



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

February 15, 2005

Docket No. 03001239
Control No. 135589

License No. 06-00253-04

John J. Meehan
President and CEO
Hartford Hospital
80 Seymour Street
Hartford, CT 06102

SUBJECT: HARTFORD HOSPITAL, ISSUANCE OF LICENSE RENEWAL,
CONTROL NO. 135589

Dear Mr. Meehan:

This refers to your request for renewal of your NRC license. Enclosed with this letter is the renewed license.

Please note the following:

1. Your Radiation Safety Officer, Peter Mas, informed us that your gas chromatograph is no longer in use and the intact electron capture detector (including the nickel 63 foil) is in storage pending disposal. Consequently we have listed your Radiation Safety Officer as non-medical user for supervision of storage of this device instead of listing operational users.
2. In accordance with NRC Regulatory Issue Summary (RIS) 2004-17: Revised Decay-In-Storage Provisions for the Storage of Radioactive Waste Containing Byproduct Material (<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2004/ri200417.pdf>), your license has been modified. Your license now contains a revised decay-in-storage (DIS) condition. This revised condition permits greater flexibility for DIS of waste by eliminating a specific holding period prior to disposal. Please review the RIS 2004-17, and the revised condition carefully to ensure that you understand its requirements.

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 I Office, Licensing Assistance Team, (610) 337-5239, so that we can provide appropriate corrections and answers.

The NRC is required to have your Taxpayer Identification Number in order to make payments (refunds). The self-addressed, stamped NRC Form 531, "Request for Taxpayer Identification Number," is enclosed.

The NRC expects licensees to conduct their programs with meticulous attention to detail and high standards of compliance. Because of the serious consequences to employees and the

public that can result from failure to comply with NRC requirements, you must conduct your program according to NRC regulations, the conditions of your NRC license, and the representations made in your application.

Please 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. Notify the NRC in writing when:
 - a) an authorized user, authorized medical physicist or Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change;
 - b) the mailing address changes;
 - c) the name on the license changes; or
 - d) permitting an individual to function as a temporary Radiation Safety Officer in accordance with 10 CFR 35.24(c).
3. In accordance with 10 CFR 30.36(d), notify the 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 acquire or possess and use authorized material.
4. Request and obtain a license Amendment before you:
 - a) permanently change Radiation Safety Officers;
 - b) receive byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license; or
 - c) add or change the areas of use, except as allowed by 10 CFR 35.13(e) and with the appropriate notification described in 10 CFR 35.14(b)(4);
 - d) change the name or ownership of your organization;
 - e) change the address(es) of use identified on the license;
 - f) receive, prepare, or use byproduct material for a type of use that is not authorized on the license;

- g) permit anyone to work as an authorized user or authorized medical physicist, except as allowed by 10 CFR 35.13(b) and with the appropriate notification described in 10 CFR 35.14(a); or
 - h) revise procedures required by 10 CFR 35.610, 35.642, 35.643, or 35.645, as applicable, where such revision reduces radiation safety.
5. Submit a complete renewal application 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.

In addition, please note that NRC Form 313 requires the applicant, by 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 a certifying official of the licensee rather than a consultant.

You will be periodically inspected by the 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 NUREG 1600, "General Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy).

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(14).

In accordance with 10 CFR 2.390, a copy of this letter will be placed in the NRC Public Document Room and will be accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html>.

Thank you for your cooperation.

Sincerely,

***Original signed by Penny Lanzisera
for***

Sandra Gabriel
Senior Health Physicist
Medical Branch
Division of Nuclear Materials Safety

J. Meehan
Hartford Hospital

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Enclosures:

1. Amendment No. 94
2. 10 CFR Parts 19, 20, 21, 30, 33, 35, 71, 170, and 171
3. NRC Forms 3, 313, and 531
4. Section 206 of the Energy Reorganization Act of 1974
5. NUREG 1600, General Policy and Procedure for NRC Enforcement Actions
(Enforcement Policy)

cc:

Peter J. Mas, M.S., Radiation Safety Officer

J. Meehan
Hartford Hospital

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OFFICE	DNMS/RI	N	DNMS/RI	N	DNMS/RI			
NAME	SXu/SSX		SGabriel/PAN for SLG2					
DATE	2/15/2005		2/15/2005					

OFFICIAL RECORD COPY

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.

<p>Licensee</p> <p>1. Hartford Hospital</p> <p>2. 80 Seymour Street Hartford, Connecticut 06102</p>	<p>In accordance with the letter dated August 30, 2004,</p> <p>3. License number 06-00253-04 is amended in its entirety to read as follows:</p> <p>4. Expiration date February 28, 2015</p> <p>5. Docket No. 030-01239 Reference No.</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material permitted by 10 CFR 35.100</p> <p>B. Any byproduct material permitted by 10 CFR 35.200</p> <p>C. Any byproduct material permitted by 10 CFR 35.300</p> <p>D. Any byproduct material permitted by 10 CFR 35.400</p> <p>E. Strontium-90 permitted by 10 CFR 35.400</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Any</p> <p>D. Sealed Sources (Medi-Physics, Inc. Model 6711 [manufactured by Medi-Physics, Inc. or Amersham Health], 3M Health Physics Service Model Series 6500, Medi-Physics, Inc. Model CDCT1, Nuclear Associates Model 69-600 series, Best Medical International Models 81-01 and 81-02)</p> <p>E. Sealed Sources (Isotope Products, Inc. Model BF90Ti series [labelled as Nuclear Associates Model 67-850])</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. As needed</p> <p>B. As needed</p> <p>C. 0.75 curies</p> <p>D. 2 curies</p> <p>E. 150 millicuries</p>

MATERIALS LICENSE SUPPLEMENTARY SHEET

License Number

06-00253-04

Docket or Reference Number

030-01239

Amendment No. 94

- | | | |
|---|---|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
| F. Any byproduct material permitted by 10 CFR 35.500 | F. Sealed sources (North American Scientific Model MED 3601; Isotope Products Laboratories Model NES-8412, NES-8422 through NES-8426, NES-8429, AND NES-8497) | F. 300 millicuries per source and 9 curies total |
| G. Iridium-192 permitted by 10 CFR 35.600 | G. Sealed Sources [Nucletron Model 105.002 (manufactured by Mallinckrodt Medical B.V. or AEA Technology, Inc.)] | G. 2 sources, 1 source not to exceed 12 curies and 1 source not to exceed 10 curies |
| H. Hydrogen 3 | H. Any | H. 10 millicuries |
| I. Carbon 14 | I. Any | I. 10 millicuries |
| J. Phosphorus 32 | J. Any | J. 10 millicuries |
| K. Sulfur 35 | K. Any | K. 10 millicuries |
| L. Chromium 51 | L. Any | L. 10 millicuries |
| M. Technetium 99m | M. Any | M. 100 millicuries |
| N. Iodine 125 | N. Any | N. 10 millicuries |
| O. Iodine 131 | O. Any | O. 10 millicuries |
| P. Ytterbium 169 | P. Any | P. 10 millicuries |
| Q. Nickel 63 | Q. Foil contained in Hewlett-Packard Model 18724A detector cell | Q. 15 millicuries |
| R. Cesium 137 | R. Sealed Sources (Oak Ridge National Laboratories Model ISO-1000) | R. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State |

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|---|----------------------------------|--|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
|---|----------------------------------|--|

S. Cesium 137	S. Sealed Source (Isotope Products Laboratories Model 225)	S. 250 millicuries
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T. Strontium 90	T. Sealed Source (Nuclear Enterprises Model 2503)	T. 10 millicuries
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9. Authorized use:

- A. Any uptake, dilution and excretion study permitted by 10 CFR 35.100.
- B. Any imaging and localization study permitted by 10 CFR 35.200.
- C. Any diagnostic study or therapy procedure permitted by 10 CFR 35.300.
- D. Any manual brachytherapy procedure permitted by 10 CFR 35.400.
- E. Strontium-90 for ophthalmic radiotherapy permitted by 10 CFR 35.400.
- F. Diagnostic medical use of sealed sources permitted by 10 CFR 35.500 in compatible devices registered pursuant to 10 CFR 30.32(g).
- G. One source for medical use permitted by 10 CFR 35.600, in a Nucletron Corporation Model 105.999 remote afterloader unit. The source may not exceed 10 curies at the time of installation. One source in its shipping container as necessary for replacement of the source in the remote afterloader unit.
- H. through P. Research and development as defined in 10 CFR 30.4; animal studies.
- Q. Storage with intent to dispose.
- R. For irradiation of materials in self-shielded irradiator devices that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State and which have been distributed in accordance with a Commission or Agreement State specific license authorizing distribution to persons specifically authorized by a Commission or Agreement State license to receive, possess, and use the devices.
- S. and T. Calibration of the licensee's instruments.

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CONDITIONS

10. A. Licensed material may be used or stored at the licensee's facilities located at Hartford Hospital, 80 Seymour Street, Hartford, Connecticut. Licensed material may be received at 75 Jefferson Street and 85 Retreat Avenue, Hartford, Connecticut.
- B. Only licensed material listed in 6.A., 6.B., 6.C. and 6.D. may be used or stored at Connecticut Childrens Medical Center (CCMC), 282 Washington Street, Hartford Connecticut.
- C. Only licensed material listed in 6.A., 6.B. and 6.F. may be used or stored at 100 Simsbury Road, Suite 202, Avon, Connecticut.
- D. Only licensed material listed in 6.A., 6.B. and 6.F. may be used or stored at 704 Hebron Avenue, Glastonbury, Connecticut.
- E. Only licensed material listed in 6.A., 6.B. and 6.F. may be used or stored at 100 Retreat Avenue, Suite 811, Hartford, Connecticut.
- F. Only licensed material listed in 6.A, 6.B. and 6.F. may be used or stored at 1260 Silas Deane Highway, Suite 106, Wethersfield, Connecticut.

11. The Radiation Safety Officer for this license is Peter J. Mas, M.S.

Licensed material is only authorized for use by, or under the supervision of:

- A. Individuals permitted to work as an authorized user and/or authorized medical physicist in accordance with 10 CFR 35.13 and 35.14.
- B. The following individuals are authorized users for medical use as indicated:

<u>Authorized Users</u>	<u>Material and Use</u>
Abdul Alkeylani, M.D.	35.100; 35.200; 35.500
Allen A Carrier, M.D.	35.100; 35.200; 35.500
Brett Duncan, M.D.	35.100; 35.200; 35.500
Melissa Ferraro-Borgida, M.D.	35.100; 35.200; 35.500
Carol Y. Gemayel, M.D.	35.100; 35.200; 35.500
Steven B. Goldblatt, M.D.	35.100; 35.200; 35.500
Gary V. Heller, M.D.	35.100; 35.200; 35.500

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Authorized UsersMaterial and Use

M. Reza Mansoor, M.D.

35.100; 35.200; 35.500

Asad A. Rizvi, M.D.

35.100; 35.200; 35.500

Edward B. Cronin, M.D.

35.100; 35.200; 35.300; 35.500

John Opalacz, M.D.

35.100; 35.200; 35.300; 35.500

Ronald J. Rosenberg, M.D.

35.100; 35.200; 35.300; 35.500

Reuben Rock, M.D.

35.100; 35.200; 35.300; 35.500

Helaine Bertsch, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Timothy S. Boyd, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Judith A. Buckley, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Robert J. Dowsett, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Stephen H. Hauser, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Susan Y. Kim, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Kenneth Leopold, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Jacqueline M. Lyon, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

Andrew L. Salner, M.D.

35.300; 35.400; Iridium 192 for uses in a High Dose Rate Remote Afterloader Unit

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C. The following individuals are authorized medical physicists as indicated:

Authorized Medical Physicists

Material and Use

Douglas E. Boccuzzi, M.S.

Strontium 90 in an eye applicator for calibrations and activity calculations; Iridium 192 in a High Dose Rate Remote Afterloader Unit for calibrations, spot-checks, and training

D. Jay Friedman, M.S.

Strontium 90 in an eye applicator for calibrations and activity calculations; Iridium 192 in a High Dose Rate Remote Afterloader Unit for calibrations, spot-checks, and training

Janet D. Gortney, M.S.

Strontium 90 in an eye applicator for calibrations and activity calculations; Iridium 192 in a High Dose Rate Remote Afterloader Unit for calibrations, spot-checks, and training

Kevin Norton, M.S.

Strontium 90 in an eye applicator for calibrations and activity calculations; Iridium 192 in a High Dose Rate Remote Afterloader Unit for calibrations, spot-checks, and training

Robert E. Rice, III, M.S.

Strontium 90 in an eye applicator for calibrations and activity calculations; Iridium 192 in a High Dose Rate Remote Afterloader Unit for calibrations, spot-checks, and training

D. The following individuals are authorized users for non-medical uses as indicated:

Users

Material and Use

Laurine M. Bow, Ph.D.

Hydrogen 3; Carbon 14; Phosphorus 32; Sulfur 35; Chromium 51; Technetium 99m; Iodine 125; Iodine 131; Ytterbium 169

Peter J. Mas, M.S.

Nickel 63 (storage); Strontium 90 and Cesium 137 for instrument calibration

Robert E. Rice, M.S.

Strontium 90 and Cesium 137 for instrument calibration

Ronald J. Rosenberg, M.D.

Hydrogen 3; Carbon 14; Phosphorus 32; Sulfur 35; Chromium 51; Technetium 99m; Iodine 125; Iodine 131; Ytterbium 169

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Users

Bradford Sherburne, M.D.

Material and Use

Cesium 137 for irradiation of material

12. 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 financial assurance for decommissioning.
13. The licensee shall not use licensed material in or on human beings except as provided otherwise by specific condition of this license.
14. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
15. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- C.. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.
- D. Sealed sources need not be tested if they 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 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 (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- F. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

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- G. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
16. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
17. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model number, and the date of the inventory.
18. Maintenance, repair, cleaning, replacement, and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.
19. The licensee shall not repair, remove, replace, or alter any of the following: electrical and mechanical systems that control source or shielding movement, the irradiator's shielding or sealed source, safety interlocks, or any component that may affect safe operation of the irradiator. These activities shall be performed by a person specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
20. The licensee is authorized to hold byproduct material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:
- A. Monitors byproduct material at the surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey meter set on its most sensitive scale and with no interposed shielding.
 - B. Removes or obliterates all radiation labels, except for radiation labels on materials that are within containers and that will be managed as biomedical waste after they have been released from the licensee.
 - C. Maintains records of the disposal of licensed materials for 3 years. The record must include the date of disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the disposal.
21. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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22. 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. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. Additionally, this license condition does not limit the licensee's ability to make changes to the radiation protection program as provided for in 10 CFR 35.26. 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 November 4, 2004 (ML043220527)
 - B. Letter dated February 9, 2005
 - C. Letter dated February 11, 2005



For the U.S. Nuclear Regulatory Commission

Date February 15, 2005
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By ***Original signed by Penny Lanzisera for***

Sandra Gabriel
Medical Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406