

MATERIALS LICENSE

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.

302102

Licensee:

1. Radiological Solutions

3. License Number 24-26769-01

2. 1240 West 60th Terrace
Kansas City, MO 64113

4. Expiration Date January 31, 2002

5. Docket or
Reference No. 030-342916. Byproduct, Source, and/or
Special Nuclear Material7. Chemical and/or Physical
Form8. Maximum Amount that Licensee
May Possess at Any One Time
Under This License

A. Cesium-137

A. Sealed source
(Amersham/Medi-
Physics Model
CDR.562 or
DuPont/Merck
Model NES-356)A. 2 sources not
to exceed 250
microcuries each

B. Barium-133

B. Sealed source
(DuPont/NEN/Merck
Model NES-358 or
Amersham/Medi-
Physics Model
BDR.562)B. 2 sources not
to exceed 300
microcuries eachC. Any byproduct
material with Atomic
Nos. 3-83

C. Analytical samples

C. See Item 9.C.

9. Authorized Use:

A. and B. To be used for instrument calibration.

C. Possession incident to the performance of leak testing sealed sources for customers.

CONDITIONS

10. Licensed material may be used at the licensee's facilities located at 1240 West 60th Terrace, Kansas City, Missouri and at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.

COPY 4

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
24-26769-01

Docket or Reference Number
030-34291

11. The Radiation Safety Officer for this license is Kari Arcide.
12. Licensed material shall be used by, or under the supervision and in the physical presence of, Kari Arcide.
13.
 - A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
 - B. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
 - C. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
 - D. Sealed sources need not be leak tested if:
 - (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
 - E. The leak 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, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Nuclear Materials Safety Branch, 801 Warrenville Road, Lisle, Illinois 60532-4351. The report shall specify the source involved, the test results, and corrective action taken.

COPY

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

24-26769-01

Docket or Reference Number

030-34291

- F. 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.
14. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.
15. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
16. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
17. 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. The U.S. 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 December 1, 1996; and
- B. Letter dated December 18, 1996.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date

January 10, 1997

By

Materials Licensing Branch, Region III

COPY

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

(FOR LFMS USE)
INFORMATION FROM LTS

R6

Program Code: _____
Status Code: 3
Fee Category: _____
Exp. Date: 0
Fee Comments: _____
Decom Fin Assur Req'd: _____
T: _____

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED
Applicant/Licensee: RADIOLOGICAL SOLUTIONS
Received Date: 961204
Docket No: 3034291
Control No.: 302102
License No.:
Action Type: New Licensee

2. FEE ATTACHED
Amount: 550
Check No.: 1193

3. COMMENTS

Signed J. Harney
Date 12-9-96

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

1. Fee Category and Amount: 3P \$550

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

3. OTHER _____

Signed SC
Date 12/17/96

1996 DEC 13 PM 2:16

Log	<u>Dec 6 III</u>
Remitter	_____
Check No.	<u>1193</u>
Amount	<u>\$550</u>
Fee Category	<u>3P</u>
Type of Fee	<u>APP</u>
Date Check Rec'd	<u>12/13/96</u>
Date Completed	<u>12/17/96</u>
By:	<u>SC</u>

(10-94)
10 CFR 30, 32, 33
34, 35, 36, 39 and 40

APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,
MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,
SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD
Lisle, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
811 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☒ A. NEW LICENSE
☐ B. AMENDMENT TO LICENSE NUMBER _____
☐ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip code)

Kari Schlafke Arcide
Radiological Solutions
1240 W. 60th Terrace
Kansas City, MO 64113

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

same as #2

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Kari S. Arcide, M.S.

TELEPHONE NUMBER

816 444 5901

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time	6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS
9. FACILITIES AND EQUIPMENT	10. RADIATION SAFETY PROGRAM
11. WASTE MANAGEMENT	12. LICENSEE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY <u>3.P.</u> AMOUNT ENCLOSED \$ <u>550.00</u>

13. CERTIFICATION (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39 AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 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.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

Kari S. Arcide, M.S., Sole Proprietor

SIGNATURE

Kari S. Arcide

DATE

12-1-96

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

RECEIVED

DEC 04 1996

302102

REGION III

PRINTED ON RECYCLED PAPER



RADIOLOGICAL SOLUTIONS

SERVING YOUR MEDICAL PHYSICS NEEDS

P.O. BOX 22622
KANSAS CITY, MO 64113
816-444-5901 FAX 816-444-5789
1-800-237-9023

December 1, 1996

Materials Licensing Section
US Nuclear Regulatory Commission, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dear Sir or Madam:

Enclosed please find my application for a category 3.P. Radioactive Materials License. I am sole proprietor of a medical physics consulting business and I wish to be able to provide leak testing services and dose calibrator calibrations for my customers. I will not receive specific fees for the leak tests nor provide the service to any non-customers. I am currently providing these services under the State of Kansas (RM License No. 33-C737-01).

I spoke with B.J. Holt just prior to the Thanksgiving holiday to explain that the City of Kansas City, KS has purchased the building in which my office currently resides. They intend to widen the road and I will be evicted as of December 15, 1996. My only option with so little time is to move the services to my private residence in Missouri. I appreciate any effort on your part to process this application as quickly as possible so that I may move and decommission the area to be released to the city.

Also enclosed please find my application fee of \$550.

If you require any additional information, please call. Thank you for your assistance in this urgent matter.

Best regards,

Kari Schlafke Arcide, M.S.
Board Certified: ABR, ABSNM

RECEIVED

DEC 04 1996

REGION III

pm: 12-3-96

DEC 04 1996

ITEMS 5 and 6

RADIOACTIVE MATERIAL FOR MEDICAL USE

5a. <u>Byproduct Material</u>	5b,c. <u>Amount</u>	6. <u>Purpose of Use</u>
Cesium-137	Sealed sources (Dupont/ Merck NES-356; or Amersham/ Medi-Physics CDR.562). Two (2) Sources. No single source to exceed 250 microcuries.	Instrument calibration
Barium-133	Sealed sources (Dupont/NEN/ Merck NES-358; or Amersham/ Medi-Physics BDR.562). Two (2) Sources. No single source to exceed 300 microcuries	Instrument calibration

All of the above sources or their equivalent will be obtained from a facility authorized by the US NRC or an Agreement State to manufacture and distribute this type of radioactive material.

ITEM 7

INDIVIDUAL RESPONSIBLE FOR RADIATION SAFETY PROGRAM

ATT 7.1

Not Applicable to this license

ITEM 7

INDIVIDUAL RESPONSIBLE FOR RADIATION SAFETY PROGRAM

ATT 7.2.1

User Name

Proposed Use

Training

Kari S. Arcide, M.S.
Board Certified: ABR,
ABSNM

All materials listed in ITEM 5

Currently authorized
under State of Kansas
RM License No. 33-C737-01
A copy of the license is
attached as ATT 7.2.1a

STATE OF KANSAS

RADIOACTIVE MATERIALS LICENSE

Pursuant to the Nuclear Development and Radiation Control Act (L. 1963, Ch. 290) and Kansas Annotated Regulations numbers 28-35-133 through 28-35-363 inclusive, and in reliance on statements and representations made to this agency by the licensee designated below, a license is hereby issued authorizing the licensee to transfer, receive, possess, and use the radioactive material or materials listed below; and to use such materials at the place or places listed below; and to use the material for the purpose or purposes listed below. This license is subject to all applicable rules, regulations, and orders now in effect or placed in effect by the Department of Health and Environment and any conditions specified below.

Licensee 1. Name Radiological Solutions 2. Address 2311 W. 43rd Street Kansas City, KS 66103		3. License number 33-C737-01 4. Expiration date June 30, 1998 (F 98) 5. Reference number
6. Radioactive materials (element and mass number) A. Cobalt-57 B. Barium-133 C. Cesium-137 D. Any radioactive material, Atomic Numbers 3-83	7. Chemical and/or physical form A. Sealed source (Amersham CTR-568 or Du Pont Model NES-206) B. Sealed source (Amersham BDR-562 or Du Pont Model NES-358) C. Sealed source (Amersham CDR-562 or Du Pont Model NES-356) D. Analytical samples	8. Maximum quantity licensee may possess at any one time A. No single source to exceed 5 millicuries B. No single source to exceed 0.3 millicurie C. No single source to exceed 0.3 millicurie D. See Item 9.D

CONDITIONS

9. Authorized use. (Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.)
- A., B., and C. To be used for instrument calibration.
- D. Possession incident to the performance of wipe testing of sealed sources.
10. Radioactive material shall be used by, or under the supervision of Kari Schlafke Arcide, M.S..
11. A. (1) Each sealed source containing radioactive material, other than Hydrogen-3, with a half-life greater than thirty (30) days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six (6) months. In the absence of a certificate from a transferrer indicating that a test has been made within six (6) months prior to the transfer, a 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 radioactive 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.

STATE OF KANSAS

RADIOACTIVE MATERIALS LICENSE

Supplementary Sheet

License Number 33-C737-01

- (3) The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six (6) months prior to the date of use or transfer. Sources in storage shall be physically inventoried every six months and listed in the radioactive materials inventory.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcurie and maintained for inspection by the Department.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, 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 Department regulations. A report shall be filed within five (5) days of the test with the Radiation Control Program, Bureau of Air and Radiation, Kansas Department of Health and Environment, Topeka, Kansas 66620, describing the equipment involved, the test results and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Department, the United States Nuclear Regulatory Commission, or an Agreement State to perform such services.
7. The licensee may transport radioactive material or deliver radioactive material to a carrier for transport, in accordance with the provisions of Kansas Radiation Protection Regulations 20-35-196a, "Preparation of Radioactive Material for Transport".
13. The licensee shall comply with the provisions of Part 4, Kansas Radiation Protection Regulations, "Standards for Protection Against Radiation" and Part 10, Kansas Radiation Protection Regulations, "Notices, Instructions and Reports to Workers; Inspections."
14. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in Items 6, 7 and 8 of this license in accordance with statements, representations, and procedures contained in the following documents:
- a) The application dated 22 February 1996, signed by Kari Schlafke Arcide, M.S., with attachments.

Date

1996 10 10

FOR THE STATE DEPARTMENT OF HEALTH & ENVIRONMENT

BY

Gerald W. Allen

Radiation Control Program

ITEM 7

INDIVIDUAL RESPONSIBLE FOR RADIATION SAFETY PROGRAM

ATT 7.3.1

RADIATION SAFETY OFFICER

User Name

Training

Kari S. Arcide, M.S.
Board Certified: ABR,
ABSNM

Currently authorized under State of Kansas RM License
No. 33-C737-01. A copy of the license is attached
as ATT 7.2.1a

TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

8.1 NA

8.2 Currently there are no workers other than the RSO. Should any employee be hired in the future who works with or in the vicinity of the radioactive materials: I will establish and implement the model training program that was published in Appendix A to Regulatory Guide 10.8, Revision 2 and train upon employment and annually thereafter.

9.1 FACILITIES AND EQUIPMENT

An annotated drawing of the room and adjacent areas where byproduct material will be used is appended as ATT 9.1.1. A list of available equipment is appended as ATT 9.1.2.

9.2 SURVEY METER CALIBRATION

I will establish and implement the model procedure for calibrating survey instruments that was published in Appendix B to Regulatory Guide 10.8, Revision 2.

9.3 DOSE CALIBRATOR CALIBRATION

NA

9.4 PERSONNEL MONITORING PROGRAM

I will establish and implement the model personnel external exposure monitoring program published in Appendix D to Regulatory Guide 10.8, Revision 2 with the exception that the TLD whole body and extremity badges will be exchanged quarterly.

9.5 NA

9.6 NA

10.1 RADIATION SAFETY COMMITTEE

NA (Not a medical institution). The Radiation Safety Officer delegation of authority is appended as ATT 10.1 to be shown to any employee hired in the future (no current employees and none anticipated).

10.2 ALARA PROGRAM

I have developed and ALARA program for your review that is appended as ATT 10.2.

10.3 LEAK TESTING

I have developed a leak test procedure for your review that is appended as ATT 10.3.

10.4 SAFE USE OF RADIOPHARMACEUTICALS

I have developed rules for the safe use of radiopharmaceuticals for your review that are appended as ATT 10.4.

10.5 SPILL PROCEDURES

NA; No liquid radiopharmaceuticals will be used.

10.6 ORDERING AND RECEIVING

I have developed a procedure for ordering and receiving radioactive material for your review that is appended as ATT 10.6.

10.7 OPENING PACKAGES

I have developed a package opening procedure for your review that is appended as ATT 10.7.

10.8 UNIT DOSAGE RECORDS

NA

10.9 MULTIDOSE VIAL RECORDS

NA

10.10 MOLYBDENUM CONCENTRATION RECORDS

NA

10.11 IMPLANT SOURCE USE RECORDS

NA

10.12 AREA SURVEY PROCEDURES

I have developed survey procedures for your review that are appended as ATT 10.12.

NRC 313

ITEM 10

10.13 AIR CONCENTRATION CONTROL

10.13.1 WORKER DOSE FROM NOBLE GASSES

NA

10.13.2 WORKER DOSE FROM AEROSOLS

NA

10.13.3 PUBLIC DOSE FROM AIRBORNE EFFLUENT

NA

10.13.4 SPILLED GAS CLEARANCE TIME

NA

10.14 RADIOPHARMACEUTICAL THERAPY

NA

10.15 NA

10.16 NA

NRC 313

ITEM 11

11.1 WASTE DISPOSAL

I have developed a procedure for waste disposal for your review that is appended as ATT 11.1.

11.2 See ITEM 11.1

ATT 9.1.2 EQUIPMENT LIST

Radiation Detection Instruments:

Type of instrument	#	Radiation detected	Sensitivity (mR/hr)	Window (mg/cm ³)	Intended use
Ludlum Measurements Model 14C survey meter with internal E compensated GM	1	γ	0-2000	N/A	High range survey
Ludlum Measurements Model 44-9 pancake probe	1	α, β, γ	0-200	1.7 +/-0.3	Survey
Ludlum Measurements Model 44-7 end window probe	1	α, β, γ	0-200	1.7 +/-0.3	Survey
Bicron Radiation Measurements Model Surveyor 2000 with internal E compensated GM	1	α, β, γ	0-2000	N/A	High range survey/ measurement
Bicron Radiation Measurements EWGM probe or	1	α, β, γ	0-200	1.4 to 2	Survey
PGM probe or	1	α, β, γ	0-200	1.4 to 2	Survey
SWGGM probe	1	β, γ	0-200	30	Survey/meas.
Berthold Instruments Nuclear Spectrometer LB 2040	1				
LB 6628-1U 2"x2" NaI(Tl) crystal	1	γ			Measurement

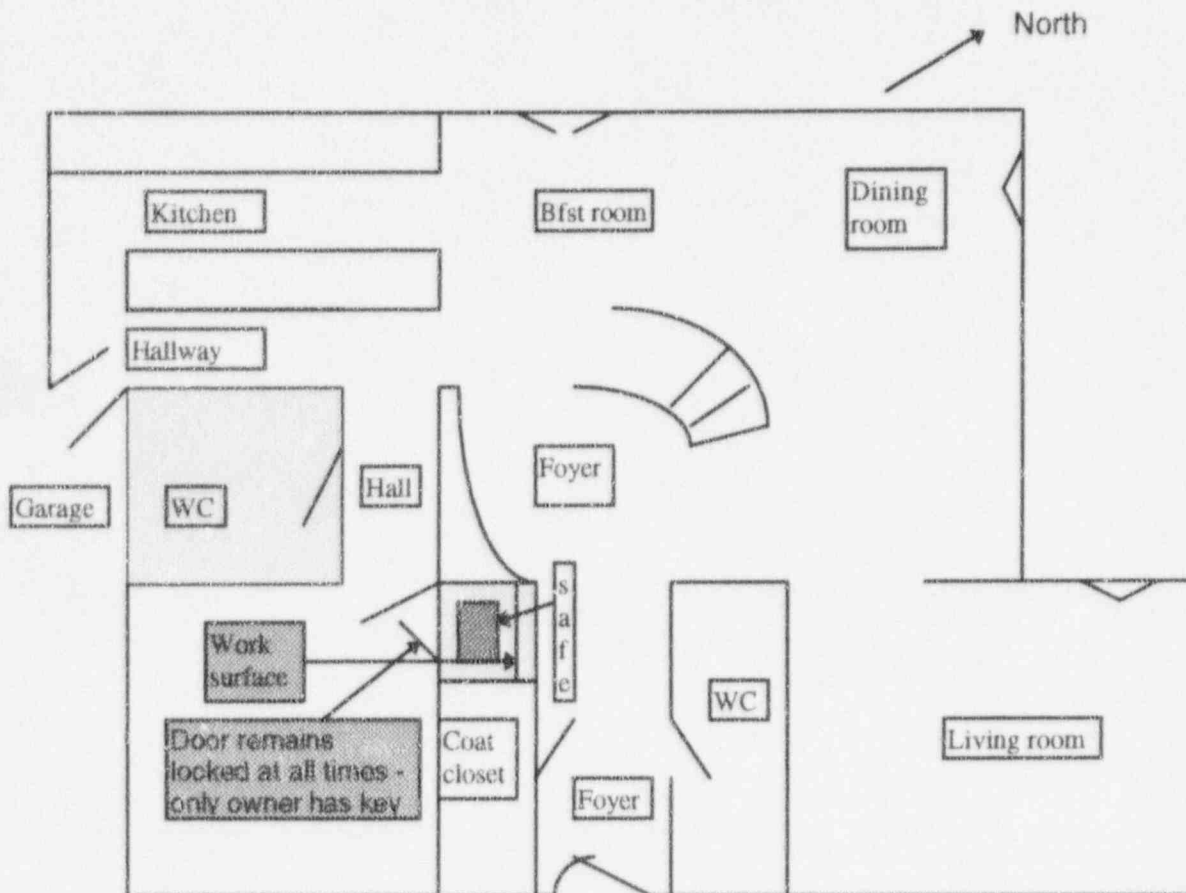
Additional Equipment

Shielded jewelers safe 600 lb safe for sealed source storage
 Rubber gloves
 Lead source pigs
 Absorbant pads
 Alcohol wipes
 DOT approved transport container
 Appropriate labels for Radiation Area and Radioactive Materials

ATT 9.1.1 FACILITIES

The sources will be housed in the pigs from the manufacturer and locked in a 600 lb jewelers safe. This safe will be in a 3'x3' locked closet within a 8'x10' room.

The closet is in a private residence which has a monitored security alarm system.



ATT 10.1 DELEGATION OF AUTHORITY

Memo to: All employees
From: Owner
Subject: Delegation of Authority

_____ has been appointed Radiation Safety Officer and is responsible for ensuring the safe use of radiation. The Radiation Safety Officer is responsible for managing the radiation program, identifying radiation safety problems, initiating, recommending or providing corrective actions, verifying implementation of corrective actions and ensuring compliance with regulations. The Radiation Safety Officer is hereby delegated the authority necessary to meet those responsibilities.

December 1, 1996

ATT 10.2 ALARA PROGRAM

Every attempt will be made to maintain personnel exposure as low as possible. The safety measures of time, distance and shielding are always practiced.

The security of the sealed sources is ensured by three locks and an alarm system. Appropriate signs will be posted on the safe door and closet door and an initial radiation survey will be performed with a GM device (listed in ATT 9.1.2) to ensure that the exposure rates are below 2 mR/hr and do not exceed 100 mrem per year. Additional lead bricks will be acquired if the exposure rate exceeds either of these requirements.

The dose calibrator reference sources will be infrequently used at customer institutions who do not possess a second standard source for the annual accuracy measurement. Under these circumstances, the sources will be transported in the DOT approved/shielded container according to DOT protocol. A log will be kept which details the removal and return of the sources from the locked safe. A quarterly inventory will be performed which indicates the source manufacturer, model, calibration date and activity, whether a leak test is required and where the source is stored. Initial and semi-annual leak testing will be performed according to the license.

No leak test wipes will be transported to the counting facility if the exposure rate at the surface exceeds 2 mR/hr. When leak test wipes are brought into the counting room (closet), protective gloves will be worn and the wipes will be placed in plastic tubes to prevent contamination of the well counter. The attached leak test protocol will be followed. If less than 0.005 μCi is determined to be present, the wipes will be disposed of in regular trash. If a positive leak test occurs, the wipe will be returned to the facility which possesses the faulty source and arrangements will be made to return the wipe and source to the manufacturer for disposal/repair. A final radiation survey will be performed in the counting area after each leak test counting session. A personnel survey will also be made per use. Even if no leak tests have been performed in a quarter, a radiation survey will be performed of the counting and source storage areas quarterly at a minimum. The survey meter will be checked per use with a reference check source to assure proper function.

Both the whole body and extremity TLD badges will be worn at all times when near or handling radiation sources. The quarterly reports of personnel exposure will be reviewed quarterly to ensure that the 5000 mrem annual limit will not be exceeded. Over two years of exposure history is available for review to illustrate that whole body exposure has not exceeded 150 mrem annually nor extremities exceeded 2000 mrem annually. These reports will be kept on file indefinitely.

Forms for the above outlined procedures are attached as ATT 10.2.1-10.2.7.

Quarterly Counting Equipment Calibration

Reviewer: K. Arcide, M.S.

Date: 15-Sep-96

Well Chi-Square Tests

WELL COUNTER		
	Counts	(Cts-mean) ²
1)	67144	137566.81
2)	67438	5913.61
3)	67831	99919.21
4)	67274	58032.81
5)	67591	5791.21
6)	67420	9006.01
7)	67741	51121.21
8)	67560	2034.01
9)	67494	436.81
10)	67656	19909.21
Mean:		67514.9
Chi-Square =		5.8
Acceptable range (90% confidence): 4.17-19.68		
HV =		775
Chi-Square value acceptable?		YES

Energy Resolution Test

WELL COUNTER	
Full width at half maximum:	14.19%
Acceptable:	<u> X </u> YES
	<u> </u> NO

Efficiency of System:

Source Nuclide	Calibration Date	Initial Activity	Activity at Count time	Date Counted	Source cps	Backgnd cps	Percent Efficiency
Co-57	7/1/96	0.1137	0.094	15-Sep-96	2666	3.7	78.13%
Ba-133	7/1/96	0.1007	0.099	15-Sep-96	1191	1.6	32.83%
Cs-137	9/1/96	0.1045	0.104	15-Sep-96	474	0.7	13.75%

Detection system: Berthold Industries Model LB 6628-1U NaI well detector

Berthold Industries Model LB 2040 Nuclear Scaler

Sources: NIST traceable. Radiological Solutions: Kansas License No. 33-C737-01

Physicist: _____

Source Check Out Log

[illegible]



RADIOLOGICAL SOLUTIONS

SERVING YOUR MEDICAL PHYSICS NEEDS

P.O. BOX 22622
KANSAS CITY, MO 64113
816-444-5901 FAX 816-444-5789
1-800-237-9023

Sealed Source Inventory

Reviewer: **K. Arcide, M.S.**

KS License No.: **33-C737-01**

Date: **15-Sep-96**

Leak tests performed? **NO**

Leak tests are due: **Dec-96**

Source Mfr.	Model Number	Serial Number	Radio-nuclide	μ Ci at calib.	Date of calibration	Present μ Ci	Leak test req'd?	Storage location
ICN	MLD-01	152638	Cs-137	250	17-May-84	188.3	YES	Safe
NEN	NES-358	S358001-26	Ba-133	273	14-Mar-87	148.3	YES	Safe
Iso. Prod.		539-40-1	Ba-133	0.1007	1-Jul-96	0.0994	NO	Safe
Iso. Prod.		539-40-3	Co-60	0.09572	1-Jul-96	0.0931	NO	Safe
Iso. Prod.		539-40-2	Co-57	0.1137	1-Jul-96	0.0936	NO	Safe
Iso. Prod.		513-101-1	Cs-137	0.1045	1-Sep-96	0.1044	NO	Safe

Verified by: _____

Date: _____

[illegible]

ATT. 10.2.6



RADIOLOGICAL SOLUTIONS

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P.O. BOX 22622
KANSAS CITY, MO 64113
816-444-5901 FAX 816-444-5789
1-800-237-9023

Sealed Source Leak Test

Institution:

NRC License No.:

Reviewer: **K. Arcide, M.S.**

Wipe Date:

Wipes by: **K. Arcide, M.S.**

Count Date:

Source Nuclide	Calibration Activity μCi	Calib. Date	Source Model	Source Serial Number	Wipe cpm	Bkgd cpm	μCi Removed	Acceptable? ($<0.005 \mu\text{Ci}$)
Cs-137	225	7/13/88	NES-356		36	45	NDA	YES
Ba-133	278	2/23/88	NES-358		108	92	NDA	YES
Co-57	10000	1-Nov-88	NES 392		13	11	NDA	YES

Note: "NDA" is no detectable activity (e.g., net cts $<$ Bkgd cts + $3\text{Sqrt}(\text{Bkgd cts.})$)

Determination of Efficiency of Counting System

Source Nuclide	Calibration Date	Initial Activity	Activity at Count time	Date Counted	Source cps	Backgnd cps	Percent Efficiency
Co-57	7/1/96	0.1137	0.094	15-Sep-96	2666	3.7	78.1%
Ba-133	7/1/96	0.1007	0.051	15-Sep-96	1191	1.6	63.5%
Cs-137	9/1/96	0.1045	0.104	15-Sep-96	474	0.7	13.8%

Detection system: Berthold Industries Model LB 6628-1U NaI well detector
Berthold Industries Model LB 2040 Nuclear Scaler

Sources: NIST traceable. Radiological Solutions: Kansas License No. 33-C737-01

Note: Wipe test samples are collected by wiping the exposed surface of the source housing, seams, covers, lids, or other potential leakage areas with an alcohol pad.

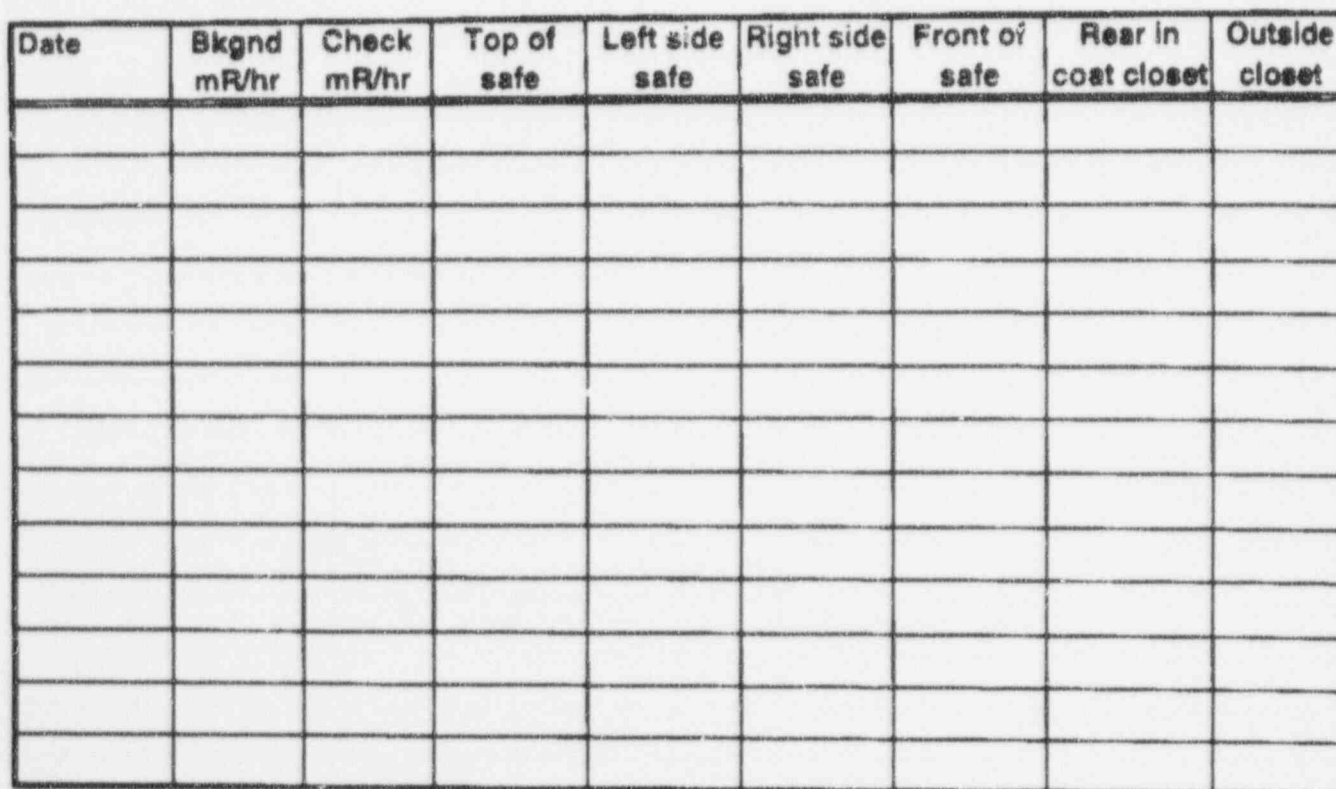
Physicist:

RSO:

Kari S. Arcide, M.S.

Certified: ABR(DRP), ABSNM

Radiological Solutions
Quarterly Radioactive Sealed Source Storage Survey



Serial No.: 126839
Serial No.: PR128820

ATT 10.3 LEAK TEST PROCEDURES

NIST Traceable standards will be acquired for the efficiency calculation needed for leak testing. The sources to be obtained include but are not limited to the following:

Cs-137, Co-57, Co-60, Ba-133

Other sealed radionuclides may be considered depending on the emission spectrum characteristics.

SAMPLE COLLECTION PROCEDURES

All sealed sources will be leak tested excluding the following:

- 1 Sources which contain only by-product material with a half-life of less than 30 days.
- 2 Sources containing only by-product materials in a gaseous state.
- 3 Sources containing 100 μCi or less of a β - or γ -emitting material of 10 μCi or less of an α -emitting material.
- 4 Sources which are stored and not being used.

An inventory will be created identifying all sources and indicating those which require leak testing. Both the inventory and leak test report will include the manufacturer, model number, nuclide, form, calibration date and activity. The inventory will also include the storage location of each source.

A separate alcohol packet will be set out and labeled for each source to be tested. If a source larger than 2 mCi is to be wiped, a survey meter or other monitor will be set out and turned on to monitor the exposure rate.

Samples will be taken as follows:

- 1 For small sealed sources, the entire accessible surface area will be wiped, paying particular attention to seams and joints. The port of beta applicators will not be wiped.
- 2 For larger sealed sources, and devices (e.g., survey meter calibrator), the wipes will be taken near the radiation port and on the activating mechanism.
- 3 For teletherapy machines, the wipes will be taken with the source in the off position. The area near the shutter mechanism will be wiped, taking care to touch neither the field light and mirror nor crosshairs. The primary and secondary collimators and trimmers will also be wiped.
- 4 If radium sources are to be tested, they will be checked for radon leakage by submersing the source in a vial of fine grain charcoal or cotton for a day. The source will be removed and the adsorbent sample will be analyzed as described below. A survey will be performed to assure that there is adequate shielding of the source(s) during the leak testing procedure.

SAMPLE ANALYSIS

The instrument used for analysis will be:

Berthold Instruments Nuclear Spectrometer Model LB 2040 with a model LB 6628-1 U 2"x2" Na(I)TI crystal well counter. The instrument is sufficiently sensitive to detect 0.005 μCi of a gamma source.

The following NIST Traceable rod sources may be used to determine the detection efficiency of the instrument.

<u>Radionuclide</u>	<u>Activity</u>	<u>Radionuclide</u>	<u>Activity</u>
Cs-137	0.1 μCi	Mn-54	0.1 μCi
Co-57	0.1 μCi	Na-22	0.1 μCi
Co-60	0.1 μCi	Cd-109	1 μCi
Ba-133	0.1 μCi		

If the wiped source is the same isotope as the standard, the counting efficiency will be determined by the following formula:

$$\text{Efficiency} = (\text{cpm}_{\text{source}} - \text{cpm}_{\text{bkg}}) / (2.2\text{E}^6 * \text{Activity}_{\text{source}} * \% \gamma\text{-Abundance})$$

If the wiped source is a different isotope, the counting efficiency will be estimated using a check source with a similar spectrum. The wipe test will not be performed if the calculations indicate that the sensitivity is not sufficient to detect 0.005 μCi .

PROCEDURE

- 1 With the standard source in the well, the scaler will be peaked by HV adjustment.
- 2 The standard source will be assayed using approximately a 20% window. The counts per minute will be determined. The background counts per minute will be determined using the same window setting and efficiency will be calculated according to the above formula.
- 3 The wipe sample will be assayed with the same geometry relative to the detector used to count the certified check source.
- 4 The estimated activity of the sample will be calculated if the count is greater than $\text{bkg} \pm 3 * \text{sqrt}(\text{bkg})$. If the counts are lower, no detectable activity will be indicated.
- 5 All wipe samples will be counted in this manner using the appropriate settings and efficiency factor for the radionuclide being wipe tested.
- 6 The date, radionuclide, counts, time and all instrument settings will be recorded in a counting log book along with the origin of the wipe test sample.

- 7 A report with the information indicated earlier in addition to that in item number 6 will be provided to the institution of the wipe test's origin. The report will include a line for the signature of the institution/owner's Radiation Safety Officer.

If the wipe sample activity exceeds $0.005 \mu\text{Ci}$, the RSO of the source owner will be immediately notified and the source will be removed from service to be repaired or properly disposed. If it is a source distributed under a NRC or Agreement State License, the NRC or Agreement State will be notified.

ATT 10.4 Rules for Safe Use of Radiopharmaceuticals

1. Wear disposable gloves whenever handling sealed sources or sealed source wipes.
2. After each counting session, monitor your hands for contamination in a low-background area with a pancake detector.
3. Keep sealed sources in lead pigs (shielded) within the locked safe when not in use.
4. Do not eat, drink, smoke or apply cosmetics in any area where radioactive material is stored or used.
5. Do not store food, drink or personal effects in areas where radioactive material is stored or used.
6. Wear personnel monitoring devices at all times while in areas where radioactive materials are used or stored. When not being worn to monitor occupational exposures, personnel monitoring devices should be stored in a low-background area.
7. Wear a finger monitor when handling radiopharmaceuticals.
8. With a radiation detection survey meter, survey the sealed source storage area quarterly.
9. With a radiation detection survey meter, survey the counting area and equipment after each use.

ATT 10.6 PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIALS

- 1 Records will be retained for each receipt of byproduct material as long as the material is possessed and for three years following the transfer or disposal of the material.
- 2 Only sealed sources for the purpose of instrument calibration will be ordered. Orders will only be placed by the RSO. Delivery will be made by approved carrier to the location listed in ITEM 2 of the license application and require a receipt signature. No drop off deliveries will be permitted.

ATT 10.7 PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS

- a. No packages will be ordered or received which exceed the quantities allowed by the radioactive material license.
- b. Put on gloves to prevent hand contamination.
- c. Visually inspect all packages containing radioactive material for any signs of damage (wet or crushed). If damage is observed the driver and delivery vehicle will be detained until the extent of any possible contamination is determined. If no damage is observed, continue with the procedure.
- d. Any packages labeled with a Radioactive White I, Yellow II, or Yellow III will be monitored for radioactive contamination. Still wearing gloves, using an alcohol wipe or other appropriate swab, wipe at least 300 square centimeters of the package surface (or the entire package if smaller). Remove the wipe sample to a low background area and assay using a detection system capable of determining removable contamination of 22 dpm/cm² or lower.
- e. If removable contamination on the package exceeds 22 dpm/cm² for beta/gamma emitters for a wipe of 300 square centimeters, notify the carrier immediately and take precautions to not spread the contamination. As no liquid radioactive materials are to be received, the source manufacturer will also be contacted.
- f. If surface contamination test results are negative, wearing disposable rubber gloves, open the outer package following the manufacturer's directions, if supplied, and remove the packing slip. Examine the inner package to verify the contents relative to the requisition and packing slip. Check the physical integrity of the final source container prior to use of the contents. If contamination is suspected for any reason, wipe the external surface of the final source container and remove the wipe to a low background area to assay. Take special precautions to prevent the potential spread of contamination. Assay to determine if there is any removable radioactivity. If removable activity is found, contain the source and packaging, notify the carrier and source manufacturer. Notify the NRC if applicable.
- g. Monitor any disposable packing material and/or container for radiation levels.
 - i. If radiation levels exceed background, treat the package or material as radioactive waste. (See Item 11.1)
 - ii. If no radiation is detected, obliterate all radiation labels and discard the material as regular trash.
- h. Make a record of the receipt and any action taken.

ATT 10.12 AREA SURVEYS

1. Prior to each use, the survey meter function will be tested with an operational check source. The results of this test will be documented.
2. A final radiation survey will be performed in the counting area after each leak test counting session. The results of these surveys will be kept in log format on a form provided as ATT 10.2.4 containing the date, survey locations, equipment used and the results in mR/hr. Any readings above normal background will require a wipe test to be performed on the area in question. If removable contamination exceeds 200 dpm/100 cm², the area will be cleaned, resurveyed, and the source of the contamination investigated. All action taken will be clearly documented.
3. A personnel survey will also be made per use. The results of these surveys will be kept in log format on a form provided as ATT 10.2.4.
4. A radiation survey will be performed of the counting and source storage areas quarterly at a minimum on a form provided as ATT 10.2.7. The survey meter will be checked per use with a reference check source to assure proper function.

ATT 11.1 WASTE DISPOSAL

No radioactive waste will be generated. No liquid radiopharmaceuticals will be used. No contaminated leak test wipes will be stored; they will be returned in a sealed container to the facility which owns the faulty source and returned to the manufacturer with the source. In the unlikely event of contamination of the counting area from a hot wipe, the area will be cleaned with moistened towellettes until decontaminated and all cleaning paraphernalia will be returned to the facility which possesses the leaking source and returned to the manufacturer along with the source.

JAN 10 1997

Kari Arcide, M.S.
Radiation Safety Officer
Radiological Solutions
1240 West 60th Terrace
Kansas City, MO 64113

Dear Ms. Arcide:

Enclosed is your NRC Material License Number 24-26769-01 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

Please be advised that since your restricted area is located in a residential building (your home), you must be capable of demonstrating that the room is treated as a separate area apart from the "residential quarters" of your home in order to comply with the definition of a restricted area (10 CFR Part 20, Section 20.1003). In addition, you should perform periodic surveys and document the results to demonstrate compliance with 10 CFR Part 20, Section 20.1302.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Not possess and use materials authorized in Items 6, 7, and 8, on the license until:
 - a. You have constructed the facilities and obtained the equipment described in the license application and supporting documentation; and
 - b. You have notified the U. S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Nuclear Materials Licensing Branch, in writing, that activities authorized by the license will be initiated.

302102

3. Notify NRC, in writing, within 30 days:
 - a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
 - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).
4. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
 - a. When you decide to terminate all activities involving materials authorized under the license; or
 - b. If you decide not to complete the facility, acquire equipment, or possess and use authorized material.
5. Request and obtain a license amendment before you:
 - a. Change Radiation Safety Officers;
 - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
 - d. Change ownership of your organization.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action

against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,

Original Signed By
Patricia J. Pelke
Nuclear Materials Licensing Branch

License No.: 24-26769-01

Docket No.: 030-34291

Enclosures: 1. License No. 24-26769-01
2. 10 CFR Part 19
3. 10 CFR Part 20
4. 10 CFR Part 30
5. 10 CFR Part 170
6. Form NRC-3
7. Agreement State Listing

DOCUMENT NAME: M:\03034291.CL7

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								
NAME	PPELKE:jaw								
DATE	01/10/97								

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RADIOLOGICAL SOLUTIONS

SERVING YOUR MEDICAL PHYSICS NEEDS

P.O. BOX 22622
KANSAS CITY, MO 64113
816-444-5901 FAX 816-444-5789
1-800-237-9023

December 18, 1996

Patty Pelke
Materials Licensing Section
US Nuclear Regulatory Commission, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dear Ms. Pelke:

Enclosed please find additional information for Control # 302102. As requested, I wish to clarify four items.

- 1 It is my intention for the license to be issued under my business name: Radiological Solutions.
- 2 In addition to radioactive materials listed in the original application dated 12/1/96, I would like to be authorized for any radioactive material with atomic numbers 3-83 in the form of analytical samples. These samples would apply to the leak testing of sealed sources used in Nuclear Medicine and Radiation Oncology (e.g., Co-57, Co-60, Cs-137, Ir-192, Ba-133 or other calibration or therapeutic source). The samples could also arise from decommissioning of nuclear medicine laboratories where numerous wipes are taken of the lab and surrounding areas involving radionuclides such as technetium-99M, iodine-131, gallium-67, strontium-89, thallium-201 or any other radiopharmaceutical used in FDA approved chemical/physical forms.
- 3 The radioactive material will remain under my constant surveillance when unlocked/in use. At no time will the closet storage area be unlocked without constant supervision.
- 4 Transportation procedures are appended as ATT 10.2.8.
- 5 A revised copy of ATT 9.1.1 is enclosed indicating the location of the nearest smoke detector.

If you require any additional information, please call. Thank you for your assistance in this matter.

Best regards,

Kari Schlafke
Kari Schlafke Arcide, M.S.
Board Certified: ABR, ABSNM

RECEIVED
DEC 30 1996
REGION III

Pm: 12-26-96

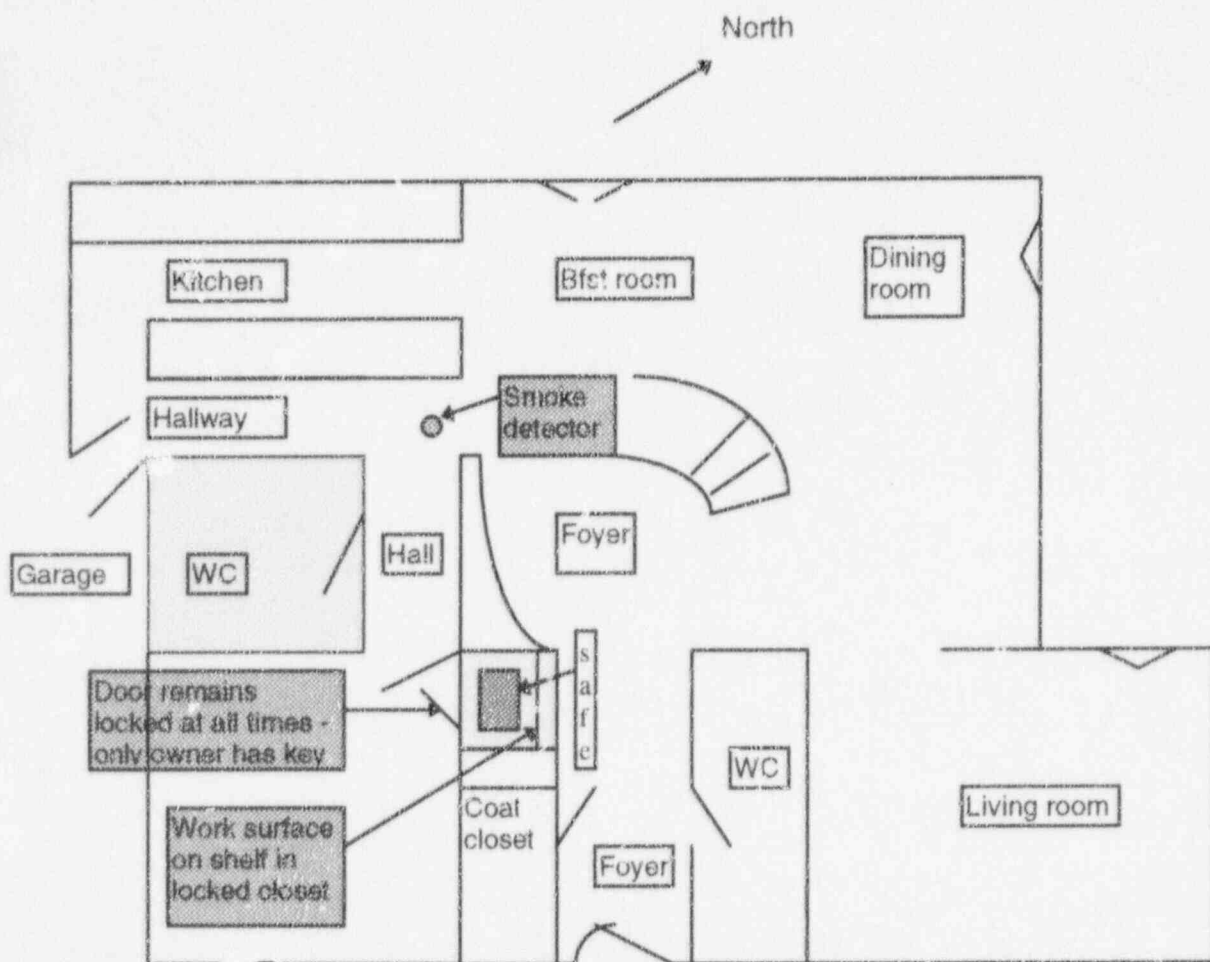
DEC 30 1996

ATT 9.1.1 FACILITIES

The sources will be housed in the pigs from the manufacturer and locked in a 600 lb jewelers safe. This safe will be in a 3'x3' locked closet within a 8'x10' room.

The closet is in a private residence which has a monitored security/fire alarm system.

The closet door remains locked at all times and only the owner has the key. When the sources and/or detection equipment are in use, the area will be under my surveillance at all times.



ATT 10.2.8 TRANSPORTATION PROCEDURE

The dose calibrator reference sources will be infrequently used at customer institutions who do not possess a second standard source for the annual accuracy measurement. Under these circumstances, the sources will be transported in a DOT approved and shielded container according to DOT protocol. A log will be kept which details the removal and return of the sources from the locked safe and a radiation survey will be made to determine that the exposure rate does not exceed 0.5 mR/hr. A copy of the NRC Radioactive Materials license will be transported with the sources along with a description of the precise sources in the container. The DOT approved container has been placed through rigorous testing to ensure its ability to withstand numerous forces. The container will be properly labeled and placed in the trunk (or rear, if no trunk is available) and secured. The sources will be checked in upon return to the safe.

If damage is suspected for any reason (accident or otherwise), a radiation survey will be performed along with the wipe testing procedure (ATT 10.3) taking care to not spread any potential contamination. The exterior container will be wiped along with various location in the trunk/rear of the vehicle. The vehicle will be secured until the extent of any contamination is determined. If contamination is found, the vehicle will be completely decontaminated and the cleaning materials/wipes etc., will be returned to the source manufacturer along with the leaking/damaged sources.

CONVERSATION RECORD

TIME DATE
12:30 pm 12/12/96☐ VISIT ☐ CONFERENCE ☒ TELEPHONE☐ INCOMING
☒ OUTGOINGNAME OF PERSON(S) CONTACTED OR IN CONTACT
KARI ARCIDEORGANIZATION (OFFICE, DEPT. ETC.)
RADIOLOGICAL SOLUTIONS 816-444-5901

TELEPHONE J.

SUBJECT

NEW SERVICE LICENSE TO PERFORM LEAK TESTS AND CALIBRATION OF DOSE CALIBRATORS

SUMMARY

I CONTACTED KARI ARCIDE REGARDING HER APPLICATION FOR A NEW LICENSE. SHE HAS BEEN LICENSED BY THE STATE OF KANSAS TO PROVIDE LEAK TEST AND INSTRUMENT CALIBRATION SERVICES; HOWEVER, SHE HAS TO RELOCATE HER BUSINESS AND THIS WILL REQUIRE AN NRC LICENSE. IN ORDER TO CONTINUE OUR REVIEW, IT WILL BE NECESSARY TO PROVIDE THE FOLLOWING INFORMATION:

1. CLARIFY THE NAME OF THE COMPANY THAT THE LICENSE SHOULD BE ISSUED TO;
2. CLARIFY WHETHER OR NOT YOU WISH TO INCLUDE LEAK TESTING SERVICES. YOUR APPLICATION DIDN'T INCLUDE 3-83 ANALYTICAL SAMPLES IN ITEM 5. K. ARCIDE INDICATED THAT SHE WANTED TO INCLUDE THIS SERVICE ON HER LICENSE. ALSO, IDENTIFY THE TYPES OF SEALED SOURCES FOR WHICH YOU WILL PROVIDE LEAK TEST SERVICES (E.G., DOSE CALIBRATOR CHECK SOURCES, CALIBRATION SOURCES, TELETHERAPY SOURCES, BRACHYTHERAPY SOURCES, ETC.);
3. IDENTIFY THE LOCATION OF THE NEAREST HEAT/SMOKE SENSING DEVICE IN THE ROOM WHERE RAM WILL BE USED AND STORED. K. ARCIDE INDICATED THAT A SMOKE DETECTOR IS LOCATED IN THE AREA IMMEDIATELY OUTSIDE OF THE ROOM AND THAT THE FIRE ALARM SYSTEM WILL AUTOMATICALLY NOTIFY THE FIRE DEPARTMENT IN CASE IT IS ACTIVATED.
4. SUBMIT YOUR PROCEDURES FOR TRANSPORTING MATERIALS TO AND FROM TEMPORARY JOB SITES.

I ALSO INFORMED K. ARCIDE THAT SINCE HER RESTRICTED AREA IS LOCATED IN A RESIDENTIAL BUILDING, SHE MUST BE CAPABLE OF DEMONSTRATING THAT THE ROOM IS TREATED AS A SEPARATE AREA APART FROM THE "RESIDENTIAL QUARTERS" OF HER HOME IN ORDER TO COMPLY WITH THE DEFINITION OF A "RESTRICTED AREA" IN 10 CFR PART 20. IN ADDITION, SHE WILL ALSO NEED TO MAINTAIN DOCUMENTATION WHICH DEMONSTRATES HER COMPLIANCE WITH 10 CFR PART 20, SECTION 20.1302

ACTION REQUIRED

REPLY IN DUPLICATE W/IN 15 DAYS. REFER TO CN 02102

NAME OF PERSON DOCUMENTING CONVERSATION
PATRICIA J. PELKE

SIGNATURE

DATE

12/12/96

ACTION TAKEN



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

December 10, 1996

Kari S. Arcide, M.S.
Radiation Safety Officer
Radiological Solutions
1240 W. 60th Terrace
Kansas City, MO 64113

SUBJECT: ACKNOWLEDGEMENT OF CORRESPONDENCE
(Letter & Application Dated 12/01/96)

Dear Licensee:

In response to your request, we have completed the initial processing, which is an administrative review of your application for a(n):

☒ New License ☐ Amendment ☐ Renewal
☐ Termination ☐ Auth User (Amendment not required)
☐ Other _____

No administrative deficiencies were identified during this initial review. However, it should be noted that a technical review may identify omissions in the submitted information.

It appears that your request is nonroutine and has been assigned to Patty Pelke for an expedited review. If you should have any questions please contact Ms. Pelke at (630) 829-9887.

1. New and amendment actions are normally processed within 90 days, unless we find major deficiencies, or policy issues requiring central program office assistance.
2. Renewal actions are normally processed within 180 days, however, under timely filing (before expiration), you may continue to operate under your existing license.
3. Termination actions are normally processed within 90 days, unless confirmatory surveys following decontamination/decommissioning activities are involved.

A copy of your correspondence has been forwarded to our Licensing Fee and Debt Collection Branch (301/415-6097) for approval of the fee category and amount, if required.

If you have a compelling safety or business-related reason for requesting expedited review, please contact the Materials Licensing Branch at (630) 829-9887. We will try to complete your request as soon as practicable. Any correspondence about this request should reference the control number.

Nuclear Materials Support Branch

Mail Control No. 302102
License No. 24-26769-01