Policies and Procedures for the
Massachusetts General Hospital
Radiation Safety Committee

PURPOSE

This document defines the membership, authority, responsibilities and operating rules of the hospital’s Radiation Safety Committee.

POLICY

The Radiation Safety Committee is the governing body for all aspects of radiation protection within the hospital, including all affiliated research, clinical, instructional and service units utilizing radiation sources in facilities owned or controlled by the hospital and operating under the hospital’s radioactive materials license issued by the Commonwealth of Massachusetts, Department of Public Health - Radiation Control Program. The Committee will ensure that all possession, use and disposition of radiation sources by hospital personnel complies with pertinent federal and state regulations and with the specific conditions of licenses issued to the hospital, and that all concomitant radiation exposures are maintained ALARA.

DEFINITIONS

ALARA - one of the basic premises of radiation protection, i.e., that all radiation exposures should be kept as low as reasonably achievable, taking into consideration all social and economic factors.

Management - the chief executive officer or that person’s delegate; Director, Corporate Compliance is the principal representative of hospital management for radiation protection.

Radiation source - a general term that includes any radioactive material or radiation-generating machine that can emit ionizing or non-ionizing radiation.

RESPONSIBILITIES AND AUTHORITY

The Committee is empowered and directed to promulgate policies, rules and procedures for the safe use of radiation sources. The Committee is responsible for assuring that only qualified individuals are permitted to use radiation sources, or to supervise such use by others. The Committee oversees, reviews and audits the activities of the Radiation Safety Officer (RSO) and all users of hospital radiation sources. The Committee reports to the Senior Management Committee.

MEMBERSHIP

Membership shall include an authorized user of each type of use permitted by the license, the Radiation Safety Officer (RSO), a representative of Nursing Service, and a representative of management who is neither a responsible user nor the RSO. The chairperson and other members of the Committee are appointed by the President of the hospital for indefinite terms on the basis of professional qualifications. Appointments are made to provide representation from major academic, clinical and research areas that use radiation sources. A list of current members is shown in Appendix 1.

The membership of the Committee is reviewed at least annually, and additions or replacements are appointed as needed.
MEETINGS, AGENDA AND QUORUM

The Committee is required to meet at least once during each calendar quarter, or more frequently at the call of the chairperson, although monthly meetings are usually held.

A recommended standard agenda for Committee meetings is attached in Appendix 2. A quorum consists of at least one-third (1/3) of the members appointed to represent various radiation uses, plus the RSO and the representative of management. All members present are entitled to vote. Members who have a conflict of interest relating to Committee deliberations must abstain from voting. Between meetings, interim decisions may be made by established subcommittees or by a majority of all voting members via a mailed ballot, but such decisions shall not be considered final until ratified by vote at a called meeting of the Committee. Parliamentary procedures shall be determined by Robert's Rules of Order.

RECORDS AND REPORTS

The Committee publishes its basic policies and rules in the form of a Radiation Safety Policy Manual and it authorizes and directs the RSO to develop and promulgate such procedures and records as are necessary for compliance with all federal and state radiation control regulations and for effective interpretation and implementation of the policies of the Committee. The minutes of the Committee's meetings, together with all reports submitted to the Committee, serve as the primary documentation of the radiation protection program of the hospital. The minutes of each meeting must include the date of the meeting, the members present and absent, a summary of deliberations and discussions, recommended actions and the numerical results of all ballots, and ALARA program reviews.

A copy of the minutes of all Committee meetings, with all subcommittee reports and attachments is maintained in the Radiation Safety Committee Office, Bartlett 501.

AREAS OF RESPONSIBILITY

The main functions of the RSC fall under the following major categories:

User Authorization – The RSC reviews and evaluates all new applications for authorization to use radiation sources and all applications for revisions to previous authorizations that involve significant changes in conditions or radiation exposure potential as determined by the RSO. All authorizations approved by the RSO or by the RSC Chairman become final only when ratified by majority vote of the Committee at a called meeting.

Human Uses – The RSC evaluates and approves or disapproves all proposed uses of radioactive materials on or in humans for investigational, routine and non-routine clinical procedures and all radiation sources used in human research. The review of the proposed use and of the individual's qualifications to use radiation on human subjects is conducted by the committee after the adequacy of facilities and general conditions for radiation protection have been verified by the RSO.

Audit - The RSC audits any or all aspects of the radiation safety program. The Committee may select the topics to be audited on the basis of their relative importance and the time that has elapsed since the last audit. Audits are to be preplanned and conducted to assess the performance of the RSO, or users of radiation sources.

The Radiation Safety Committee shall:
1. Review all permit applications on the basis of safety, training and experience standards required by licensing agencies and by institutional policies; approve or reject the application.

2. Review the training and experience of radiation workers prior to allowing radionuclide use.

3. Review all proposed methods and uses of radioactive materials within the research and clinical community. Authorize or reject such uses as appropriate.

4. Prescribe special conditions that may be necessary for the safe handling of radionuclides including: additional training, limitation of dosage to humans, the designation of restricted areas of use, proper disposal methods, individual bioassay requirements, special monitoring procedures, and proper handling of spills or other radiation accidents.

5. Receive and review at least quarterly reports from the RSO regarding:
   - results of area monitoring;
   - personnel exposures, particularly as mandated by the institutional ALARA program;
   - cause and subsequent actions taken involving accidents in handling, storing or using radionuclides;
   - audits of laboratories in which radionuclides are used;
   - misadministrations of radionuclides to patients

6. Recommend remedial actions if unsafe procedures are being used or where appropriate regulations are not being followed.

7. Inform and advise personnel on all matters relative to the safe use of ionizing radiation including diagnostic x-rays.

8. Advise regarding the safety and welfare of personnel and provide and approve content of educational programs to personnel for the safe handling and use of such radioactive sources both for their own safety and the safety of others.

9. Act as a consultant to the institution in areas concerning non-ionizing radiation safety.

10. Review on an annual basis the radiation safety program to determine that all activities are being conducted safely in accordance with regulation and institutional policies. The review shall include records, reports from the RSO, results from inspections, written safety procedures and management control systems.

11. Review, approve or disapprove, and recommend amendments to all research protocols in which human subjects will receive radiation exposure and so inform the Human Research Committee.

12. The RSC will review the RSO’s Emergency Response Team (RSERT) plan.

Rev. #2
4/9/07
Appendix 1

Members of the Radiation Safety Committee

Ronald J. Callahan, Ph.D., Chairman
Nuclear Medicine

Peter J. Biggs, Ph.D.
Radiation Oncology

Ralph Weissleder, M.D., Ph.D.
Radiology

Gordon L. Brownell, Ph.D.
Radiology

Rex Woodleigh, M.M.Sc.
Radiation Safety Officer

John F. Burke, M.D.
Surgical Service

Ming-Yong, Yu, M.D., Ph.D.
Surgery

John A. Correia, Ph.D.
(Vice Chairman)
Radiology

Gilbert H. Daniels, M.D.
Thyroid Unit

Alan J. Fischman, M.D., Ph.D.
Nuclear Medicine

Bob Liu, Ph.D.
Radiology

Catherine M. Mannix, Bsn,Ocn, R.N.
Radiation Oncology

Tara Medich, MS, CHP
Radiation Safety Office

Keith W. Miller, Ph.D.
Anesthesia

Maryanne Spicer
Administration
Appendix 2

Radiation Safety Committee Standard Agenda

1. Endorsement of Previous Month’s Minutes

2. New Business

3. Previously Deferred Protocols

4. New Protocols – Advisory to the Human Research Committee

5. Laser Safety Committee Protocols

6. Administratively Approved Protocols

7. Radiation Safety Office Report
   7a. New Permit Applications
   7b. Renewals
   7c. Amendments
   7d. ALARA Report
   7e. Any other business
Appendix 3

Procedures for the Review of Human Research Protocols
Involving Exposure of Subjects to Ionizing and Non-Ionizing Radiation

Protocols involving research related exposure to human subjects are sent to the Radiation Safety Committee by Human Research Committee staff.

1. Date stamped upon receipt by the Radiation Safety Committee
2. Logged-in electronic data base by date/Accession number (issued by HRC)
3. Preliminary review conducted by Committee Secretary
4. Secondary review conducted by Committee Chairman

The protocol review involves the following considerations:

1. Type of radiation exposure, i.e., x-ray, fluoroscopy, radiopharmaceutical
2. Quantitative estimate of total radiation exposure
3. Regulatory status of radiation generating devices and/or radiopharmaceuticals.
4. For radioactive drugs, selection of appropriate review process, i.e., RSC or RDRC
5. The population being exposed, i.e., adults, children, healthy volunteers
6. Consent Form language

7. The Committee Chairman determines whether a protocol is: (a) approved as submitted, (b) investigator should be notified that changes to protocol be made and sent back to the RSC for further review, or (c) sent out for full review to another member(s) of the RSC or the Laser Safety Committee when appropriate. At times the Chairman is authorized to administratively protocols, however, this is only performed if the Chairman determines that radiation exposure presents only minimal risk to the subjects.

8. All reviews will be presented to the full Radiation Safety Committee at scheduled monthly meetings. Protocols are discussed and recommendations, if any, are made. A final vote to approve/disapprove is taken.

9. Final comments and RSC review submitted to the HRC following the meeting by the Committee Secretary with the Chairman’s and/or committee’s recommendations.

DFCI Protocol Reviews

All research protocols involving cancer therapy in partners-affiliated hospitals are reviewed by the DFCI Scientific Review Committee and IRB. In some cases, these protocols involve research related radiation exposure at MGH. In order for the MGH RSC to have the opportunity to review and approve such protocols, all protocols submitted to the DFCI SRC are forwarded to the MGH RSC for review.

The Committee Chairman determines whether a protocol is: (a) approved as submitted, (b) protocol administrator and investigator will be notified by e-mail that changes to protocol be made and sent back to the RSC for further review, or (c) sent out for full review to another member(s) of the RSC. At times the Chairman is authorized to administratively approve protocols, however, this is only performed if the Chairman determines that radiation exposure presents only minimal risk to the subjects.
Appendix 4

Procedure for the Issuance of Permits to Use
Radioactive Materials for Human Use

1. The applicant must be a physician and must meet training and experience requirements listed in federal and state regulations. Prior to submitting the application, the prospective applicant should fully discuss training, purpose and procedures with the Radiation Safety Officer. Applicants will then contact the Radiation Safety Committee requesting an application to use radiopharmaceuticals in humans.

2. The Committee Secretary prepares a packet, which includes: Application, MGH Training/Experience Forms and Form NRC-313M and sends to the applicant.

3. Forms are returned, reviewed by Committee Secretary to ensure proper paperwork is returned and forwarded to the Radiation Safety Officer (RSO). The RSO will interview the applicant and report the findings at the next scheduled Radiation Safety Committee meeting.

4. The RSC will determine whether applicant is qualified to hold permit.

Amendment to Human Use Permit

Requests by human use permit holders to use a new radioactive drug for clinical or research use, will be added upon submission of a permit amendment. Any subsequent new protocols using the same radioactive drug will undergo appropriate HRC and/or RSC review, although a permit amendment will not be required.
Appendix 5

Procedure for the Issuance of Permits to Use
Radioactive Materials for Non-Human Use

1. Applicants contact the Radiation Safety Committee requesting an application to use radiopharmaceuticals for non-human research studies.

2. The Committee Secretary prepares a packet, which includes: Application, MGH Training/Experience Forms, Request for Film Badge, Form B’ (Request to Use Radionuclides in the MGH Animal Facility, if applicable).

3. Forms are returned and reviewed by the Committee Secretary. It will be determined at that time if new applicants (new MGH employees) need to attend the Radiation Safety Orientation. If so, applicants are so notified.

4. Once the application and accompanying forms are received, the application will then be forwarded to the Radiation Safety Officer (RSO). The RSO will then interview the applicant and will report his findings to the RSC at the next scheduled meeting and the members will determine whether applicant is qualified to hold permit.

Approval of Radioisotope Permits

Once the applications are approved by the RSC, the Committee Secretary prepares the documents for signature by the Director, Corporate Compliance and the Chairman of the RSC. The documents are then copied and distributed to all new permit holders, the Radiation Safety Offices in the Main Campus and Charlestown. Files of all permits, permit amendments and personnel are kept in the RSC office.

Renewal of Radioisotope Permits

Permits are valid for two years. The Committee Secretary will notify permit holders in writing 60 days prior to permit expiration. Renewal forms are attached along with the latest Personnel Revision. Licensees are requested to amend changes in personnel (additions/deletions) and at this time, review their radioisotope inventory and possession limits. They are also instructed to attend a mandatory re-retraining radiation safety session. Licensees have 30 days to return completed paperwork. The Committee Secretary reviews the application, makes notes of changes in personnel and/or radioisotopes and forwards the application to the Asst. Radiation Safety Officer who will then report her findings at the next scheduled meeting of the RSC.

Amending a Radioisotope Permit

An Amendment form to change a permit is available in the Radiation Safety Office manual. Also, by contacting the RSC, an amendment can be electronically sent, mailed or faxed. Applicants can request changes in the possession limits of radioisotopes and adding/deleting laboratory space. The Amendment is then returned to the RSC for review and forwarded on to the RSO for a site visit and the findings will be reported at the next scheduled meeting of the RSC. In some instances, the request may be urgent and the Committee RSC Chairman is authorized to administratively approve these requests.
### Appendix 6

**Radiation Safety Committee Forms**

<table>
<thead>
<tr>
<th>Form 6.1</th>
<th>RSC/RDRC Protocol Review Sheet</th>
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<tr>
<td>Form 6.2</td>
<td>Human Research Committee Proposed Risk Statements</td>
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<tr>
<td>Form 6.3</td>
<td>Human Use Application</td>
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<tr>
<td>Form 6.4</td>
<td>Human Use Amendment</td>
</tr>
<tr>
<td>Form 6.5</td>
<td>Non-Human Use Application</td>
</tr>
<tr>
<td>Form 6.6</td>
<td>Non-Human Use Amendment</td>
</tr>
<tr>
<td>Form 6.7</td>
<td>Form B’ Request to Use Radionuclides in the MGH Animal Facility</td>
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</tbody>
</table>
Form 6.1
RSC/RDRC Pre-Review Sheet

Protocol #: ____________________________

P.I.: ________________________________

1. **Type of Ionizing Radiation:**
   - X-Rays/CT
   - Fluoroscopy
   - DEXA
   - SPECT
   - PET Radiopharmaceutical
   - Radiopharmaceutical Therapy
   - Radiation Therapy

   **Non-Ionizing Radiation:**
   - MRI
   - Ultrasound
   - Laser

2. **Review by:**
   - RSC
   - RDRC
   - LSC

3. **Total # of Subjects:** ____________ (> 30 and RDRC, initiate special report to FDA)

4. **Healthy Volunteers:** ____________ (Yes/ No)

5. **Total Exposure > 0.5 rem:** _____ (Yes/No)

   *(If Yes, add - Investigators in projects involving significant radiation exposure (e.g. greater than 0.5 rem which is 10% of Maximum Recommended Annual Dose for Research Subjects) should question candidates in detail regarding their previous radiation exposure as volunteers. In the opinion of the MGH Radiation Safety Committee, persons who have received a prior cumulative exposure during the previous 12 months of 1-1/2 rem (30% of Maximum) should not be exposed further in a voluntary mode unconnected with their own medical care.)*

6. **Radioisotope Permit to be Amended:** (Initiate amendment procedure):

   P.I. ___________________________, Permit # ____________
Form 6.2
Human Research Committee Proposed Risk Statements

Ultrasound:

A standard clinical ultrasound will be performed. There are no known radiation risks associated with standard ultrasound procedures.

MRI:

MRIs use powerful magnets to make images. There are no known radiation risks associated with MRI. However, persons with metal implants, such as surgical clips, or pacemakers should not have an MRI. All credit cards and other items with magnetic strips should also be kept out of the MRI room. People who feel uncomfortable in confined spaces (claustrophobia) may feel uncomfortable in the narrow cylinder. The MRI makes loud banging noises as it takes images. Earplugs can be used to reduce the noises. The MRI can be stopped at any time at your request. If you are or suspect you are pregnant, you should not participate in this study.

MRI/MRS

The magnetic resonance spectroscopy techniques that we will use together with the MRI study have the potential during normal, routine use of localized mild warming of your skin and the underlying tissues. For your safety and comfort, the use of these methods are restricted to prevent any excessive local warming. You should immediately inform us if you experience discomfort due to warming and the procedure will be stopped.

High Level Radiation:  [If exposure > 300 mrem]

As a result of your participation in this study, you will be exposed to radiation from the ___________. The amount of radiation to which you will be exposed is ______ rem. A rem is a unit of measure of radiation dose. This amount of radiation is approximately equal to _____% of the amount of radiation to which a person who works with radiation can be exposed each year.

Since the effects of radiation can be cumulative, it is important to know of your past research related radiation exposure. If you have participated in other research studies in the past 12 months that have involved radiation exposure please inform the investigators or study staff. If it is determined that your prior radiation exposure exceeds our current guidelines, it is possible that you will not be allowed to participate in this study.

I have _____ have not _____ participated in research studies involving radiation exposure within the last 12 months.

Standard Paragraph

As a result of your participation in this study, you will be exposed to radiation from the ___________. The amount of radiation to which you will be exposed is _____ millirem (mrem). A millirem (mrem) is a unit of measure of radiation dose. This amount of radiation is equal to about _____% of the annual background radiation one is exposed to each year from the earth and the sky, and is the same amount of radiation to which you would be exposed if you had a ______________________ and did not participate in this study.
**DEXA Scans**

The amount of radiation exposure from the DEXA scan is less than 10% of the annual natural background radiation from the earth and sky. There are no known health risks associated with such a dose.

**Research Radiation Exposure to Subjects of Child-bearing Potential:**

Women of child-bearing potential: due to the possibility of harm to the fetus from the radioactive drugs used in this protocol you must not participate if you are pregnant. We will verify this fact in the following way. 1) If you are currently using an acceptable and effective form of birth control including abstinence and you believe that you are not pregnant, a urine pregnancy test will be performed. If the test is negative, we will proceed with the radiopharmaceutical administration. 2) If you are not currently using an acceptable and effective form of birth control including abstinence but you believe that you are not pregnant, then a serum pregnancy test will be performed. If the test is negative, we will proceed with the radiopharmaceutical administration. 3) If you are seeking to become pregnant or suspect that you may be pregnant you will not be enrolled in the study.
APPLICATION FOR PERMIT
TO USE RADIOACTIVE ISOTOPE UNDER THE BROAD LICENSE OF THE
MASSACHUSETTS GENERAL HOSPITAL

GENERAL INFORMATION

Applicant: ________________________  Dept: ___________________  Tel. No.: ____________
New Permit # ____________________

Authorized Users Under Permit: ______________________________________________________

(Training/Experience Forms must be attached to the application for all individuals to be listed on permit)

RADIOPHARMACEUTICALS. For all radiopharmaceutical research for human use, provide the
following information: package insert, investigational drug brochure or equivalent information on each
product.

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<tr>
<th>Isotope</th>
<th>Possession Limit</th>
<th>Chemical Form</th>
<th>Solid/Liquid/Gas</th>
<th>Administered Dose (mCi)</th>
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<td>a.</td>
<td>____ mCi</td>
<td>____________</td>
<td>_________</td>
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<tr>
<td>b.</td>
<td>____ mCi</td>
<td>____________</td>
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<tr>
<td>c.</td>
<td>____ mCi</td>
<td>____________</td>
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Use additional sheets if necessary

Please Check One

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<tr>
<th>FDA Approved For General Use</th>
<th>Investigational IND #</th>
<th>Investigational RDRC</th>
<th>Route of Administration</th>
<th>Number of Administrations</th>
<th>Manufacturer</th>
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<td>c.</td>
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1. Purpose for which radiopharmaceutical(s) will be used, please give details:
   a. ________________________________________________________________
   b. ________________________________________________________________

2. Will radiopharmaceutical(s) be prepared and dispensed by the MGH Nuclear Pharmacy:
   Yes____  No ____
a. If no, provide names and qualifications of persons compounding and dispensing radiopharmaceuticals. *(Training/Experience Forms must be attached)*

____________________________________________________________________________

____________________________________________________________________________

b. Provide a detailed description of location and facilities where radiopharmaceuticals will be prepared.

____________________________________________________________________________

____________________________________________________________________________

**EXPERIENCE WITH RADIOISOTOPES**

<table>
<thead>
<tr>
<th>Isotope</th>
<th>Maximum Amount</th>
<th>Institution</th>
<th>Date</th>
<th>Type of Use</th>
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Use additional sheets if necessary

1. **Radiation Detection Instruments**

<table>
<thead>
<tr>
<th>Type (Make/Model)</th>
<th>Radiation Detected</th>
<th>Sensitivity (mR/hr)</th>
<th>Last Date of Calibration</th>
<th>Serial #</th>
<th>Model #</th>
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2. **Hospital location of study:**

Building: ________________  Floor(s): ________________  Room #’s: ________________

Signature of Applicant  ____________________________  Date  ____________________________

Please return forms to:
Radiation Safety Committee
Bartlett Hall 500
FAX: 617-726-5123
Form 6.4
Human Use Amendment

MASSACHUSETTS GENERAL HOSPITAL
(Do Not Fill-In Above Dotted Line - Committee Use Only)

Approved ________ Not Approved ________

Signature, Chairman, Radiation Safety Committee Date

---------------------------------------------------------

AMENDMENT

HUMAN USE RADIOISOTOPE PERMIT
UNDER THE LICENSE OF THE
MASSACHUSETTS GENERAL HOSPITAL

Permit Holder: ______________ Dept. ______________ Tel. #_________ Permit #________

CHANGES IN RADIOISOTOPES:

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<tr>
<th>Isotope</th>
<th>Possession Limit</th>
<th>Chemical Form</th>
<th>Solid/Liquid/Gas</th>
<th>Administered Dose</th>
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<tbody>
<tr>
<td>a.</td>
<td>1234</td>
<td>567</td>
<td>Solid</td>
<td>89</td>
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<td>b.</td>
<td>456</td>
<td>78</td>
<td>Liquid</td>
<td>90</td>
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Use additional sheets if necessary

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<th>Investigational</th>
<th>Investigational</th>
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<tr>
<td>For General Use</td>
<td>(IND #)</td>
<td>(RDRC)</td>
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<td>a.</td>
<td>1234</td>
<td>567</td>
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<td>b.</td>
<td>456</td>
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</table>

Purpose for which radiopharmaceutical(s) will be used, please give details: (please provide package insert, investigational drug brochure or equivalent information):

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<td>a.</td>
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<td>b.</td>
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CHANGES IN HOSPITAL LOCATION OF STUDY:

ADD: Bldg. ______________________ Room #’s __________________________
DELETE Bldg. ______________________ Room #’s __________________________

Signature of Permit Holder Date

Return completed form to:
Radiation Safety Committee
Bartlett Hall 500, FAX: 617-726-5123
Form 6.5
Non-Human Use Application

MASSACHUSETTS GENERAL HOSPITAL
(Do Not Fill-In Above Dotted Line - Committee Use Only)

Approved ________ Not Approved ________

Signature, Chairman, Radiation Safety Committee Date

APPLICATION FOR PERMIT

TO USE RADIOACTIVE ISOTOPES UNDER THE BROAD LICENSE OF THE MASSACHUSETTS GENERAL HOSPITAL

NON-HUMAN USE

GENERAL INFORMATION

Applicant __________________________ Dept. ____________________ Tel. No. ____________________

New Permit #______________

Others Working on Project

TRAINING/EXPERIENCE FORMS MUST BE ATTACHED

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<td>c.</td>
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<td>d.</td>
<td>___________ mCi</td>
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<td>f.</td>
<td>___________ mCi</td>
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Purpose for which isotope(s) will be used, please give details:

____________________________________________________________________________________

____________________________________________________________________________________

Hospital location of study:

Building _____________ Floor(s) _________, Room #’s _________________________________

Signature of Applicant __________________________ Date ____________________________
EXPERIENCE WITH RADIOISOTOPES

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</table>

Use additional sheets if necessary

1. Provisions for storage and handling (containers, shields, remote handling devices, fume hoods, sink, etc.

2. Radiation Detection Instruments

<table>
<thead>
<tr>
<th>Type (Make/Model)</th>
<th>Radiation Detected</th>
<th>Sensitivity (mR/hr)</th>
<th>Last Date of Calibration</th>
<th>Serial #</th>
<th>Model #</th>
</tr>
</thead>
<tbody>
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</table>

3. If sealed sources are used, describe encapsulation and give supplier and model number:

4. Provisions for disposal of radioactivity (including animal remains and excretions)

INFORMATION FOR ANIMAL APPLICATIONS. (If the MGH Animal Facility will be used, complete HP Form B’ available at the Radiation Safety Office, ext. 6-5128.)

1. Animals to be used

2. Proposed dosage of isotope per kg _____ mCi/kg Total Dosage _____ mCi

3. Proposed chemical dosage per kg _____ mCi/kg

4. Provision for storage of animals

Please return forms to:
Radiation Safety Committee, Bartlett Hall 500
FAX: 617-726-5123
Form 6.6
Non-Human Use Amendment

MASSACHUSETTS GENERAL HOSPITAL
(Do Not Fill-In Above Dotted Line - Committee Use Only)

Approved ________ Not Approved ________

Signature, Chairman, Radiation Safety Committee Date

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AMENDMENT

NON-HUMAN USE RADIOISOTOPE PERMIT
UNDER THE LICENSE OF THE
MASSACHUSETTS GENERAL HOSPITAL

Permit Holder ________________Dept. ________________ Tel. #___________ Permit #___________

CHANGES IN RADIOISOTOPES:

<table>
<thead>
<tr>
<th>Isotope</th>
<th>Possession Limit</th>
<th>Chemical Form</th>
<th>Solid/Liquid/Gas</th>
<th>Please Circle</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>__________ mCi</td>
<td>__________</td>
<td>__________</td>
<td>adding/increasing</td>
</tr>
<tr>
<td>b.</td>
<td>__________ mCi</td>
<td>__________</td>
<td>__________</td>
<td>adding/increasing</td>
</tr>
</tbody>
</table>

Purpose for which isotope will be used, please give details:
____________________________________________________________________________________
____________________________________________________________________________________

CHANGES IN HOSPITAL LOCATION OF STUDY:

ADD: Bldg. ______________________ Room #’s ______________________
DELETE Bldg. ______________________ Room #’s ______________________

Signature of Permit Holder Date

Return completed form to:
Ronald J. Callahan, Ph.D., Chairman, Radiation Safety Committee
Bartlett Hall 500, FAX: 617-726-5123

Rev. 5/03
Form 6.7
Form B’ Request to Use Radionuclides in the MGH Animal Facility

Investigator’s Report

Name: __________________________ Date: __________________________
Department: __________________________ Radioisotope Permit #________________________
Laboratory Location: __________________________
Dates to use animal facility: __________________________ to __________________________
Animal Order Form # __________________________ Date of Order: __________________________

A. Methodology

Animal Species __________________________ mCi/animal __________________________
Number __________________________
Radionuclide __________________________ T 1/2 __________________________
Chemical form __________________________
Method of Administration __________________________

B. Physiology

Potential for Contamination: urine feces respiration

Other comments: __________________________

Health Physics Report

A. Precautions: __________________________

B. Special Instruction: __________________________

C. Cage Cleaning: Investigator until __________________________

Animal Farm

Radiation Safety Office
Animal Care Facility
HP Form B’, Rev. 12/97

______________________________ Health Physics Personnel