



Richmond Eye and Ear Hospital

1001 East Marshall Street • Richmond, Virginia 23219 • (804) 775-4500

May 4, 1989

Mr. Charles Hosey
Section Chief
U.S. Nuclear Regulatory Commission, Reg.
101 Marietta Street, N.W.
Suite 2900
Atlanta, GA 30302

Dear Mr. Hosey:

Please be advised that we wish to terminate our Materials License number 45-23055-01 effective immediately.

We no longer possess an operational nuclear device using the iodine 125 radiation source outlined in our materials license.

As per your instructions on May 2, 1989, I am enclosing the following information:

A copy of our shipping record indicating how the source was shipped, the date shipped, and to whom it was shipped;

A copy of the sealed source leak test performed on the source before it was shipped; and

A copy of the license to receive nuclear materials for disposal from the company to whom we shipped the spent radiation source.

Thank you for your assistance in this matter. If you have questions, please call me.

RECEIVED BY LRMS	
Date	5/15/89
Log	May 3.11
By	Kurami
Date Completed	5/15/89

RGN/S

Sincerely,

Robert G. Notarianni
Administrator

cc: Donald Tellefsen, Director of Diagnostic Services

Enclosures

9002150110 890524
REG2 LIC30
45-23055-01 PDR

FEE EXEMPT

terminated



United Parcel Service

PICKUP RECORD

DATE 12/24/89

REC'D FROM

PICKUP RECORD NO.

906522261

ENTER EACH PACKAGE ON A SEPARATE LINE. IF RECORD IS VOIDED, PLEASE GIVE TO DRIVER. INCREASE FRACTIONS OF A POUND TO NEXT FULL POUND.

STAMP YOUR UPS SHIPPER NUMBER

ELON

REFERENCE NO	NAME	STREET	CITY	STATE	ZIP CODE	TYPE SERVICE		DEQUIRED VALUE *** IN EXCESS OF \$100.00	COST**	
						GROUND				AIR
						NO. OF BOXES	WEIGHT (LBS)			
1			Richard	VA	21322	2	1			
2				VA	21322	2	1			
3				VA	21322	2	1			
4				VA	21322	2	1			
5				VA	21322	2	1			
6				VA	21322	2	1			
7				VA	21322	2	1			
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9				VA	21322	2	1			
10				VA	21322	2	1			
11				VA	21322	2	1			
12				VA	21322	2	1			
13				VA	21322	2	1			
14				VA	21322	2	1			
15				VA	21322	2	1			

RECEIVED BY *[Signature]*

PICKUP TIME 11:30

NO. OF PAGES 7

NO. OF CALLS 0

REV. 4-87 (S.M. 8-3 9-87) M

* OS (O) service applies if fee over 25 lbs and more than 64 inches in length and girth combined.
 ** Unless a greater rate is declared in writing on this receipt, the price for heavy parcels and items that the estimated value of each package or article not included in a C.O.D. is marked by the shipper.
 *** Customer's check accepted at shipper's risk unless otherwise noted on C.O.D. Tag.

*** CERTIFICATE ***

SEALED SOURCE LEAKAGE TEST

SOURCE

Lixiscope iodine-125 sealed source #7434.

LOCATION/OWNER

Richmond Eye and Ear Hospital
1001 East Marshall Street
Richmond, Virginia 23219

TEST DESCRIPTION

Swipes of external surfaces of sources assembly and a carbon absorption test of the source container for iodine-125 leakage and/or other radioactive contamination.

TEST DATE

March 10, 1989

TEST EQUIPMENT

Nuclear Chicago single-channel analyzer with a NaI scintillation well detector and a Nuclear Data multi-channel analyzer with a NaI scintillation well detector.

Energy Range

Approximately 0.1 MeV to 1.0 MeV (gamma)

Calibration Source

Cesium-137, 0.0687 microcuries

Efficiency

Approximately 5 to 15 percent

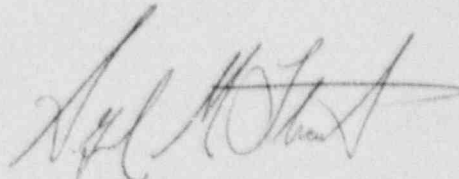
Minimum Detectable Activity

2.4E-4 microcuries at 0.95 CI (gamma).

RESULTS

All swipes showed no removable contamination above background counting rate. Removable and/or absorbed contamination was less than 1.3E-4 microcuries.

SA/PPD
APR 20TH



Alfred M. Strash, Ph.D.
ABR Certified Physicist

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

RADIOACTIVE MATERIAL LICENSE

DIVISION OF NUCLEAR MATERIALS
1035 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62704

Pursuant to the Illinois Radiation Protection Act and the rules and regulations in 32 Illinois Administrative Code promulgated thereunder, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess and transfer radioactive material(s) listed herein; and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Illinois Department of Nuclear Safety now or hereafter in effect and to any conditions specified in the license.

LICENSEE Lixi, Incorporated 1438 Brook Drive Downers Grove, Illinois 60515	LICENSE NUMBER	12-18215-01(IL)	EXPIRATION DATE	January 31, 1989
	AMENDMENT NUMBER	<input type="checkbox"/> INITIAL LICENSE 19	REFERENCE NUMBER	9145566
	<input type="checkbox"/> Initial License Amendment through Amendment constitute a complete license. <input checked="" type="checkbox"/> PREVIOUS AMENDMENTS ARE VOID.			

Attention: Robert J. Savini
Executive Vice President

In accordance with letter dated March 11, 1988, License Number 12-18215-01(IL) is amended in its entirety:

ITEM	RADIOISOTOPE	CHEMICAL and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT
A.	Any radio-nuclide with Atomic No. 1-83, inclusive	Sealed Sources	1 Ci	5 Ci
B.	Pm-147	Sealed Sources	5 Ci	10 Ci
C.	Tm-170	Sealed Sources	50 Ci	60 Ci
D.	Am-241	Sealed Sources	500 mCi	2 Ci
E.	Cf-252	Sealed Sources - Amersham Model CVN5	2.7 mCi	1 source, not to exceed 5 μ grams
F.	Co-57	Any commercially available calibration or reference source evaluated by an Agreement State or a Licensing State	5 mCi	Any
G.	Au-195	Any commercially available calibration or reference source evaluated by an Agreement State or a Licensing State	3 mCi	Any

* μ Ci-Microcurie; mCi-Millicurie; Ci-Curie

BY:	DATE	PAGE	OF	PAGES
Steven C. Collins, Chief IL 473-0058	March 24, 1988	1		7

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
RADIOACTIVE MATERIAL LICENSE

LICENSEE Lixi, Incorporated		LICENSE NUMBER 12-18215-01(IL)	AMENDMENT NUMBER <input type="checkbox"/> INITIAL LICENSE 19	EXPIRATION DATE January 31, 1989
ITEM	RADIOISOTOPE	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT

H.	Ra-226	Any commercially available calibration or reference source evaluated by an Agreement State or a Licensing State	100 Ci	Any
I.	I-125	Sealed Source - Amersham Model IMC.P2 or AECL Model C-324	650 mCi	Any; No source to exceed 500 mCi at time of distribution
J.	Am-241	Sealed Source - Amersham Model AMC.17	375 mCi	Any

AUTHORIZED USE:

A thru E. Research and development of imaging devices; calibration and testing of radiation detection, measurement and imaging equipment.

F.thru H. Calibration and testing of radiation detection instrumentation.

I. and J. For storage, use and/or possession incident to:

- (1) Installation into or removal from Lixiscope Models LS-80-X, LS-82-X, LSM-80-X and LSM-82-X series devices.
- (2) Repairing, servicing, testing, demonstrating and training in Lixiscope device use and operation.
- (3) Sealed source leak testing and radiation survey performance of Lixiscope devices and associated facilities.
- (4) Picking up, packaging and transferring of sealed sources received from customers for transfer to authorized recipients.
- (5) Distribution to veterinarians and other persons authorized to receive the licensed material pursuant to the terms and conditions of specific licenses issued by the U.S. NRC or an Agreement State.

*Microcurie; mCi-Millicurie; Ci-Curie

PAGE 1 SIGNED BY:

Steven C. Collins, Chief

173-0059

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STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
RADIOACTIVE MATERIAL LICENSE

CORRECTED COPY

LICENSEE Lixi, Incorporated		LICENSE NUMBER 12-18215-01(IL)	AMENDMENT NUMBER <input type="checkbox"/> INITIAL LICENSE 19	EXPIRATION DATE January 31, 1989
ITEM	RADIONUCLIDE	CHEMICAL and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT

CONDITIONS

1. Each sealed source or device distributed under the license shall not contain, as of the assay date, more than the quantity of radioactive material listed in the following table. This condition pertains only to the distribution of sealed sources and devices listed in the following table:

	<u>Hydraulic Sourcehead Model Number</u>	<u>T-Series Sourcehead Model Number</u>	<u>Radioactive Material</u>	<u>Maximum Quantity</u>
A.	21	TI21	I-125	500 mCi
B.	31	TI31	I-125	500 mCi
C.	32	TI32	I-125	500 mCi
D.	42	TI42	I-125	500 mCi
E.	62	TI62	I-125	500 mCi
F.	82	TI82	I-125	500 mCi

2. A. Radioactive material may be used at the licensee's facilities located at 1438 Brook Drive, Downers Grove, Illinois.
- B. Activities authorized for use of license schedule Items I. and J., (2)-(5) may be conducted at 1438 Brook Drive, Downers Grove, Illinois and at temporary job sites of the licensee in the State of Illinois
- C. Radioactive material specified in Items A. thru H. of the license schedule may be used by Bruce Van Pelt or Ed Polz at temporary job sites of the licensee anywhere in the State of Illinois, in accordance with procedures specified in letter dated November 16, 1984.
3. A. Radioactive material listed in license schedule Items A., B., D., and F. thru J. shall be used by, or under the supervision and in the physical presence of Michael J. Garcia, Joseph R. Pascente, Robert J. Savini, Peter G. Lang, Warren McGonnagle, Bruce Van Pelt, Ed Polz or any other paid employee or paid consultant designated by the Radiation Safety Officer who has completed the Stan A. Huber Consultants, Inc. training course or other applicable training in accordance with letters dated September 13, 1983, September 30, 1983 and December 14, 1983.
- B. Radioactive material listed in license schedule Items C. and E. shall be used by Bruce Van Pelt or Ed Polz.

* μ Ci-Microcurie; mCi-Millicurie; Ci-Curie

PAGE 1 SIGNED BY:

Steven C. Collins, Chief
IL 473-0059*Steven C. Collins*

DATE

April 6, 1988

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STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
RADIOACTIVE MATERIAL LICENSE

LICENSEE Lixi, Incorporated	LICENSE NUMBER 12-18215-01(IL)	AMENDMENT NUMBER <input type="checkbox"/> INITIAL LICENSE 19	EXPIRATION DATE January 31, 1989	
ITEM	RADIOISOTOPE	CHEMICAL and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT

4. The Radiation Safety Officer for the activities authorized by this license is Bruce Van Pelt.
5. The licensee shall comply with the provisions of the regulations contained in 32 Illinois Administrative Code.
6. A. (1) Each sealed source acquired from another person and containing radioactive material, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination before use. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to transfer, the sealed source received from another person shall not be put into use until tested.
 - (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. Except for alpha sources, the periodic leak test required by this condition does not apply to sealed sources that have been removed from use and are in protective and secure storage. The sources excepted from this test shall be tested for leakage prior to use or transfer to another person, unless they have been leak tested within six (6) months prior to the date of use or transfer.
- C. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to use or transfer as a sealed source. If the inspection or test reveals any construction defects or 0.005 microcurie or greater of contamination, or in the case of radium sources, the presence of 0.005 microcurie of external radon-daughter contamination or, the escape of radon at the rate of 0.001 microcurie or greater per twenty-four (24) hours, the source shall not be used or transferred as a sealed source until it has been repaired, decontaminated and retested.
- D. Each sealed source containing radioactive material, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed 3 months.
- E. Leak tests shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample, or in the case of radium sources, the presence of 0.005 microcurie of external radon-daughter contamination or the escape of radon at the rate of 0.001 microcurie per twenty-four (24) hours. The test samples shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored upon which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department.

* μ CI-Microcurie; mCI-Milllicurie; CI-Curie

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Steven C. Collins, Chief
IL 473-0059

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STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
RADIOACTIVE MATERIAL LICENSE

LICENSEE Lixi, Incorporated		LICENSE NUMBER 12-18215-01(IL)	AMENDMENT NUMBER <input type="checkbox"/> INITIAL LICENSE 19	EXPIRATION DATE January 31, 1989
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(Condition 6. continued)

- F. If the test required by subsection A. or D. of this condition reveals the presence of 0.005 microcurie or more of removable contamination, or in the case of radium sources, the presence of 0.005 microcurie of external radon-daughter contamination or the escape of radon at the rate of 0.001 microcurie or greater per twenty-four (24) hours, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired, or to be disposed of in accordance with the 32 Illinois Administrative Code. A report shall be filed within five (5) days of the test with the Division of Nuclear Materials, Illinois Department of Nuclear Safety, describing the source and equipment involved, the test results and the corrective action taken.
7. Sealed sources containing radioactive material shall not be opened.
 8. The licensee shall conduct a physical inventory at intervals not to exceed six (6) months to account for all radioactive material sources and/or devices received and possessed under the license. The inventory shall include the radionuclide, activity, manufacturer, model number, serial number or activity assay date, the location of the sealed sources, date of the inventory, and the identity of the person(s) performing the inventory. Records of inventories shall be maintained for two (2) years from the date of each inventory.
 9. The transport of radioactive material or delivery of radioactive material to a carrier for transport shall be in accordance with the provisions of Part 341 of 32 Illinois Administrative Code.
 10. The licensee shall store all devices, utilized at temporary job sites in accordance with Condition 2.C., in a locked portion of the user's transport vehicle away from the passenger compartment when not in use or stored at the site.
 11. This license does not authorize distribution to persons exempted or licensed pursuant to Sections 330.30, 330.40, 330.210 or 330.220(d) of 32 Illinois Administrative Code.
 12. Radioactive material shall not be used in or on human beings.
 13. Radioactive material shall not be used in products distributed to the general public.
 14. The licensee shall not store any devices containing licensed material in motel/hotel rooms without the presence of an authorized user.
 15. The licensee is authorized to distribute the sealed sources or devices identified in Condition 1. to persons licensed pursuant to 32 Ill. Adm. Code 330.260(b) and 330.260(c)(2)(C), Group VI of App.C., or under equivalent licenses of the U.S. NRC or an Agreement State.

* μ Ci-Microcurie; mCi-Millicurie; Ci-Curie

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Steven C. Collins, Chief
IL 473-0059

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STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY
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CORRECTED COPY

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16. Any proposed changes in packaging, labeling, shielding or use and storage instructions for licensed material specified in Condition 1., shall be submitted to this Department for review.
17. The licensee is authorized to distribute licensed material listed in Condition 1. from 1438 Brook Drive, Downers Grove, Illinois.
18. Except as specifically provided otherwise by this license, the licensee shall manufacture, package, label and distribute licensed material described in Condition 1. in accordance with statements, representations, and procedures contained in or enclosed with, the documents listed below. The regulations contained in 32 Illinois Administrative Code shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
 - A. Application dated September 24, 1982.
 - B. Letters dated December 27, 1982, December 14, 1984, and February 25, 1985.
 - C. Letters, with attachments dated:

November 6, 1982	November 16, 1984
December 9, 1982	November 20, 1984
January 6, 1983	June 6, 1985
March 1, 1983	July 29, 1985

* μ CI-Microcurie; mCi-Millicurie; Ci-Curie

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19. Except as specifically provided otherwise by the license, the licensee shall possess and use radioactive material described in all schedules of this license in accordance with statements, representations and procedures contained in, or enclosed with, the documents listed below. The regulations contained in 32 Illinois Administrative Code shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application received June 12, 1978.
- B. Letter dated July 30, 1985 (except Item 3).
- C. Letters dated:

April 6, 1981	September 24, 1982	September 14, 1984
June 12, 1981	March 31, 1983	November 5, 1984
July 23, 1981	April 12, 1983	December 14, 1984
September 11, 1981	September 30, 1983	February 25, 1985
September 17, 1982	August 3, 1983	November 1, 1986

- D. Letters, with attachments, dated:

September 22, 1978	April 1, 1982	November 16, 1984
July 18, 1980,	January 28, 1983	November 20, 1984
September 19, 1980	February 17, 1983	November 30, 1984
February 2, 1981	September 13, 1983	June 6, 1985
March 3, 1981	December 14, 1983	July 29, 1985
March 11, 1981		

20. The licensee is exempt from the provisions of Section 330.250(c) of 32 Illinois Administrative Code for a period of one year from the date of issuance of this license document.

SCC:LKP

* μ Ci-Microcurie; mCi-Millicurie; Ci-Curie

PAGE 1 SIGNED BY:

Steven C. Collins, Chief
IL 473-0059

Steven C. Collins

DATE
April 6, 1988

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