NRC FORM 374 (7-94)

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 1 OF 7 PAGES

MATERIALS LICENSE

Amendment No. 47

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. James A. Haley Veterans Hospital	In accordance with letter dated November 27, 1996 3. License Number 09-15294-01 is amended in its entirety to read as follows:
2. 13000 Bruce B. Downs Boulevard Tampa, Florida 33612	4. Expiration Date June 30, 2001 (Extended)
	5. Docket or Reference No. 030-08879

6. Byproduct, Source, and/or Special Nuclear Material		7. Chemical and/or Physical Form		8. Maximum Amount that Licensee May Possess at Any One Time Under This License	
A.	As specified in Section 33.100, Schedule A of 10 CFR 33	A.	Any	A.	As specified in Section 33.11(b) of 10 CFR 33 (Type B broad license)
B.	Any byproduct material identified in 10 CFR 35.100	B.	Any radiopharmaceutical identified in 10 CFR 35.100	B.	As needed
C.	Any byproduct material identified in 10 CFR 35.200	C.	Any radiopharmaceutical identified in 10 CFR 35.200	C.	As needed
D.	Iodine 131	D.	Any unsealed form for preparation and administration as specified in §35.300	D.	55.5 gigabecquerels (1.5 curies)
E.	Any byproduct material with a half-life less than 120 days except iodine 131	E.	Any form for use described in §35.300 initially distributed in accordance with a specific license issued pursuant to 10 CFR 32.72 or a specific license issued to the manufacturer by an Agreement State pursuant to equivalent State regulations.	E.	As needed, not to exceed 3.7 gigabecquerels (100 millicuries) per container
F.	Any byproduct material identified in 10 CFR 35.400	F.	Any sealed brachytherapy source identified in 10 CFR 35.400 and registered pursuant to 10 CFR 32.210	F.	As needed

200020

ML20

License Number 09-15294-01

Docket or Reference Number 030-08879

MATERIALS LICENSE
SUPPLEMENTARY SHEET

Amendment No. 47

6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum amount that licensee may possess at any one time under this license
G. Any byproduct material identified in 10 CFR 35.500	G. Any diagnostic sealed source identified in 10 CFR 35.500 and registered pursuant to 10 CFR 32.210	G. 2 sources of any byproduct material identified in 10 CFR 35.500, no single source to exceed the limits for the compatible device specified in Item 9
H. Nickel 63	H. Sealed, foil, or plated source contained in electron capture detector registered pursuant to 10 CFR 32.210	H. No single source to exceed 15 millicuries
I. Any byproduct material identified in 10 CFR 31.11	I. Any prepackaged kits	I. As needed
J. Cesium 137	**J. Sealed Source (New England Nuclear Model No. NER-401H)**	**J. A single source, not to exeed 50 millicuries**

9. Authorized use:

A. For laboratory research including animal studies pursuant to the provisions of 10 CFR 30.4.
B. Medical use identified in 10 CFR 35.100.
C. Medical use identified in 10 CFR 35.200.
D. and E. Any radiopharmaceutical therapy approved in §35.300
F. Medical use identified in 10 CFR 35.400.
G. One source contained in any compatible diagnostic device which has been registered pursuant to 10 CFR 32.210 for medical use identified in 10 CFR 35.500 and one source for possession incident to source exchange.
H. For use in gas chromatography devices for sample analysis.
I. Clinical *in vitro* studies.
J. For storage only.

10. A. Licensed material shall be used at the licensee's facilities located at 13000 Bruce B. Downs Boulevard, Tampa, Florida.

B. Licensed material listed below may also be used at the VA Medical Center Diagnostic and Treatment Center (Formerly U.S. Naval Hospital), 5201 Raymond Street, Orlando, FL 32813-8221 in accordance with the terms and conditions of this license and the licensee's letter dated August 29, 1994, as supplemented June 2, 1995.

(1) Materials identified in 10 CFR 35.100, 35.200 (except xenon 133) for medical use specified in items 9. B and C of this license, and

(2) Materials identified in 35.300 for medical use specified in item 9.D, excluding the treatment of thyroid carcinoma, and limiting all other uses of iodine to capsule form only with doses to an individual patient not to exceed 30 millicuries.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 09-15294-01

Docket or Reference Number 030-08879

Amendment No. 47

(cont.) CONDITIONS

11. A. The Radiation Protection Officer (RPO) for this license is Michael H. Courey, M.A. or in his absence Ronald J. Schnieders, alternate RPO.

B. Under the direction of the licensee's Radiation Protection Officer, Donald N. Johnson, D.O. is the designated site Radiation Safety Officer for daily radiation safety activities at VA Medical Center Diagnostic and Treatment Center (Formerly U.S. Naval Hospital), Orlando.

12. A. Licensed material for non-medical use shall be used by, or under the supervision of individuals designated by the licensee's Radiction Safety Committee. The licensee shall maintain records of individuals designated as users for three years after the individual's last use of licensed material.

B. Licensed material for medical use shall be used by, or under the supervision of:

(1) Louis E. Tenorio, M.D.	Medical uses in 10 CFR 35.100, §35.200, §35.300, §35.500 and §31.11.
(2) Sumesh Chandra, M.D.	Medical uses in 10 CFR 35.100, §35.200, §35.300, §35.500 and §31.11.
(3) Jay L. Friedland, M.D.	Medical uses in 10 CFR 35.400.
(4) Ian Tyson, M.D.	Medical uses in 10 CFR 35.100, §35.200, §35.300, §35.500, and §31.11.
(5) Rodolfo C. Cubarrubia, M.D.	Diagnostic nuclear cardiology studies
(6) Michael H. Courey, M.A.	Non-medical uses associated with radiation protection duties.
(7) Harvey M. Greenberg, M.D.	Medical uses in 10 CFR 35.400.
(8) Babu Zachariah, M.D.	Medical uses in 10 CFR 35.400.
(9) Andrea Trotti, III, M.D.	Medical uses in 10 CFR 35.400.
(10) Robert Blaine Ketch, M.D.	Medical uses in 10 CFR 35.100, §35.200, §35.300, §35.500 and §31.11
(11) Edward A. Eikman, M.D.	Medical uses in 10 CFR 35.100, §35.200, §35.300, §35.500 and §31.11.
(12) Donald N. Johnson, D.O.	Medical uses in 10 CFR 35.100 and §35.200.
(13) J. Dennis Flynn, M.D.	Medical uses in 10 CFR 35.100 and §35.200.
(14) James L. Pearlman, M.D.	Medical uses in 10 CFR 35.400.
(15) Henry Wagner, Jr., M.D.	Medical uses in 10 CFR 35.400.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

14. A. (1) Sealed source(s) identified in Item 7, shall be tested for leakage and/or contamination at intervals not to exceed 6 months. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.

A. (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

B. Any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.

C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U. S. Nuclear Regulatory Commission, Region II, Division of Nuclear Materials Safety, Nuclear Materials Licensing/Inspection Branch, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30323. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

15. Experimental animals administered licensed material or their products shall not be used for human consumption.

16. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

17. The licensee shall maintain records of information important to safe and effective decommissioning at the VA Medical Center, Tampa, Florida in Condition 10 above pursuant to the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.

(cont.) CONDITIONS

18. In addition to the possession limits in item 8, the licensee shall further restrict the possession of licensed material as follows:

A. For unsealed sources to quantities less than 10^4 times the applicable limits in Appendix C, 10 CFR 20 as specified in 10 CFR 30.35(d).

B. For sealed sources, to quantities less than 10^{10} times the applicable limits in Appendix C, 10 CFR 20 as specified in 10 CFR 30.35(d).

19. Notwithstanding the requirements of 10 CFR 35.49(a) the licensee may receive and prepare byproduct material for medical use in accordance with the provisions of an FDA approved IND.

20. Notwithstanding the requirements of 10 CFR 35.49(a) and (b), 10 CFR 35.100, 10 CFR 35.200, 10 CFR 35.300, 10 CFR 35.400 and 10 CFR 35.500 the licensee may use for any medical use any byproduct material or reagent kit. The licensee shall possess and use byproduct material for medical use in accordance with the prescriptive and performance criteria in the other sections of 10 CFR 35. This does not relieve the licensee from complying with applicable United States Food and Drug Administration (FDA) and other Federal and State requirements.

21. The licensee is authorized to hold non-medical waste containing licensed material with a physical half-life of less than 91 days for decay-in-storage before disposal in ordinary trash provided:

A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.

B. Radioactive waste with half-lives between 65 and 91 days shall be segregated from waste with half-lives of 65 days or less.

C. Radioactive waste shall be compatible with the packaging containing the waste.

D. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate survey meter set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

E. A record of each disposal permitted under this license condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

22. Maintenance, repair, cleaning, replacement and disposal of foils or plated sources contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.

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

License Number 09-15294-01

Docket or Reference Number 030-08879

Amendment No. 47

MATERIALS LICENSE SUPPLEMENTARY SHEET

(cont.) CONDITIONS

26. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below, except for minor changes in the medical use radiation safety procedures as provided in 10 CFR 35.31. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

A. Application dated May 11, 1990

B. ALARA Program dated April 5, 1990

C. Letters (including enclosures/attachments) dated:

(1) July 23, 1991	
(2) December 10, 1991	
(3) January 13, 1992	[FAX with enclosed State of Florida license]
(4) January 14, 1992	[FAX regarding decay-in-storage]
(5) January 24,1992	[Decommissioning of Room 18, Bldg. 2]
(6) March 17, 1992	[Training and experience of alternate RPO]
(7) August 17, 1992	
(8) January 18, 1994	[add Dr. Eikman]
(9) May 26, 1994	[Including the document titled "RULES AND REGULATIONS GOVERNING THE PRACTICE AND MANAGEMENT OF RADIATION AT JAMES A. HALEY VETERANS' HOSPITAL, TAMPA, FLORIDA", revised May 1994]
(10) August 29, 1994	[Revision to add a satellite location]
(11) October 20, 1994	[relating to EPA report about environmental releases]
(12) June 2, 1995	[revised drawing of Orlando room use, notification of beginning services at Orlando]
(13) December 8, 1994	[modification of Authorized User request]
(14) January 30, 1995	[Status of Authorized Users]
(15) June 21, 1995	[Status of Authorized Users]
(16) October 27, 1995	[Drawings of renovation of Nuclear Medicine Department)
(17) July 6, 1995	[add Dr. Flynn]
(18) March 1, 1996	[NRC letter which extends expiration date in accordance with 10 CFR 30.36]
(19) September 6, 1996	[add users and delete Dr. Silbiger]
(20) November 27, 1996	[as-built drawing for renovated NM Dept., measured air flows, addition of Cs-137 source]

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

JAY L. HENSON

DATE FEB 3 1997 BY Jay L. Henson

Region II, Division of Nuclear Materials Safety
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323-0199

N:\MLICENSE\09-15294.A47

2/4/97

February 3, 1997

James A. Haley Veterans' Hospital
ATT: Richard A. Silver
Director
13000 Bruce B. Downs Blvd.
Tampa, FL 33612

SUBJECT: TRANSMITTAL AND EXPLANATION OF MATERIALS LICENSE
(REFERENCE CONTROL NO. 257304; DOCKET NO. 030-08879)

Dear Mr. Silver

Enclosed is Amendment No. 47 to License No. 09-15294-01 issued in response to your letter dated November 27, 1996. Revisions to your license are printed in **BOLD** typeface. Please review this document carefully and be sure that you understand all of its provisions.

If you have questions about this letter or your license, please call me at (404) 331-7438.

Sincerely,

/s/

José M. Díaz Vélez
Materials License Reviewer
Division of Nuclear Materials Safety

Enclosure:
Amendment No. 47

SEND TO PUBLIC DOCUMENT ROOM?			YES (circled)	NO					
OFFICE	RII:DNMS		RII:DNMS		RII:DNMS				
SIGNATURE									
NAME	JDiaz		JHenson		JPotter				
DATE	2/3/97		2/3/97		2/4/97		2/ /97		2/ /97
COPY?	YES	NO	YES	NO (circled)	YES	NO	YES	NO	YES	NO

OFFICIAL RECORD COPY DOCUMENT NAME: G:\DNMS\MLIB2\LICLTR\257304.JMD

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

Program Code: 03611
Status Code: 0
Fee Category: EX 7B
Exp. Date: 20010630
Fee Comments: _____
Decom Fin Assur Reqd: Y

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
   Applicant/Licensee: V. A., DEPARTMENT OF
   Received Date: 961203
   Docket No: 3008879
   Control No.: 257304
   License No.: 09-15294-01
   Action Type: Amendment

2. FEE ATTACHED
   Amount: _____
   Check No.: _____

3. COMMENTS

Signed _____
Date _____

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /__/)

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:
   Amendment _____
   Renewal _____
   License _____

3. OTHER _____
   _____

Signed _____
Date _____

FAX Mail

For: Diane Heim
NRC II

From: Cindy

Department of Veterans Affairs
National Health Physics Program
915 North Grand Boulevard
St. Louis, MO 63106

Fax #: (314) 289-7058
Voice : (314) 289-6519

Notes:

Have a great weekend!

Date : 12-6-96

Time :

Pages : 4

DEPARTMENT OF VETERANS AFFAIRS
Medical Center
St Louis MO 63125

December 6, 1996

In Reply Refer To:

U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 2900
Atlanta, GA 30323

SUBJECT: NRC License No. 09-15294-01

The enclosed correspondence from the Tampa, Florida VA Medical Center has been received and is forwarded to your office for processing. If there are questions, please contact the facility.

Please provide a copy of any correspondence relative to licensing actions for this Medical Center to:

Department of Veterans Affairs
Health Physics Programs (115HP)
915 North Grand Blvd.
St. Louis, MO 63106

Sincerely,

Cindy Bukowsky

for Francis K. Herbig
Health Physics Programs

DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Tampa FL 33612

NOV 27 1996

In Reply Refer To: 673/11R
License # 09-15294-01

David J. Collins
Health Physicist
U.S. Nuclear Regulatory Commission
Region II
Suite 2900
101 Marietta Street
Atlanta, Georgia 30323

Information relative to license activities and a request for license amendment is being made.
Please reference the attached memorandum.

Thank you for your assistance in this matter.

Richard A Silver

Richard A. Silver
Director

OPTIONAL FORM 99 (7-90) For your approval
FAX TRANSMITTAL # of pages ▶ 3

To Cindy	From Diane
Dept./Agency	Phone # 404-331-4673
Fax # 314-287-2098	Fax # NRC Atl

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

257304

DEPARTMENT OF VETERANS AFFAIRS
James A. Haley Veterans' Hospital
13000 Bruce B. Downs Blvd
Tampa FL 33612

NOV 2 7 1996

In Reply Refer To: 673/11R
09-15294-01
Memorandum

David J. Collins
Health Physicist
U.S. Nuclear Regulatory Commission
Region II
Suite 2900
101 Marietta Street
Atlanta, Georgia 30323

The following items of communication are provided relative to license use of byproduct material.

1. Followup on the communication dated 10/27/96 as referenced in amendment #46, Item 26 C (15), is herein provided:

a. Renovation of the area is complete. The "as-is" condition is the same as the "as-planned" with exception of the following:

(1) Two exhaust fans have been installed to increase the negative air flow of rooms 3B-310-312 and 3B-307-308 (see attached air flow measurements). The exhaust motors (2) are located above the ceiling tile in room 3B-310-312 which pulls the air flow to a location adjacent to the outside wall with push air flow through the wall to outside the building (see drawing). This additional ventilation is in addition to the previous air flow/ventilation configuration which did not undergo significant change. Air flow in these two rooms is not recirculated into the other parts of the facility. The outside exhaust area is the restricted outside roof of the second floor. Restricted door access to this area has a sign in placed indicating the hazard. Appropriate caution signs are placed in this outside area. No air intake vents are in a proximity of concern relative to drawing in of exhausted 133-Xenon. Clearance rates for 133-Xenon are being calculated for both areas and will be posted. Communication with Wade Loo of your office on 11/14/96 was made relating to the use of 133-Xenon under these conditions.

(2) Installation and relocation of Imaging equipment within the Nuclear Medicine Service renovated areas is still in process. A new Siemens Multi-Spec-3 Nuclear Medicine Imaging device awaits installation into 3B-310-312.

(3) The Darkroom 3B-309 was deleted. The walls adjacent to 3B-310-312 were removed and the space is now part of room 3B-310-312.

(4) Room 3A-334 will be used for Thyroid Uptake purposes and designated as a restricted area.

2. Request for amendment to the license relative to the possession and use of a 137-Cs sealed source; New England Nuclear, Model No. NER-401H, Serial # Cs-692, Activity = 47.1 millicuries as of Sept., 1978. Activity as of Sept., 1996 = 31.07 millicuries (See enclosed Technical data sheet).

a. As communicated with Wade Loo of your office on 11/25/96 as a self identified oversight, it has come to our attention that the particular sealed source as licensed under this facility license (Item 6G) which expired on 9/30/90 was not included on the license renewal application dated 5/11/1990. This has resulted in the lack of inclusion of the sealed source in the current license 5 year extension which expires on 6/30/2001.

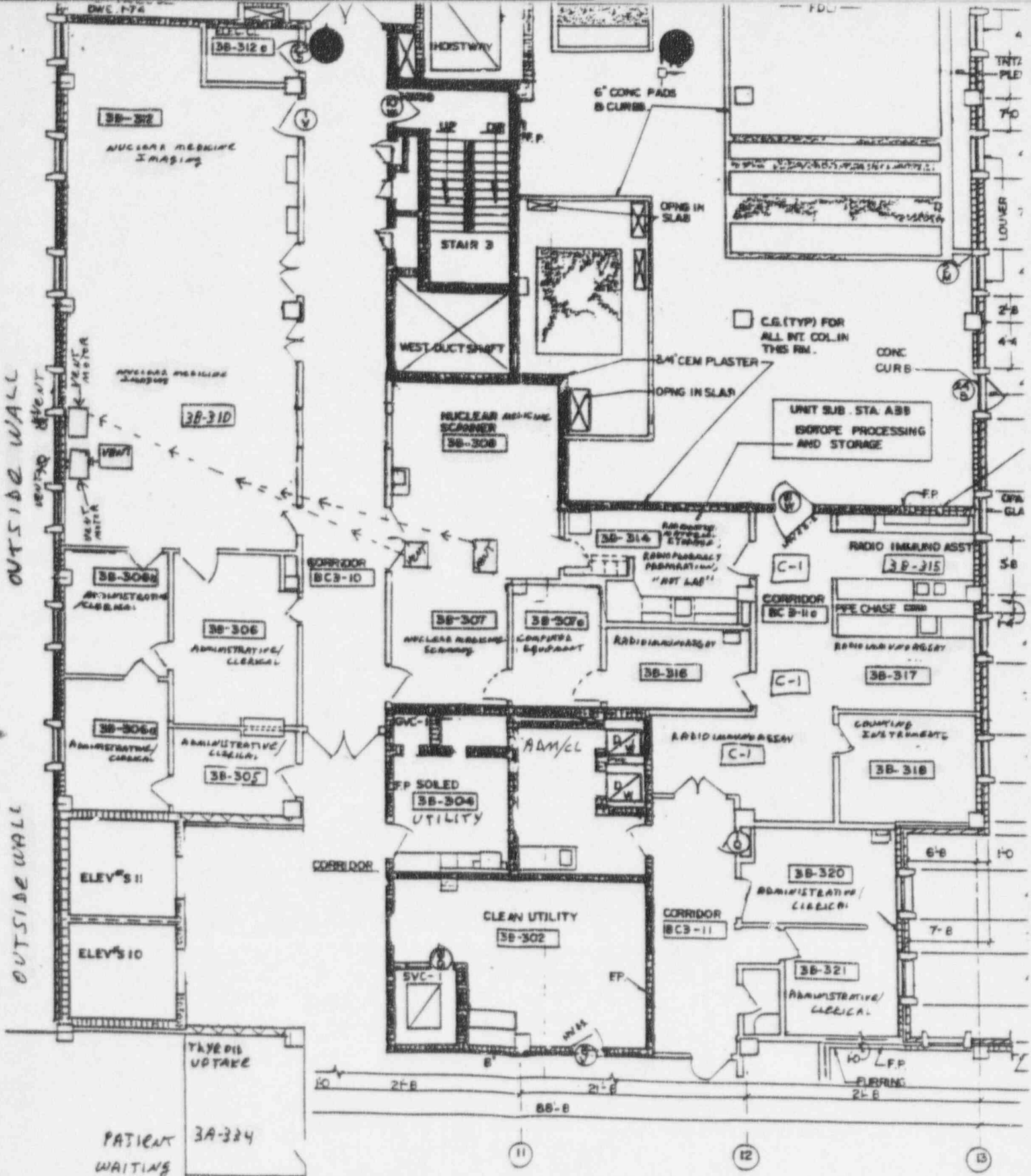
b. The source has remained stored in the facility waste and storage room 49 or 06. There has been no use of the sealed source since 7/12/1983. The source has undergone continual quarterly inventory.

Thank you for your assistance in this matter.

Richard A Silver

Richard A. Silver
Director

257304



AS-IS

THIRD FLOOR PLAN

SCALE 1/8"=1'0

3 WEST

11-25-96

RE

AIR SURVEY

Date: 11-14-96 Inspector: D. McGUAID

Air In (Supply) ↓ Air Out (Exhaust) ↓

Bldg I, Room 3B-308-307

Treatment Area 160 CFM

Computer Room 95 CFM

EAST SUPPLY 50 CFM

NORTH VENT = 390 CFM
SOUTH VENT = 400 CFM
DOOR VENT INTO 3B-314 = 450 CFM

Neg. Flow = 935 CFM

Bldg I, Hot Lab (3B-314)

Corner Diffuser 320 CFM

Center Diffuser 150 CFM

DOOR VENT FROM 3B-308 = 450 CFM

Area Total 920 CFM

Hood 1717 CFM

Hood 243 LFM

Neg. Flow = 797 CFM

Bldg I, Room 3B-312-310

Room Center West 95 CFM

Room Center East 240 CFM

North Wall East 0 CFM

North Wall Center 165 CFM

North Wall West 75 CFM

East 60 CFM

Center 70 CFM

West 650 CFM

FAR EAST 460 CFM

Supply Total 575 CFM

Exhaust Total 1240 CFM

Neg. FLOW = 665. CFM

Bldg 2, Room 50 Hood

Hood 358 CFM

Hood 224 LFM

Neg. FLOW = 358. CFM

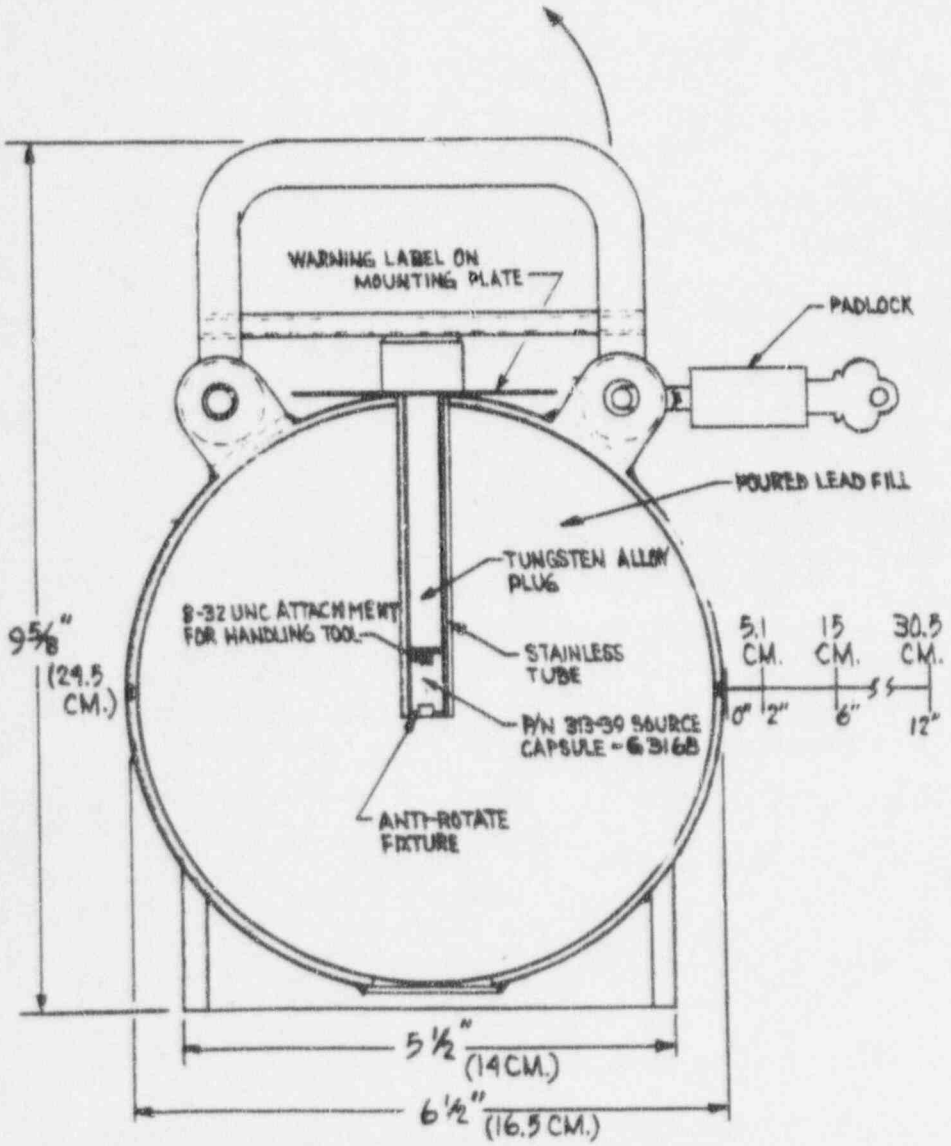
Michael H. Caruso
Radiation Protection Officer 11.15.96

New England Nuclear
549 Albany Street, Boston, Massachusetts 02118
Customer Service 617-482-9595

TECHNICAL DATA

INSTRUCTION SHEET FOR MODELS NER-400H AND NER-401H CALIBRATED SOURCE AND SHIELD SETS

The NEN Models 400H and 401H calibrated source and shield sets are designed and constructed for easy use and minimum radiation exposure. The shield and source weight of 27 kg (~60 lbs) can easily be transported using the handle. The padlock prevents any unauthorized use of the calibrated source. Pictured below is the shield and source in the storage mode with approximate dose rates given in the table.



STORAGE-RADIATION DOSE RATES
(mR/hr/mCi)

Source Nuclide	Co-60	Cs-137
At Shield Surface	2.8	0.01
2" (5.1cm) From Surface	1.0	<0.01
6" (15cm) From Surface	0.31	<0.01
12" (30.5cm) From Surface	0.11	<0.01

Dose rates measured using TLD LiF chips 1.25 cm^2 (1/2" dia.)

Issued to: Chief Supply Service #A89885

V.A. Hospital 13,000 N. 30th St.

Tampa, Fl. 33612

Model No. NER-401H

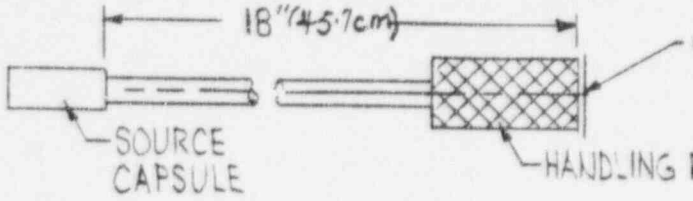
Serial No. Cs-692

Activity 47.1 mCi

Calibration Date Sept. 1978

To remove source from storage shield, first, place shield skirt on horizontal surface. Then unlock padlock and remove it from padlock hasp. After lifting the shield handle, pull out the tungsten plug. Insert source handling tool, thread side first, into the tube and thread it into the source capsule. (NOTE: The anti-rotate fixture will prevent rotating the source capsule.) You may now remove the source.

Reverse the above procedure to return the source into the storage shield.



calculated dose rate:

^{60}Co ~6.2 mR/hr/mCi

^{137}Cs ~1.5 mR/hr/mCi

The Certificate of Calibration which accompanies the NER-400H and NER-401H states the calibrated dose rate value (± 4%)* of the source on the date of calibration. This dose rate value will diminish with time (t) as a function of the radionuclide decay ($t_{\frac{1}{2}}$), by the expression $I = I_o e^{\frac{-(0.693)t}{t_{\frac{1}{2}}}}$

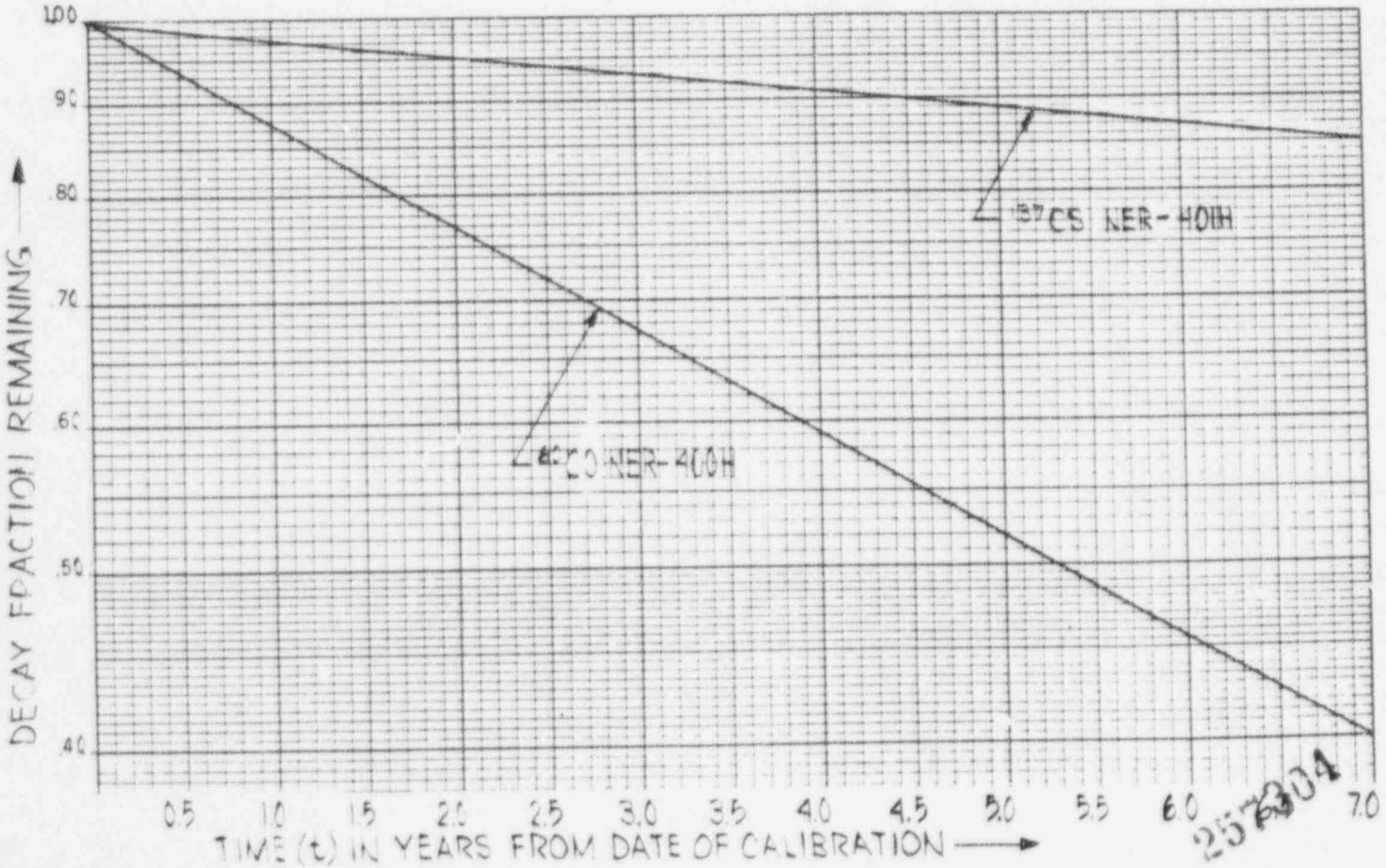
I = activity being determined for a given date

I_o = activity at the date of calibration

t = elapsed time from date of calibration

$t_{\frac{1}{2}}$ = 5.25 years for ^{60}Co and 30.0 years for ^{137}Cs.

The graph below describes the fraction remaining after a given time from the date of calibration.



*N.B.S. traceable

11-R

DEPARTMENT OF VETERANS AFFAIRS
JAMES A. HALEY VETERANS HOSPITAL
13000 BRUCE B. DOWNS BLVD.
TAMPA, FL 33612-4798

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

PRESORTED FIRST CLASS

TAMPA NOV 27 96 $00.29⁵

**11-29-96 FCM PRESORT BLUE TAMPA FL 336

David J. Collins, Health Physicist
U.S. Nuclear Regulatory Commission
Region II
Suite 2900
101 Marietta Street
Atlanta, Georgia 30323

96 DEC -3 A9:07

126

AUTO