24 SN: 000126

CALIBRATION OF WELL

Cs137 Counted For 77.9 sec

FWHM: 9.9 %

HV Reference #: 063



MEDICAL ARTS CENTER

Jul 05,1996 12:30

CAPTUS - 500 REV 1.24 SN: 000126

WORK AREAS

Trigger Level: 2000.0 dpm

W-01 HOT LAB FLOOR
Counted For 60.0 sec Jul 05,1996 12:20

CF: 400 156.0 ± 40.5 dpm

W-02 HOT LAB DOSE PREP
Counted For 60.0 sec Jul 05,1996 12:22

CF: 400 -10.01 ± 36.17 dpm

W-03 IMAGE RM FLOOR
Counted For 60.0 sec Jul 05,1996 12:26

CF: 400 -14.01 ± 36.06 dpm

W-04 IMAGE RM CAMERA ECT
Counted For 60.0 sec Jul 05,1996 12:28

CF: 400 52.01 ± 37.85 dpm

W-05 STR LAB TREADMILL
Counted For 60.0 sec Jul 05,1996 12:30

CF: 400 1491. ± 66. dpm
TC99m 836.1 ± 32.9 dpm

15 keV 34.02 ± 7.21 cpm

MEDICAL PHYSICS CONSULTANTS, INC.
2309 Shelby
Ann Arbor, Michigan 48103
(313) 662-3197

CERTIFICATE OF INSTRUMENT CALIBRATION

Facility: Medical Arts Center - Tolfree Hospital

Instrument:
Manufacturer - Bicron
Type - GM
Model Number - Surveyor 2000
Serial Number - B693L
Probe Type - S.W.

Calibration Geometry: Probe perpendicular to source, shield closed.
_⊥=perpendicular // = parallel On sticker

Calibration Source:

	Nuclide	Exposure Rate at Specified Distance	Calibration Accuracy
	Cs - 137	34.67 mR/h at 1m. on 5/17/95	+/- 3% NBS
Original Calibration Date:	12/6/83	NRC License 21-20153-01	

Calibration Data:

Scale	Exposure rate (mR/h)	Instrument Reading (mR/h)	Correction Factor	Exposure rate (mR/h)	Instrument Reading (mR/h)	Correction Factor	Avg. Scale Correction Factor
x 0.1	0.06	0.065	0.923	0.13	0.128	1.016	1.0
x 1	0.6	0.63	0.952	1.3	1.25	1.04	1.0
x 10	6.0	6.0	1.0	13.0	12.8	1.016	1.0
x 100	60	65	0.923	130	125	1.04	1.0
x 1000	Do not use: scale non-functioning.						

Dedicated source check: 0.9 *mR/h* (Source to open side window at indicated position.)
Battery check reading: "BAT OK"
High Voltage: 903 *Volts*
Repairs: None

Date Received: 8/11/95 **Date Calibrated:** 8/15/95

Comments: All instrument readings are within +/- 10% for all scales used. Drift check was acceptable. Please note any applicable average scale correction factors in order to obtain accurate readings in mR/h.

Note: **This instrument must be checked for proper operation with its dedicated check source *prior* to use**. A reading as described above denotes proper operation.

Calibrated by: Christine Widmayer
Christine Widmayer, B.S.

MPC ver 2.1

Medical Physics Consultants, Inc.

RADIATION DETECTION EFFICIENCY
for Ba-133 & I-131

Date: 05/27/94

Facility: MEDICAL ARTS CENTER-W. BRANCH Instrument: WELL COUNTER

Source Activity: 0.108 uCi of Ba-133 at 10/12/76
0.034 uCi of Ba-133 at 05/27/94

74514 dpm (2.22×10^6 dpm/uCi)

Source Counts: 13990 cpm

Background Count: 24 cpm (R_b)

Net Source Count: 13966 cpm

Counting Efficiency: $\frac{74514 \text{ dpm}}{13966 \text{ cpm}} = 5.36$ dpm/cpm

$\frac{13966 \text{ cpm}}{0.034 \text{ uCi}} = 4.11 \times 10^5$ cpm/uCi

MINIMUM DETECTABLE ACTIVITY

$$MDA = (K^2/T_i) + 2K [\{R_b/T_b\} (1 + T_b/T_b)]^{1/2}$$

R_b = Background count rate in cpm
T_b = Counting Time of Background in minutes (10 min)
T_i = Counting Time of Sample in minutes (1 min)
K = 1.65 at 95% confidence level

MDA = 26 cpm
= 6.33×10^{-5} uCi
= 139 dpm

RADIATION DETECTION EFFICIENCY
for Ba-133 & I-131

Date: 05/27/94

Facility: MEDICAL ARTS CENTER-W. BRANCH Instrument: WELL COUNTER

Source Activity: 0.108 uCi of Ba-133 at 10/12/76
0.034 uCi of Ba-133 at 05/27/94

74514 dpm (2.22×10^6 dpm/uCi)

Source Counts: 13990 cpm

Background Count: 24 cpm (R_b)

Net Source Count: 13966 cpm

Counting Efficiency: $\frac{74514 \text{ dpm}}{13966 \text{ cpm}} = 5.36$ dpm/cpm

$\frac{13966 \text{ cpm}}{0.034 \text{ uCi}} = 4.11 \times 10^5$ cpm/uCi

MINIMUM DETECTABLE ACTIVITY

$$MDA = (K^2/T_t) + 2K[\{R_b/T_b\}(1 + T_b/T_b)]^{1/2}$$

R_b = Background count rate in cpm
T_b = Counting Time of Background in minutes (10 min)
T_t = Counting Time of Sample in minutes (1 min)
K = 1.65 at 95% confidence level

MDA = 26 cpm
= 6.33×10^{-5} uCi
= 139 dpm

MEDICAL ARTS CENTER

May 27,1994 14:28

CAPTUS - 500 REV 1.18 SN: 000126

	COUNTING TIME(sec)	TRIGGER LEVEL
BACKGROUND	60	2000.0 cpm
WORK AREAS	60	2000.0 dpm
UNRESTRICTED AREAS	60	2000.0 dpm
RECEIVING	60	5.0 nCi
SEALED SOURCES	60	5.0 nCi
GENERAL	60	

MEDICAL ARTS CENTER

May 27,1994 14:16

CAPTUS - 500 REV 1.18 SN: 000126

Conversion Factors

	Well	Probe
I 123	1.22	
I 131	5.36	
CO57	1.22	4.10
TC99m	1.22	
TL201	1.22	
BA133	5.36	
CS137	7.53	20.91

Date: 07/08/96 >>> Area Meter Survey Test <<<

TOLFREE MEM HOSP-MEDICAL For Date Range 07/05/96 To 07/05/96

****
TEST DATE: 07/05/96
****

SURVEY INST: MI1 BICRON 2000 #B693L Last Cal:CB/15/95
Test by Initials: CR

1 HOT LAB FLOOR.....0.06 mR/Hr
2 DOSE PREP AREA.....0.04 mR/Hr
3 IMAGING ROOM FLOOR.....0.02 mR/Hr
4 IMAGING ROOM.....0.02 mR/Hr
5 TREADMILL AREA.....0.00 mR/Hr

********** Comments **********
All Stations Were Within The Action Levels of
0.05 mR/Hr-> NON-RESTRICTED
5.00 mR/Hr-> RESTRICTED
.90 MR/HR WITHCHECK SOURCE

Surveys were performed by

Claude K Rohree RTN.

Background .01 mr/hr.

JUL 0 2 1996

Douglas E. Pattullo
Chief Executive Officer
Medical Arts Center
337 E. Houghton Avenue
West Branch, MI 48661

Dear Mr. Pattullo:

Please be advised that your requests (letter dated June 6, 1995) to terminate your License No. 21-24368-01 may not be appropriately reviewed until you submit close-out survey results to us. We cannot authorize you to release your old nuclear medicine space for unrestricted use (even by other members of your staff) until we have received and reviewed a copy of the results of your close-out survey. The survey should consist of exposure rate measurements to show that all sources of radioactive material have been removed, and contamination checks of areas where radioactive materials were used or stored. Average radiation levels associated with surface contamination and removable contamination should not exceed those specified in the enclosed decontamination guide. Please submit, at a minimum, the following information (referenced as additional information) for Control No. 399806 with your close-out survey:

a. A diagram of your old facility with survey and wipe test results keyed to specific locations.

b. The name of the person performing the survey.

c. The date the survey was performed.

d. The instrument(s) used for exposure rate measurements and for analysis of the wipes.

e. Background readings.

f. The date that the survey instrument was last calibrated.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any questions, please call the U.S. Nuclear Regulatory Commission, Region III office at (708) 829-9887 so that we can provide appropriate corrections and answers.

Sincerely,

Original Signed By
Charles F. Gill
Nuclear Materials Licensing Branch

License No. 21-26523-01
Docket No. 030-33281

Enclosure: Decontamination Guidelines

DOCUMENT NAME: M:\03033281.DF6
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OFFICE	DNMS/RIII	C							
NAME	CFGILL:jaw								
DATE	08/01/96								

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