

NRC FORM 313M

(9-81)

10 CFR 35

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE - MEDICAL

Approved by OMB

3150-0041

Expires 9-30-83

INSTRUCTIONS - Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.

1.a. NAME AND MAILING ADDRESS OF APPLICANT (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE

DOCTORS KING, RAM, & ASSOCIATES, INC.
6789 RIDGE ROAD
PARMA, OHIO 44129

TELEPHONE NO.: AREA CODE 216, 884-2100

1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED (If different from 1.a.) INCLUDE ZIP CODE

(same as 1.a. and)
DOCTORS KING RAM, & ASSOCIATES, INC.
21100 SOUTH GATE PARK BOULEVARD
MAPLE HEIGHTS, OHIO 44137

2. PERSON TO CONTACT REGARDING THIS APPLICATION

VINCENT A. GARGARO WITH UNIVERSAL
CONSULTANTS INC., NORTH RIDGEVILLE, OHIO

TELEPHONE NO.: AREA CODE 216 327-9432

3. THIS IS AN APPLICATION FOR: (Check appropriate item)

a. ☒ NEW LICENSE

b. ☐ AMENDMENT TO LICENSE NO.

c. ☐ RENEWAL OF LICENSE NO.

4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)

DASARATHI RAM, M.D.
HANS A. LINDT, M.D.
RASHDA FIRDAUS, M.D.

5. RADIATION SAFETY OFFICER (RSO) (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.)

DASARATHI RAM, M.D.

6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE

RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)	ADDITIONAL ITEMS:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)
10 CFR 31.11 FOR IN VITRO STUDIES			IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM		
10 CFR 35.100, SCHEDULE A, GROUP I		AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES		
10 CFR 35.100, SCHEDULE A, GROUP II		AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP III			GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV		AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA		
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
10 CFR 35.100, SCHEDULE A, GROUP VI					

6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a. (Sealed sources up to 3 mCi used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)

ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM NUMBER OF MILLICURIES OF EACH FORM	DESCRIBE PURPOSE OF USE
Log I-125 Check No. 1238 Amount 1500 Fee Category 12 Type of Fee APPR Date Check Rec'd. 1/17/81 Date Completed 1/17/81 CP NRC	SEALED SOURCE	200 mCi EACH 400 mCi TOTAL	N/D 1100A BONE DENSITOMETER SEALED SOURCE MODEL # AECL C-324, IMC.P2.

NRC FORM 313M

(9-81)

By:

CONTROL NO. 02601

8702100349 870317
REG3 LIC30
34-24583-01
PDR

INFORMATION REQUIRED FOR ITEMS 7 THROUGH 23

For Items 7 through 23, check the appropriate box(es) and submit a detailed description of all the requested information. Begin each item on a separate sheet. Identify the item number and the date of the application in the lower right corner of each page. If you indicate that an appendix to the medical licensing guide will be followed, do not submit the pages, but specify the revision number and date of the referenced guide: Regulatory Guide 10.8, Rev. _____ Date: _____

7. MEDICAL ISOTOPES COMMITTEE		15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL (Check One)	
☐	Names and Specialties Attached; and N/A	☐	Appendix G Rules Followed; or
☐	Duties as in Appendix B; or (Check One)	☒	Equivalent Rules Attached
☐	Equivalent Duties Attached	16. EMERGENCY PROCEDURES (Check One)	
8. TRAINING AND EXPERIENCE		☐	Appendix H Procedures Followed; or
☒	Supplements A & B Attached for Each Individual User; and	☒	Equivalent Procedures Attached
☐	Supplement A Attached for RSO.	17. AREA SURVEY PROCEDURES (Check One)	
9. INSTRUMENTATION (Check One)		☐	Appendix I Procedures Followed; or N/A
☒	Appendix C Form Attached; or	☐	Equivalent Procedures Attached
☐	List by Name and Model Number	18. WASTE DISPOSAL (Check One)	
10. CALIBRATION OF INSTRUMENTS		☒	Appendix J Form Attached; or
☐	Appendix D Procedures Followed for Survey Instruments; or (Check One)	☐	Equivalent Information Attached
☒	Equivalent Procedures Attached; and	19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS (Check One)	
☐	Appendix D Procedures Followed for Dose Calibrator; or N/A (Check One)	☐	Appendix K Procedures Followed; or
☐	Equivalent Procedures Attached	☐	Equivalent Procedures Attached
11. FACILITIES AND EQUIPMENT		20. THERAPEUTIC USE OF SEALED SOURCES	
☒	Description and Diagram Attached	☐	Detailed Information Attached; and
12. PERSONNEL TRAINING PROGRAM		☐	Appendix L Procedures Followed; or (Check One)
☒	Description of Training Attached	☐	Equivalent Procedures Attached
13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL		21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon - 133)	
☒	Detailed Information Attached	☐	Detailed Information Attached
14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (Check One)		22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS	
☒	Appendix F Procedures Followed; or	☐	Detailed Information Attached
☐	Equivalent Procedures Attached	23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b	
☐		☐	Detailed Information Attached

24. PERSONNEL MONITORING DEVICES

TYPE (Check appropriate box)		SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	☐ FILM		
	☐ TLD		
	☐ OTHER <i>(Specify)</i>		
b. FINGER	☐ FILM		
	☒ TLD	R.S. LANDAUER & SONS	MONTHLY
	☐ OTHER <i>(Specify)</i>		
c. WRIST	☐ FILM		
	☐ TLD		
	☐ OTHER <i>(Specify)</i>		

d. OTHER *(Specify)*

25. FOR PRIVATE PRACTICE APPLICANTS ONLY

a. HOSPITAL AGREEING TO ACCEPT PATIENTS CONTAINING RADIOACTIVE MATERIAL			
NAME OF HOSPITAL		b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.	
MAILING ADDRESS		c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.	
CITY	STATE	ZIP CODE	

26. CERTIFICATE *(This item must be completed by applicant)*

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

a. LICENSE FEE REQUIRED (See Section 170.31, 10 CFR 170)		b. APPLICANT OR CERTIFYING OFFICIAL <i>(Signature)</i> <i>D. Sarathi Ram M.D.</i>	
(1) LICENSE FEE CATEGORY: 7C		(1) NAME <i>(Type of Print)</i> DASARATHI RAM, M.D.	
(2) LICENSE FEE ENCLOSED: \$ 580.00		(2) TITLE President	
		c. DATE Jan 14, 1987	

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313M. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S)** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30-36 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES** The information may be used: (a) to provide records to State health departments for their information and use, and (b) to provide information to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for a NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you. A copy of the license issued will routinely be placed in the NRC's Public Document Room, 1717 H Street, N.W., Washington, D.C.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed.
5. **SYSTEM MANAGER(S) AND ADDRESS** Director, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1 NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

RASHDA FIRDAUS, M.D.

2 STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE
OHIO

3. CERTIFICATION

SPECIALTY BOARD
ACATEGORY
BMONTH AND YEAR CERTIFIED
CAMERICAN BOARD OF
RADIOLOGY ELIGIBLE

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING
ALOCATION AND DATE(S) OF TRAINING
B

TYPE AND LENGTH OF TRAINING

LECTURE/
LABORATORY
COURSES
(Hours)
CSUPERVISED
LABORATORY
EXPERIENCE
(Hours)
Da. RADIATION PHYSICS AND
INSTRUMENTATIONCOURSE HELD IN PARMA, OHIO
BY UNIVERSAL CONSULTANTS,
INC.

4HRS

b. RADIATION PROTECTION

NRC LICENSE # 34-20327-01
COURSE HELD ON DEC. 17, 1986

2HRS.

c. MATHEMATICS PERTAINING TO
THE USE AND MEASUREMENT
OF RADIOACTIVITY*Vincent A. Jurgens*

d. RADIATION BIOLOGY

3HRS.

e. RADIOPHARMACEUTICAL
CHEMISTRY

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE

MAXIMUM AMOUNT

WHERE EXPERIENCE WAS GAINED

DURATION OF EXPERIENCE

TYPE OF USE

I-125

200mCi

DURING INSTALLATION

12HRS.

BONE
DENSITOMETRY

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER DASARATHI RAM, M.D.		2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE OHIO		
3. CERTIFICATION				
SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C		
AMERICAN BOARD OF RADIOLOGY		DEC. 1968		
4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES				
FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING		
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D	
a. RADIATION PHYSICS AND INSTRUMENTATION	COURSE HELD IN PARMA, OHIO BY UNIVERSAL CONSULTANTS, INC.	4HRS.		
b. RADIATION PROTECTION	NRC LICENSE # 34-20327-01 COURSE HELD ON DEC. 17, 1986 <i>Vincent A. Jorgensen</i>	2HRS.		
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY				
d. RADIATION BIOLOGY		3HRS.		
e. RADIOPHARMACEUTICAL CHEMISTRY				
5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)				
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
I-125	200mCi	DURING INSTALLATION	12HRS.	BONE DENSITOMETRY

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

HANS A. LINDT, M.D.

2. STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE
OHIO

3. CERTIFICATION

SPECIALTY BOARD
A

CATEGORY
B

MONTH AND YEAR CERTIFIED
C

NRC # 34-17712-01

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	COURSE HELD IN PARMA, OHIO BY UNIVERSAL CONSULTANTS, INC.	4HRS.	
b. RADIATION PROTECTION	NRC LICENSE # 34-20327-01 COURSE HELD ON DEC. 17, 1986 <i>Vincent A. Janyas</i>	2HRS.	
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY		3HRS.	
e. RADIOPHARMACEUTICAL CHEMISTRY			

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
I-125	200mCi	DURING INSTALLATION	12HRS	BONE DENSITOMETRY

Universal Consultants, Inc.

THIS CERTIFIES THAT

RASHDA FIRDAUS, M.D.

HAS SUCCESSFULLY COMPLETED ALL REQUIREMENTS
FOR THE

COURSE ON BASIC RADIOISOTOPE HANDLING TECHNIQUES (8HRS)

AND AS PROOF OF PROFICIENCY IS HEREBY
AWARDED THIS

Certificate of Completion

ON THIS 17TH DAY OF DECEMBER, 1986

Vincent A. Jaryalo
DIRECTOR OF TRAINING

Universal Consultants, Inc.

THIS CERTIFIES THAT

HANS A. LINDT, M.D.

HAS SUCCESSFULLY COMPLETED ALL REQUIREMENTS
FOR THE

COURSE ON BASIC RADIOISOTOPE HANDLING TECHNIQUES (8HRS.)

AND AS PROOF OF PROFICIENCY IS HEREBY
AWARDED THIS

Certificate of Completion

ON THIS 17TH DAY OF DECEMBER, 1986

Vincent L. Fayard
DIRECTOR OF TRAINING

Universal Consultants, Inc.

THIS CERTIFIES THAT

DASARATHI RAM, M.D.

HAS SUCCESSFULLY COMPLETED ALL REQUIREMENTS
FOR THE

COURSE ON BASIC RADIOISOTOPE HANDLING TECHNIQUES (8HRS.)

AND AS PROOF OF PROFICIENCY IS HEREBY
AWARDED THIS

Certificate of Completion

ON THIS 17TH DAY OF DECEMBER, 1986

Vincent A. Fayon
DIRECTOR OF TRAINING

APPENDIX C
INSTRUMENTATION

1. SURVEY METERS

- a. MANUFACTURER'S NAME ---- VICTOREEN
MANUFACTURER'S MODEL NUMBER ----CDV 700
NUMBER OF INSTRUMENTS AVAILABLE ---- 1.
MINIMUM RANGE: 0 MR/HR TO 0.5 MR/HR
MAXIMUM RANGE: 0 MR/HR TO 50.0 MR/HR
- b. MANUFACTURER'S NAME ----
MANUFACTURER'S MODEL NUMBER ----
NUMBER OF INSTRUMENTS AVAILABLE ----
MINIMUM RANGE: MR/HR TO MR/HR
MAXIMUM RANGE: MR/HR TO MR/HR

2. DOSE CALIBRATOR(S)

MANUFACTURER'S NAME -----
MANUFACTURER'S MODEL NUMBER: -----
NUMBER OF INSTRUMENTS AVAILABLE -----

3. INSTRUMENTS USED FOR DIAGNOSTIC PROCEDURES

TYPE OF INSTRUMENT	MANUFACTURER'S NAME	MODEL NO.
BONE DENSITOMETER	LUNAR CORP.	DP3

4. OTHER (e.g., LIQUID SCINTILLATION COUNTER, AREA MONITOR,
VELOMETER)

ITEM #9
1 OF 1 PAGE
PREPARED: 1/8/87

CALIBRATION OF INSTRUMENTS

A SURVEY METERS WILL BE CHECKED FOR OPERABILITY PRIOR TO EACH USE. THIS WILL BE ACCOMPLISHED BY HOLDING THE DETECTOR AGAINST AN INSTRUMENT CHECK SOURCE. IF ANY READING WITH THE SAME GEOMETRY IS NOT WITHIN $\pm 20\%$ OF THE READING DISPLAYED AFTER CALIBRATION, THE INSTRUMENT WILL BE RECALIBRATED. THE READING OBTAINED WILL BE INCLUDED ON ALL RECORDED SURVEYS.

THE UNITS WILL BE CALIBRATED AFTER SERVICING AND AT LEAST ANNUALLY BY THE MANUFACTURER OR BY UNIVERSAL CONSULTANTS, INC., NORTH RIDGEVILLE, OHIO, IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN APPLICATION FOR NRC LICENSE #34-20327-01. RECORDS OF THESE CALIBRATIONS WILL BE MAINTAINED AND RECOMMENDATIONS FOR REPAIR WILL BE FOLLOWED. A SURVEY METER WILL NOT BE USED BEYOND THE ANNIVERSARY OF IT'S LAST SUCCESSFUL CALIBRATION.

ITEM #10
1 OF 1 PAGE
PREPARED: 1/8/87

PERSONNEL TRAINING PROGRAM

ALL PERSONNEL USING THE BONE DENSITOMETER WILL BE GIVEN A TRAINING COURSE BY THE MANUFACTURER AND REQUIRED TO READ THE INSTRUCTION MANUAL PRIOR TO PERFORMING ANY CLINICAL STUDIES.

ANNUALLY, A REVIEW COURSE WILL BE GIVEN BY THE PHYSICIAN PERTAINING TO THE SAFE HANDLING OF RADIOACTIVE MATERIAL AND ITEMS IN 10CFR 19.12.

CONSULTATION WILL BE GIVEN BY UNIVERSAL CONSULTANTS, INC., NORTH RIDGEVILLE, OHIO, AS NEEDED.

ITEM #12
1 OF 1 PAGE
PREPARED: 1/9/87

PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE
MATERIAL

1. THE AUTHORIZED USERS OR HIS/HER DESIGNEE WILL PLACE ALL ORDERS FOR RADIOACTIVE MATERIAL AND WILL ENSURE THAT THE REQUESTED MATERIALS AND QUANTITIES ARE AUTHORIZED BY THE LICENSE. AND THAT POSSESSION LIMITS ARE NOT EXCEEDED. THE RECEIPT AREA IS DESIGNED SUCH THAT RADIATION LEVELS IN UNRESTRICTED AREAS DO NOT EXCEED THE LIMITS SPECIFIED IN 10 CFR 20.105.
2. DURING NORMAL WORKING HOURS, CARRIERS WILL BE INSTRUCTED TO DELIVER RADIOACTIVE PACKAGES DIRECTLY TO THE FACILITY LISTED IN ITEM #1 ON NRC 313M.
3. DURING OFF-DUTY HOURS, RADIOACTIVE PACKAGES WILL NOT BE DELIVERED.
4. PERSONNEL NOT TRAINED IN THE PROPER HANDLING OF RADIOACTIVE MATERIALS ARE NOT TO PERSONALLY ACCEPT PACKAGES CONTAINING RADIOACTIVE MATERIALS.

ITEM #13
1 OF 1 PAGE
PREPARED: 1/8/87

APPENDIX F

PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIAL

1. SPECIAL REQUIREMENTS WILL BE FOLLOWED FOR PACKAGES CONTAINING QUANTITIES OF RADIOACTIVE MATERIAL IN EXCESS OF THE TYPE A QUANTITY LIMITS AS SPECIFIED IN PARAGRAPHS 20.205 (a) (1) AND (c) (1) OF 10 CFR PART 20 (MORE THAN 20 Ci FOR Mo-99 AND Tc-99m). THEY WILL BE MONITORED FOR SURFACE CONTAMINATION AND EXTERNAL RADIATION LEVELS WITHIN 3 HOURS AFTER RECEIPT IF RECEIVED DURING WORKING HOURS OR WITHIN 18 HOURS IF RECEIVED AFTER WORKING HOURS. IN ACCORDANCE WITH THE REQUIREMENTS OF PARAGRAPHS 20.205(a) THROUGH (c). ALL SHIPMENTS OF LIQUIDS GREATER THAN EXEMPT QUANTITIES WILL BE TESTED FOR LEAKAGE. THE NRC REGIONAL OFFICE WILL BE NOTIFIED IN ACCORDANCE WITH THE REGULATIONS IF REMOVABLE

CONTAMINATION EXCEEDS 0.01 $\mu\text{Ci}/100\text{cm}^2$ or if external radiation levels exceed 200 mR/hr AT THE PACKAGE SURFACE OR 10 mR/hr AT 3 FEET (OR 1m).

2. FOR ALL PACKAGES. THE FOLLOWING ADDITIONAL PROCEDURES FOR OPENING PACKAGES WILL BE CARRIED OUT:
 - a. PUT ON GLOVES TO PREVENT HAND CONTAMINATION.
 - b. VISUALLY INSPECT PACKAGE FOR SIGN OF DAMAGE (e.g., WETNESS, CRUSHED). IF DAMAGE IS NOTED. STOP PROCEDURE AND NOTIFY RADIATION SAFETY OFFICER.
 - c. MEASURE EXPOSURE RATE AT 3 FEET (OR 1m) FROM PACKAGE SURFACE AND RECORD. IF >10 mR/hr. STOP PROCEDURE AND NOTIFY RADIATION SAFETY OFFICER.
 - d. MEASURE SURFACE EXPOSURE RATE AND RECORD. IF >200 mR/hr. STOP PROCEDURE AND NOTIFY RADIATION SAFETY OFFICER.

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1 OF 2 PAGES
PREPARED: 1/8/87

e. OPEN THE PACKAGE WITH THE FOLLOWING PRECAUTIONARY STEPS:

- (1) OPEN THE OUTER PACKAGE (FOLLOWING MANUFACTURER'S DIRECTIONS IF SUPPLIED) AND REMOVE PACKING SLIP.
- (2) OPEN INNER PACKAGE AND VERIFY THAT CONTENTS AGREE WITH THOSE ON PACKING SLIP, COMPARE REQUISITION, + PACKING SLIP, AND LABEL ON BOTTLE.
- (3) CHECK INTEGRITY OF FINAL SOURCE CONTAINER (i.e., INSPECT FOR BREAKAGE OF SEALS OR VIALS, LOSS OF LIQUID, AND DISCOLORATION OF PACKAGING MATERIAL).
- (4) CHECK ALSO THAT SHIPMENT DOES NOT EXCEED POSSESSION LIMITS.

* IN CASE OF SPECIAL ORDER (e.g., THERAPY DOSES) ALSO COMPARE WITH PHYSICIAN'S WRITTEN REQUEST.

f. WIPE EXTERNAL SURFACE OF FINAL SOURCE CONTAINER SHIELD AND REMOVE WIPE TO LOW BACKGROUND AREA. CHECK WIPES WITH A THIN-END WINDOW G-M SURVEY METER, AND TAKE PRECAUTION AGAINST THE SPREAD OF CONTAMINATION AS NECESSARY.

g. MONITOR THE PACKING MATERIAL AND PACKAGES FOR CONTAMINATION BEFORE DISCARDING.

(1) IF CONTAMINATED, TREAT AS RADIOACTIVE WASTE.

(2) IF NOT CONTAMINATED, OBLITERATE RADIATION LABELS BEFORE DISCARDING IN REGULAR TRASH.

3. MAINTAIN RECORDS OF THE RESULTS OF CHECKING EACH PACKAGE.

GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIALS

1. WEAR PERSONNEL DOSIMETERS WHENEVER HANDLING THE BONE DENSITOMETER. FINGER RING-TYPE DOSIMETERS WILL BE WORN.
2. DO NOT TOUCH THE AREA WHERE THE SOURCE IS CONTAINED.
3. DO NOT REMOVE ANY INSERTS FROM THE MANUFACTURER-SUPPLIED DENSITOMETER.
4. THE MANUFACTURER'S INSTRUCTION MANUAL WILL BE FOLLOWED.
5. THE UNIT WILL BE TRANSPORTED FROM ONE FACILITY TO THE OTHER BY ONE OF THE AUTHORIZED USERS LISTED WITHIN THIS APPLICATION.
6. THE UNIT WILL BE SECURED IN THE TRUNK OF A AUTOMOBILE.

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1 OF 1 PAGE
PREPARED: 1/8/87

CONTROL NO. 82781

EMERGENCY PROCEDURES

IF AN EMERGENCY ARISES THE RADIATION SAFETY OFFICER
WILL BE NOTIFIED IMMEDIATELY.

THE MANUFACTURER WILL ALSO BE NOTIFIED.

CONSULTATION FROM UNIVERSAL CONSULTANTS, INC. IS AVAILABLE AT
ALL TIMES.

ITEM #16
1 OF 1 PAGE
PREPARED: 1/8/87

APPENDIX J
WASTE DISPOSAL

1. LIQUID WASTE WILL BE DISPOSED OF (CHECK AS APPROPRIATE).

-----IN THE SANITARY SEWER SYSTEM IN ACCORDANCE WITH 20.303 OF
10 CFR, PART 20.

-----HELD FOR DECAY UNTIL RADIATION LEVELS, AS MEASURED IN A LOW
BACKGROUND AREA WITH A LOW-LEVEL SURVEY METER AND WITH ALL
SHIELDING REMOVED, HAVE REACHED BACKGROUND LEVELS. ALL
RADIATION LABELS WILL BE REMOVED OR OBLITERATED, AND THE
GENERATORS WILL BE DISPOSED OF AS NORMAL TRASH.

-----BY COMMERCIAL WASTE DISPOSAL SERVICE (SEE ALSO ITEM 4 BELOW).

-----OTHER (SPECIFY): -----

2. Mo-99/Tc-99m GENERATORS WILL BE (CHECK AS APPROPRIATE).

-----RETURNED TO THE MANUFACTURER FOR DISPOSAL.

-----HELD FOR DECAY UNTIL RADIATION LEVELS, AS MEASURED IN A LOW
BACKGROUND AREA WITH A LOW-LEVEL SURVEY METER AND WITH ALL
SHIELDING REMOVED, HAVE REACHED BACKGROUND LEVELS. ALL
RADIATION LABELS WILL BE REMOVED OR OBLITERATED, AND THE
GENERATORS WILL BE DISPOSED OF AS NORMAL TRASH.

-----DISPOSED OF BY COMMERCIAL WASTE DISPOSAL SERVICE (SEE ALSO
ITEM 4 BELOW).

X
-----OTHER (SPECIFY): RETURN TO MANUFACTURER, IN ORIGINAL CONTAINER

3. OTHER SOLID WASTE WILL BE (CHECK AS APPROPRIATE).

-----HELD FOR DECAY UNTIL RADIATION LEVELS, AS MEASURED IN A LOW
BACKGROUND AREA WITH A LOW-LEVEL SURVEY METER AND WITH ALL
SHIELDING REMOVED, HAVE REACHED BACKGROUND LEVELS. ALL
RADIATION LABELS WILL BE REMOVED OR OBLITERATED, AND THE
WASTE WILL BE DISPOSED OF IN NORMAL TRASH.

-----DISPOSED OF BY COMMERCIAL WASTE DISPOSAL SERVICE (SEE ALSO
ITEM 4 BELOW).

-----OTHER (SPECIFY): -----

4. THE COMMERCIAL WASTE DISPOSAL SERVICE USED WILL BE:

----- (NAME) ----- (CITY, STATE)

NRC/AGREEMENT STATE LICENSE NO. -----