

NRC FORM 313A (RSO)
(2-2007)

U.S. NUCLEAR REGULATORY COMMISSION

RADIATION SAFETY OFFICER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)

Preceptor Attestation (continued)

First Section (continued)

Check one of the following:

3. Additional Authorization as Radiation Safety Officer

I attest that Wendy Charlton is an
Name of Proposed Radiation Safety Officer

Authorized User

Authorized Nuclear Pharmacist

Authorized Medical Physicist

identified on the Licensee's license and has experience with the radiation safety aspects of similar type of use of byproduct material for which the individual has Radiation Safety Officer responsibilities

AND

Second Section

Complete for all (check all that apply):

I attest that Wendy Charlton has training in the radiation safety, regulatory issues, and
Name of Proposed Radiation Safety Officer

emergency procedures for the following types of use:

35.100

35.200

35.300 oral administration of less than or equal to 33 millicuries of sodium iodide I-131, for which a written directive is required

35.300 oral administration of greater than 33 millicuries of sodium iodide I-131

35.300 parenteral administration of any beta-emitter, or a photon-emitting radionuclide with a photon energy less than 150 keV for which a written directive is required

35.300 parenteral administration of any other radionuclide for which a written directive is required

35.400

35.500

35.600 remote afterloader units

35.600 teletherapy units

35.600 gamma stereotactic radiosurgery units

35.1000 emerging technologies, including:

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

1800 Washington Boulevard • Baltimore MD 21230

410-537-3000 • 1-800-633-6101

Martin O' Malley
GovernorAnthony G. Brown
Lieutenant Governor

SEP 9 2008

Shari T. Wilson
SecretaryRobert M. Summers, Ph.D
Deputy SecretaryJane Machin, C.N.M.T., Radiation Safety Officer
Union Memorial Hospital
201 E. University Parkway
Baltimore, MD 21218**RE: Radioactive Material License # MD-07-013-01**

Dear Ms. Machin:

Enclosed is your renewed radioactive materials license, which is being issued in accordance with Maryland Radiation Law and Code of Maryland Regulations (COMAR) 26.12.01.01, Regulations for the Control of Ionizing Radiation. This renewal has been prepared based on your application received in this office on August 20, 2008. Please review it carefully to ensure it is complete and accurate.

Licenses are inspected at least once during the 7-year life of the license. Inspections are performed with greater frequency for more complex licenses. If you have any questions or need assistance on any aspect of this license renewal or any other matter regarding radioactive materials, please contact Mr. Raymond E. Manley, of the Radioactive Materials Division at 410-537-3301. You may also reach our office toll-free by dialing 1-800-633-6101 and requesting extension 3301 or via facsimile at 410-537-3198. Finally the MDE web page, which contains information about all MDE areas of interest, can be accessed at <http://www.mde.state.md.us/arma/Programs/Radiolog/radiolog.html>.

Sincerely,

Roland G. Fletcher, Manager
Radiological Health Program
Air and Radiation Management Administration

RGF/REM/BJP/cc

Enclosures: License amendment renewal (84)
Code (02120)



Department of the Environment

**RADIOLOGICAL HEALTH PROGRAM
RADIOACTIVE MATERIAL LICENSE**

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Pursuant to the Maryland Radiation Act, 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 radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. The license is subject to all applicable rules, regulations and orders of the Maryland State Department of the Environment, now or hereinafter in effect and to any conditions specified below.

<p>1. Name: The Union Memorial Hospital</p> <p>2. Address: 201 East University Parkway Baltimore, Maryland 21218-2895</p>	<p>3. License No.: MD-07-013-01</p> <p>4. Amendment No.: 84 Renewal CODE 02120</p> <p>5. Expiration Date: September 30, 2015</p>	
<p>6. Radioactive material element & mass number:</p> <p>A. Any radioactive material listed in Section G.100 of COMAR 26.12.01.01</p> <p>B. Any radioactive material listed in Section G.200 of COMAR 26.12.01.01</p> <p>C. Any radioactive material listed in Section G.300 of COMAR 26.12.01.01</p> <p>D. Xenon-133</p> <p>E. Yttrium-90</p>	<p>7. Chemical and/or physical form:</p> <p>A. Any radioactive material listed in Section G.100 of COMAR 26.12.01.01</p> <p>B. Any radioactive material listed in Section G.200 of COMAR 26.12.01.01</p> <p>C. Any radioactive material listed in Section G.300 of COMAR 26.12.01.01</p> <p>D. Gas</p> <p>E. Monoclonal antibody - Zevalin</p>	<p>8. Maximum amount of radioactivity which licensee may possess at any one time:</p> <p>A. As needed to perform diagnostic tests</p> <p>B. As needed to perform diagnostic tests</p> <p>C. 800 millicuries</p> <p>D. 400 millicuries</p> <p>E. 100 millicuries</p>



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9. Authorized Uses:

- A. Any uptake, dilution, and excretion procedure approved in Section G.100 of COMAR 26.12.01.01.
- B. Any imaging and localization procedure approved in Section G.200 of COMAR 26.12.01.01.
- C. Any radiopharmaceutical therapy procedure approved in Section G.300 of COMAR 26.12.01.01.
- D. Ventilation studies.
- E. For treatment of non-Hodgkins Lymphoma.

License Conditions

The authorized place of use is the licensee's address stated in Item 2. The licensee must notify the Radiological Health Program 30 days prior to vacating a permanent use address.

11A. The radiation protection program shall be under the supervision of Jane Machin, C.N.M.T.

11B. Radioactive material shall be used by, or under the supervision of:

AUTHORIZED USERS

SPECIFIC USE

Dmitrie Merine, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Mayur Patel, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Stuart Rabinowitz, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Carlton Clark Sexton, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Carlo Contoreggi, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Pavni Vinodray Patel, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Issam Cheikh, M.D.	COMAR 26.12.01.01 §§G.300
David Moses, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Fang-Yun Gan, M.D.	COMAR 26.12.01.01 §§G.100, G.200, G.300 & Xenon-133
Pamela A. Schroeder, M.D.	COMAR 26.12.01.01 §§ G.300

12. The licensee shall comply with all appropriate provisions of COMAR 26.12.01.01 "Regulations for Control of Ionizing Radiation," and shall possess a copy of these regulations.



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License Conditions, Continued

- 13A. 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 transferor indicating that a test has been made within six (6) months prior to the transfer, the sealed source shall not be put into use until tested. If there is reason to suspect that a sealed source might have been damaged, or might be leaking, it shall be tested for leakage before further use.
- 13B. 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 a device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate.
- 13C. Records of leak tests shall be kept in units of microcuries and maintained for inspection by the Department.
- 13D. 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 Administrator, Radiological Health Program, 1800 Washington BLVD, Suite 750, Baltimore, Maryland 21230 describing the equipment involved, the test results, and the corrective action taken.
- 13E. Test for leakage and/or contamination shall be performed by persons specifically authorized by the Department, the U.S. Nuclear Regulatory Commission or another Agreement State to perform such services.
- 13F. Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- 13G. Except for alpha sources, 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 tested within six months prior to the date of use or transfer.



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License Conditions, Continued

14. Sealed sources containing radioactive material shall not be opened.
15. The licensee shall conduct a physical inventory every six (6) months to account for all sealed sources received and possessed under the license. The records of the inventories shall be maintained for three (3) years from the date of the inventory for inspection by the Department, and shall include the quantities and kinds of radioactive material, location of sealed sources, and the date of the inventory.
16. The licensee may use the Calicheck or Lineator device for doing linearity tests of his dose calibrator provided he follows the procedures in the respective manual.
17. The licensee shall elute generators and process radioactive material with reagent kits in accordance with instructions furnished by the manufacturer on the label attached to or in the leaflet or brochure that accompanies the generator or reagent kit.
- 18A. The licensee shall perform a test to detect and quantify the activity of molybdenum-99 contamination in each elution of technetium-99m from a molybdenum-99/technetium-99m generator and in each extraction or separation of technetium-99m from molybdenum-99 not contained in a generator.
- 18B. The licensee shall not use technetium-99m for human use that contains more than 0.15 microcurie of molybdenum-99 per millicurie of technetium-99m. The limit for molybdenum-99 contamination represents a maximum value and molybdenum-99 contamination should be kept as low as reasonably achievable below this limit.
- 18C. The licensee shall establish written procedures for personnel performing tests to detect and quantify molybdenum-99 contamination. These procedures shall include all necessary calculations and steps to be taken if activities of molybdenum-99 in excess of the limit specified in Item 18B. above are detected.



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License Conditions, Continued

- 18D. Personnel performing tests to detect and quantify molybdenum-99 contamination shall be given specific training in performing these tests prior to conducting such tests.
- (1) The licensee shall maintain for inspection by the Department records of the results of each test performed to detect and quantify molybdenum-99 contamination and records of training given to personnel performing these tests.
 - (2) Records described in Subitem (1) above shall be maintained for two (2) years following the performance of the tests and the training of personnel.
19. Food and beverage containers shall not be discarded in radioactive or normal trash containers in licensee's areas utilizing radioactive materials.
- 20A. The licensee shall not make any false statement, representation, or certification in any application, record, report, plan, or other document regarding radiation levels, tests performed or radiation safety conditions or practices. Additionally, the licensee shall not falsify, tamper with, or render inaccurate any monitoring device or method.
- 20B. Violation of any term, condition, or regulation could subject the licensee to administrative or civil penalty or criminal prosecution, as specified in Title 8, Radiation, of the Article Environment of the Annotated Code of Maryland.
21. The licensee shall not transfer ownership and/or control of this license to any person or entity without providing required information regarding the transfer for the agency's review and without receiving written authorization for the transfer by the agency



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License Conditions, Continued

- 22. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material authorized by this license in accordance with statements representations, and procedures contained in:
 - Renewal Application dated August 20, 2008.

COMAR 26.12.01.01 "Regulations for Control of Ionizing Radiation" shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

FOR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT

Roland G. Fletcher, Manager III
Radiological Health Program

August 22, 2008

8/22/08 8/26/08

ITEM 7

Radiation Safety Officer

Jane Machin, C.N.M.T.

Documentation of training and experience for the above individual is currently on file under this license.

Delegation of authority is attached.

Authorized Users

AUTHORIZED USERS	SPECIFIC USE
Mayur Patel, M.D.	Section G.29, G.31, G.35 and Xenon
Pavni Vinodray Patel, M.D.	Section G.29, G.31, G.35 and Xenon
David Moses, M.D.	Section G.29, G.31, G.35 and Xenon
Stuart Rabinowitz, M.D.	Section G.29, G.31, G.35 and Xenon
Carlo Contoreggi, M.D.	Section G.29, G.31, G.35 and Xenon
Fang-Yun Gan, M.D.	Section G.29, G.31, G.35 and Xenon
Carlton Clark Sexton, M.D.	Section G.29, G.31, G.35 and Xenon
Dimitri Merine, M.D.	Section G.29, G.31, G.35 and Xenon
Issam Cheikh, M.D.	Section G.35
Pamela A. Schroeder, M.D.	Section G.35

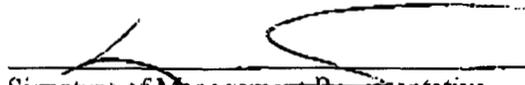
Documentation of training and experience for the above individuals is currently on file under this license.

ITEM 7.2

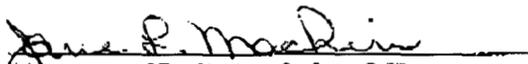
Delegation of Authority

Memo To: Mayur M. Patel, Radiation Safety Officer
From: Chief Executive Officer
Subject: Delegation of Authority

You, Jane Machin, CNMT have been appointed Radiation Safety Officer and are responsible for ensuring the safe use of radiation. You are responsible for managing the radiation protection program; identifying radiation protection problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; stopping unsafe activities; and ensuring compliance with regulations. You are hereby delegated the authority necessary to meet those responsibilities, including prohibiting the use of radioactive material by employees who do not meet the necessary requirements and shutting down operations where justified by radiation safety. You are required to notify management of situations where staff are not cooperating and not addressing radiation safety issues. In addition, you are free to raise issues with the Maryland Department of the Environment at anytime. It is estimated that you will spend ten hours per week conducting radiation protection activities.


Signature of Management Representative
HARRISON J. RIDER III
PRESIDENT

I accept the above responsibilities,


Signature of Radiation Safety Officer

cc: Affected department heads