

<b>NRC FORM 313M</b> (9-81) 10 CFR 35	<b>U.S. NUCLEAR REGULATORY COMMISSION</b> <b>APPLICATION FOR MATERIALS LICENSE – MEDICAL</b>	Approved by OMB 3150-0041
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**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.

<b>1.a. NAME AND MAILING ADDRESS OF APPLICANT</b> (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE  Providence Hospital 16001 W. Nine Mi. Rd. Southfield, Michigan 48037  TELEPHONE NO.: AREA CODE (313) 424 3050	<b>1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED</b> (If different from 1.a.) INCLUDE ZIP CODE    
<b>2. PERSON TO CONTACT REGARDING THIS APPLICATION</b>  Thomas Kasza  TELEPHONE NO.: AREA CODE (313) 424 3050	<b>3. THIS IS AN APPLICATION FOR:</b> (Check appropriate item) a. <input type="checkbox"/> NEW LICENSE b. <input checked="" type="checkbox"/> AMENDMENT TO LICENSE NO. 21-02802-03 c. <input type="checkbox"/> RENEWAL OF LICENSE NO.
<b>4. INDIVIDUAL USERS</b> (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)  See Attachment A.	<b>5. RADIATION SAFETY OFFICER (RSO)</b> (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.)  See Attachment B

6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE			
RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)	ADDITIONAL ITEMS:  "X"
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
8506100740 850522 REG LIC30 21-02802-03 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. 1 Date: 10-80

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

## 24. PERSONNEL MONITORING DEVICES

TYPE <small>(Check appropriate box)</small>		SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	FILM		
	TLD		
	OTHER <i>(Specify)</i>		
b. FINGER	FILM		
	TLD		
	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			
CITY	STATE    ZIP CODE		
c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.			

## 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.

<p>a. LICENSE FEE REQUIRED <i>(See Section 170.31, 10 CFR 170)</i></p>	<p>b. APPLICANT OR CERTIFYING OFFICIAL <i>(Signature)</i></p> <p style="text-align: center;"><i>David L. Currin</i></p>
	<p>(1) NAME <i>(Type of Print)</i></p> <p style="text-align: center;">David Currin</p>
<p>(1) LICENSE FEE CATEGORY:</p>	<p>(2) TITLE</p> <p style="text-align: center;">Associate Administrator</p>
<p>(2) LICENSE FEE ENCLOSED: \$ _____</p>	<p>c. DATE</p> <p style="text-align: center;">May 10, 1985</p>

## 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.

ATTACHMENT A

Please delete Shek Chyen Chen, M.D., from the list of individual users.



NRC FORM 313M SUPPLEMENT A  
(9-81)

U.S. NUCLEAR REGULATORY COMMISSION

### TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER  Thomas Kasza			2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE	
<b>3. CERTIFICATION</b>				
SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C		
<b>4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES</b>				
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	St. John Hospital, Detroit 9-79 to 8-80	129	341	
	University of Mich., Ann Arbor 9-83 to 4-85	156	48	
b. RADIATION PROTECTION	St. John Hospital, Detroit 9-79 to 8-80	64	169	
	University of Mich, Ann Arbor 9-83 to 4-85	36		
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	St. John Hospital, Detroit 9-79 to 8-80	45	119	
d. RADIATION BIOLOGY	University of Detroit, 5-79 to 6-79	36	48	
	St. John Hospital, Detroit 9-79 to 8-80	97	256	
	University of Mich, 9-83 to 4-85	72		
e. RADIOPHARMACEUTICAL CHEMISTRY	St. John Hospital, Detroit 9-79 to 8-80	49	129	
<b>5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)</b>				
ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
See Attached List.				

## Attachment B.

## 5. Experience with Radiation

<u>Isotope</u>	<u>Maximum Amount</u>	<u>Where Experience Gained</u>	<u>Duration</u>	<u>Use</u>
$^3\text{H}$	24 mCi	Providence Hospital	3-82 to Present	In-Vitro
$^{14}\text{C}$	48 mCi	Providence Hospital	3-82 to Present	In-Vitro
$^{32}\text{P}$	180 mCi	Providence Hospital	9-80 to Present	Therapy
$^{51}\text{Cr}$	25 mCi	Providence Hospital	9-80 to Present	Diagnostic
$^{57}\text{Co}$	25 mCi	Providence Hospital	11-81 to Present	Diagnostic
$^{60}\text{Co}$	700 Ci	Providence Hospital	3-81 to 1-84	Therapy
$^{60}\text{Co}$	4200 Ci	Veterans Administrat	8-84 to Present	Therapy
$^{67}\text{Ga}$	750 mCi	Providence Hospital	9-79 to Present	Diagnostic
$^{75}\text{Se}$	30 mCi	St. John Hospital	9-79 to 8-80	Diagnostic
$^{81}\text{Rb}-^{81}\text{Kr}$	5 Ci	Providence Hospital	6-83 to Present	Diagnostic
$^{90}\text{Y}$	20 mCi	Providence Hospital	9-80 to Present	Diagnostic
$^{90}\text{Sr}$	50 mCi	Providence Hospital	3-81 to Present	Therapy
$^{99}\text{Mo}$	45 Ci	St. John Hospital	9-79 to 8-80	Diagnostic
$^{99\text{m}}\text{Tc}$	45 Ci	Providence Hospital	9-80 to Present	Diagnostic
$^{111}\text{In}$	10 mCi	Providence Hospital	4-83 to Present	Diagnostic
$^{123}\text{I}$	150 mCi	Providence Hospital	9-80 to Present	Diagnostic
$^{125}\text{I}$	5 mCi	St. John Hospital	9-79 to 8-80	In-Vitro
$^{131}\text{I}$	3 Ci	St. John Hospital	9-79 to 8-80	Therapy
$^{133}\text{Xe}$	10 Ci	St. John Hospital	9-79 to 8-80	Diagnostic
$^{137}\text{Cs}$	500 mCi	Providence Hospital	7-84 to Present	Therapy
$^{201}\text{Tl}$	100 mCi	Providence Hospital	9-80 to Present	Diagnostic
$^{226}\text{Ra}$	500 mCi	Providence Hospital	3-82 to Present	Therapy
Pu-Be Neutron Source	1 Ci	University of Mich- igan	9-84 to 12-84	Research

# **APPENDIX C** **INSTRUMENTATION**

## 1. Survey meters

- a. Manufacturer's name: Kiethley Instruments  
 Manufacturer's model number: 36150 Integrating Survey Meter  
 Number of instruments available: 1  
 Minimum range: 0.1 mR/hr to 200 mR/hr  
 Maximum range: 10 mR/hr to 20000 mR/hr
- b. Manufacturer's name: Texas Nuclear  
 Manufacturer's model number: 2650 GM Meter  
 Number of instruments available: 1  
 Minimum range: 0 mR/hr to 0.1 mR/hr  
 Maximum range: 0 mR/hr to 30 mR/hr

## 2. Dose calibrator

- Manufacturer's name: Squibb Capintec  
 Manufacturer's model number: CRC - 16  
 Number of instruments available: 1

## 3. Instruments used for diagnostic procedures

Type of instrument	Manufacturer's Name	Model No.
Gamma Camera	General Electric	535 Maxicamera
Gamma Camera	Picker International	4-15 (2 units)
Gamma Camera	Picker International	4-11
Mobile Camera	Picker International	Dyna-Mo
Uptake Probe	Picker International	Spectroscaler III A

## 4. Other (e.g., liquid scintillation counter, area monitor, velometer)

See attached list.



Type of Instrument	Number Available	Radiation Detection	Range	Window	Use
Victoreen 666, integrating, portable, ionization chamber	1	$\gamma$	.001 to 300 R/Hr	Thick	Survey, measuring
Picker Labmonitor 642 081	1	$\beta, \gamma$	300 to 30 K CPM Full Scale	10 mg/cm <sup>2</sup>	Monitoring, surveying
Picker GM Survey Meter	1	$\beta, \gamma$	300 to 30K CPM	10 mg/cm <sup>2</sup>	Survey
Anton Electronic Survey Meters, Civil Defense Type	2	$\beta, \gamma$	300 to 30K CPM	10 mg/cm <sup>2</sup>	Survey
Victoreen Vamp	2	$\gamma$	1. to 100 mr/hr	Thick	Monitoring
Victoreen 740	1	$\beta, \gamma$	1 mr to 2.5R/Hr	10 mg/cm <sup>2</sup>	Survey
Victoreen R. Meter	1	$\gamma$	1 to 100R	Thick	Measuring

## CURRENT EQUIPMENT LIST

Type of Instrument	Number Available	Radiation Detection	Range	Window	Use
Victoreen VIP Model 885	2	$\gamma$	1 to 99 mr	Thick	Monitoring
Nuclear Chicago 1195 Na I auto well counter	1	$\gamma$			Measuring
Searle Isocap 300 Liquid Scintillation Counter	1	$\beta, \gamma$			Measuring
Mini Instrument Model 510E GM Type	1	$\beta, \gamma$	0 to 2 KCPS	1.5 to 2.5 mg/cm <sup>2</sup>	Survey
Victoreen Survey Meter Model 740	1	$\alpha, \beta, \gamma$	3 mR/hr to 25 R/hr	0.00025"	Survey

**APPENDIX J**  
**WASTE DISPOSAL**

**Note:** In view of the recent problems with shallow-land burial sites used by commercial waste disposal firms, NRC is encouraging its licensees to reduce the volume of wastes sent to these facilities. Important steps in volume reduction are to segregate radioactive from nonradioactive waste, to hold short-lived radioactive waste for decay in storage, and to release certain materials in the sanitary sewer in accordance with § 20.303 of 10 CFR Part 20.

**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.

☐ 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.\*\*

\* Be sure that waste storage areas were described in Item 11 and that they are surveyed periodically (Item 17).

\*\* These generators may contain long-lived radiometopic contaminants. Therefore, the generator columns will be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

☐ Disposed of by commercial waste disposal service (see also Item 4 below).

☐ Other (specify): \_\_\_\_\_

**\* 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. \_\_\_\_\_