

**Danbury Hospital**  
The Community Health Center  
Danbury, CT 06810 Tel. 203-797-7000

MS-12  
K2

2 March 1984

Department of Laboratory Medicine



A World Health Organization  
Collaborating Center  
For Nuclear Medicine

Mr. Jack Davis  
US Nuclear Regulatory Commission Region 1  
631 Park Avenue  
King of Prussia, PA  
19406

Re: License # 06-08544-01  
Control # 02014

Dear Mr. Davis:

In response to our phone conversation of February 19, 1984, I wish to present the following data in support of our license renewal dated December, 1983.

1. Item 4 - Individual Users

Add: Herbert W. Mower, ScD. for 200 mCi of Cesium 137 encapsulated for use in a gamma survey instrument calibrator

2. Item 8 - Training and Experience

C.V. for Herbert W. Mower, ScD., is attached. In addition to the experience on the attached "Training and Experience", from July, 1979 until April, 1983 through the Ridings Radiation Oncology, Associates, I provided consultant radiation physics and radiation safety services to the Nuclear Medicine Departments of:

St. Francis Hospital, Cape Girardeau, MO  
Dunklin County Community Hospital, Kennett, MO  
Marian Memorial Hospital, Marian, IL  
Internal Medicine Group, Cape Girardeau, MO  
St. Anthony's Hospital, Alton, IL

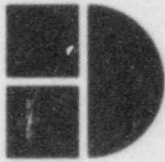
These services included NRC license preparation, amendments and renewals; in-service for technologists; supervision of radiation safety program; design of nuclear medicine departments; establishing criteria and procedures for receiving, handling, and disposing of radioactive materials.

In addition, since arriving at Danbury Hospital in April, 1983, under the direction of Nilo S. Herrera, M.D., I have been responsible for all the duties which pertain to the position of Radiation Safety Officer.

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Isotopes with which I have had experience in the area of radiation safety, protection, handling, and supervision include:

Gallium 67	Xenon 133	Radium 226
Technetium 99m	Thallium 201	Cesium 137
Molybdenum 99	Cobalt 57	Iridium 192
Iodine 125	Cobalt 60	Gold 196
Iodine 131	Phosphorus 32	Radon 222

3. ALARA Program

Appendix O procedures of Regulatory Guide 10.8, Revision 1 are followed.

4. Therapeutic Use of Radiopharmaceuticals

"Procedures for the Use of Therapeutic Quantities of Iodine-131 Capsules"

Replace step 5 with our current procedure of:

5) After capsule administration, monitor the exterior and interior of the container. If less than 0.02 mR/Hr, the container can be disposed of. If radiation levels are in excess of 0.02 mR/Hr, store the container in the designated radioactive waste storage area until the level falls below 0.02 mR/Hr.

5. In Vitro Procedures

The Laboratory procedures for handling radioisotopes used in "in Vitro" studies are attached. They include:

a) Laboratory Guide to Radiation Safety

b) Danbury Hospital - Special Chemistry

Laboratory: Radionuclide: Receiving and Disposed Directions.

If I can be of further assistance, please let me know.

Sincerely,

Herbert W. Mower, ScD.  
Radiation Physicist

(8-78)

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

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER  Herbert W Mower, ScD.	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE
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**3. CERTIFICATION**

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
American Board of Radiology	Therapeutic Radiological Physics	June, 1983

**4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES**

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Massachusetts Institute of Technology (M.I.T.) 62-68 New England Roentgen Ray Soc (66-72)	300 30	10 50
b. RADIATION PROTECTION	M.I.T. (66-72)	30	50
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	M.I.T. (61-72)	200	10
d. RADIATION BIOLOGY	M.I.T. (66-72) Columbia University Med School (73)	10 25	10 --
e. RADIOPHARMACEUTICAL CHEMISTRY	M.I.T. (66-72)	5	5

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Cs-137	400mCi	Southeast Hospital, Cape Girardeau, MO	5/78 - 4/83	Brachy Therapy
Radium	300 mCi	- same -	same	Brachy Therapy
Tc-99m	2000 mCi	- same -	same	Nuclear Medicine
Xe-133	300 mCi	- same -	same	Nuclear Medicine

CURRICULUM VITAE

NAME: Herbert William Mower

ADDRESS: 2 Coopers Lane  
New Milford, CT, 06776

PHONE: (Home): (203) 354-1155  
(Business): (203) 797-7529

SOCIAL SECURITY #: 021-32-8698

EDUCATION:

- 1961 --Somerville High School, Somerville, MA
- 1965 - S.B. (E.E.) Massachusetts Institute of Technology (MIT)  
Thesis: The Calibration of a Multi-electrode Magneto-hydrodynamic Flowmeter
- 1967 - S.M. (E.E.) MIT  
Thesis: Oxygen Effects on Electron Treatment of Skin Cancers
- 1968 - Electrical Engineer (E.E.) MIT
- 1972 - Sc.D. (E.E.) MIT  
Thesis: A Sensitive Calorimeter for the Dosimetry of Low Megavolt Electrons
- 1969 - Dosimetry Summer School, American Association of Physicist in Medicine (AAPM)
- 1973 - Radiation Biophysics (Radiation PM-22), Columbia University Medical School
- 1974 - Physics of Non-Ionizing Radiation, AAPM Summer School
- 1981 - Radiological Defense Officer Training School
- 1981 - Physics of Hyperthermia, AAPM Summer School
- 1982 - Advances in Radiation Therapy Treatment Planning, AAPM Summer School
- 1983 - Physics of Nuclear Medicine, AAPM Summer School

ELECTED TO MEMBERSHIP:

- 1965 - Associate Member - The Society of Sigma Xi
- 1969 - Full Member - American Association of Physicists in Medicine
- 1970 - Founding Member - New England Radiological Physicist Org.
- 1970 - Member - Society of Sigma Xi
- 1973 - Member - New England Society for Radiation Oncology
- 1978 - Active Member - American Society of Therapeutic Radiologists
- 1978 - Plenary Member - Health Physics Society

SERVICE TO PROFESSIONAL SOCIETIES:

- 1970-1976 - New England Radiological Physicists Organization
- 1972-1976 - Membership Committee (1974-1976 Chairman)
- 1975-1978 - AAPM, New England Chapter
- 1975-1978 - Program Committee
- 1976-1978 - Executive Committee

CERTIFICATION:

- 1981 - Healthcare Safety Professional, Executive Level
- 1983 - ABR Certification in  
Therapeutic Radiological Physics

EMPLOYMENT:

- 1983 - Radiation Physicist, Danbury Hospital, Danbury, CT 06810
- 1979-1983 - Medical Physics Consultant
- 1979-1983 - Clinical Physicist, Ridings Radiation Oncology Associates, Cape Girardeau, MO 63701
- 1979-1983 - Radiation Safety Officer, Southeast Hospital, Cape Girardeau, MO
- 1978-1979 - Clinical Physicist, Shoss Radiological Group, Radiation Therapy, Southeast Hospital, Cape Girardeau, MO 63701



1975-1978 Clinical Physicist, Division of PHysics, Department of Therapeutic Radiology, Tufts/New England Medical Center Hospital, 171 Harrison Ave., Boston, MA, 02111  
1975-1978 Instructor, Tufts University School of Medicine  
1972-1975 Staff Member, Office of Sponsored Programs, MIT, High Voltage Research Lab (HVRL), 155 Massachusetts Ave., Cambridge, MA, 02139  
1966-1972 Research Assistant, MIT HVRL  
1965-1966 Teaching Assistant, MIT E&M Lab., Electrical Engineering Department, MIT, Cambridge, MA  
1963-1965 Co-op Student, AVCO/Everett Research Laboratory, 2385 Revere Beach Parkway, Everett, MA

Professional activities and interests include:

Physical aspects and computerization of external beam and implant treatment planning  
Physical and clinical aspects of high energy photon and electron therapy  
Quality control  
Dosimetry  
Clinical safety  
Architectural design of radiation therapy treatment centers  
Calibration of therapy machines  
Training programs for residents, technologists, and radiation physicists  
Hyperthermia  
NRC and state license applications  
Diagnostic radiology and nuclear medicine quality control

Teaching experience

1965-1966 Teaching Assistant (E&M Lab) MIT  
1965-1966 Tutoring in Introductory Circuit Theory MIT  
1968-1969 Teaching Assistant in Physics of Diagnostic Radiology and Radioisotopes Courses, New England Roentgen Ray Society (NERRS)  
1970-1972 Laboratory Instructor in Physics of Diagnostic Radiology and Radioisotopes Courses, NERRS  
1970-1975 Yearly lectures on Physics of Diagnostic and Therapeutic Radiology, Lahey Clinic Foundation, Boston, MA  
1972-1974 Lecturer in Radiation Therapy (6.44 and 6.522), MIT  
1976-1978 Education Coordinator, Physics Division, NEMCH (Physics for Residents, Clinical Physics, Post Doctoral Training Program, Dental Rounds)

Supervised the following thesis:

1974 - Jay Allen Krone (S.B. @ MIT) - "Programmable Desk-Top Calculators in Radiotherapy Treatment Planning"

Papers, Presentations, and Exhibits

Wright, K.A.; R.J.R. Johnson, F.A. Salzman, J.G. Trump, and H.W. Mower, "Rotational Moving Strip Radiotherapy with Synchronous Renal and Liver Protection," AAPM Meeting, 1974  
Salzman, F.A.; D.H. Hegener, R.J.R. Johnson, H.W. Mower, and K.A. Wright, "Clinical Experience with Rotational Moving Strip 2 MV Radiotherapy with Synchronous Renal and Liver Protection," RSNA, 1974  
Mower, H.W.; R.L. Brotman, M.M. Castro, D.C. Clark, P.G. Lierhaus, J.E. Munzenrider, and J.B. Rene, "1000 Rad Whole Body Single Dose Therapy-" Scientific Exhibit, RSNA 1976 (Honorable Mention)

- Mower, H.W., "Technician Training Program in Physical Aspects of Radiation Therapy," 100 p., 1975, unpub.
- Brotman, R.J.; P. Grossman, and H.W. Mower, "Computer Applications in Breast Cancer Treatment," 5th Annual New England Bioengineering Conference, 1977
- Neurath, P.W.; and H.W. Mower, "Computer Assisted Decision Making," New England Society for Radiation Oncology, 1977
- Ucmakli, A.; H.W. Mower, and B. Emame, "Critical Analysis of Supervoltage Photon Modalities in the Treatment of Pituitary Neoplasms and Cranio-pharyngiomas," Int. J. of Rad. Onc.
- Brotman, R.L.; P. Grossman, H.W. Mower, and M. Slater, "User's Guide to the Tufts-New England Medical Center Department of Therapeutic Radiology Computer System," 66 p.
- Mower, H.W., "Radiation Physics," in Radiation-Drug Interactions in the Treatment of Cancer, ed. G.H. Sokol and R.P. Marcel, J. Wiley, New York, 1980
- Paradelo, J.C.; H.W. Mower, and A. Ucmakli, "The Effect of Radiotherapy Techniques on the Spinal Cord in Head and Neck Cancer Patients," Amer. Rad. Soc. Mtg (abs) 1978
- Paradelo, J.C.; A. Ucmakli, B. Schiller, E. Sternick, and H. Mower, "Mid-Sagittal Plane Dosimetry in Patients with Extensive Head and Neck Malignancy," Int. J. Rad. Onc. Biol, Phys, 7:115-120, 1982

LABORATORY GUIDE TO RADIATION SAFETY

The quantities of radioactive substances present in radioassay kits are small. Simple adherence to the basic rules of radiation safety should provide adequate protection. Refer to National Bureau of Standards "Handbook 92, Safe Handling of Radioactive Materials", issued 3-9-64 by Department of Documents, U.S. Government Printing Office, Washington, D.C. A summary of these rules is presented below.

GENERAL PROCEDURES:

1. Wear individual film badges issued monthly by Nuclear Medicine. Employee cumulative REM levels are posted in Nuclear Medicine. Maximum exposure per week should be less than 100 millirem, or less than 5 rem per year.
2. Avoid direct contact with radioactive materials.
  - a. No smoking, eating or drinking is allowed in area where radioisotopes are in use. Refrigerators used to store radioactive material are not to be used for food storage.
  - b. Never pipet by mouth.
  - c. A lab coat should be worn at all times to minimize contamination of personal apparel.
  - d. Gloves should be worn whenever high levels of radioactivity are handled or direct contamination of the hands is possible. It should be noted, however, that for the low levels of radioactivity contained in the average RIA kit and in consideration of the precise manipulative techniques employed in performing radioassays, wearing gloves may be more hazardous than protective because of decreased dexterity and the increased chance of spilling the tracer. Our RSO has exempted in-vitro radioassay technologists from being required to wear gloves; the choice to wear them or not remains with the technician.
  - e. Whether gloves are worn or not, hands should be washed thoroughly after working with radioactive materials and blood samples.
  - f. Work with volatile radioactive compounds or experimental procedures expected to generate radioactive fumes must be performed in a radioactive safety hood with necessary filtration and exhaust.

LABORATORY GUIDE TO RADIATION SAFETY (cont.)

- g. Chemical procedures with radioactive materials must be performed over absorbent paper or in trays. In addition, the transfer of radioactive materials from one laboratory to another should be done in trays or in other vessels.
  - h. Personnel tests (urinalysis, breath analysis, blood tests, etc) may be made when specified by the RSO.
  - i. In case of accidental ingestion of radioactive material, the supervisor and the RSO must be immediately notified. REMEMBER: PIPETTING BY MOUTH IS NOT PERMITTED!
  - j. Laboratory work surfaces and equipment should be monitored (by survey meter and wipe tests) weekly and after decontamination procedure in accordance with the prevailing regulations. (N.R.C., A.E.C., O.S.H.A., C.A.P.)
3. A laboratory that performs in-vitro radioassay procedures should be properly organized.
- a. All radiological work should be done in a designated area away from traffic where the danger of spillage and contamination is high.
  - b. Radioisotope laboratories must be locked when an authorized user is not present. Unsealed radioisotopes must be stored in a locked place accessible only to an authorized user.
  - c. Radioisotopes received in shipment must be opened in a properly equipped laboratory by authorized users only. (See directions for receiving and disposal of radionuclides posted in laboratory and in safety notebook).
  - d. Complete log of receipt and disposal of all radionuclides must be maintained by technologist using the material.
  - e. All radioactive substances should be clearly labeled by isotope and specific activity. Any volatile substance should be kept tightly sealed.



LABORATORY GUIDE TO RADIATION SAFETY (cont.)

f. Radioactive labels should be used on:

1. all glassware containing radioactive solution
2. all refrigerators and freezers used to store radioactive material
3. all laboratory equipment (example: centrifuges, automatic diluters, gamma counters) used in radioassays

Radioactive labels should be removed or blackened before disposing of a vessel or box that previously contained a radioactive substance.

- g. No radioactive material should be removed from the radioisotope laboratory unless contained in approved radioactive waste containers for disposal. (See disposal directions for radioactive material.)
4. Any spills of radioactive material should be taken care of immediately in accordance with established procedure.

- a. Directions for handling major spills or major contaminating accidents may be found in the radiation safety ~~notebook~~. The microcurie amounts used in in-vitro procedures do not constitute a major threat, but any spills must be handled correctly, completely and promptly to avoid radiation build-up and to avoid contaminating other areas and equipment.

If high levels of radioactivity are inadvertently delivered to Special Chemistry and a major spill does occur, immediately inform the supervisor and RSO. Do not attempt decontamination without specific instruction from the RSO. Isolate the area and declare off limits. Safety notebook contains additional information regarding major accidents; we will be concerned mainly with minor spills.

- b. To handle a minor spill, put on gloves (rubber or plastic). Contain the spill with paper towels or disposable sponges. Isolate the spill area and declare it off limits until decontamination has been accomplished.
- c. Estimate the type and amount of radioactive material involved and prepare for decontamination accordingly.
- d. Decontaminate the area using detergent soaked towels. Wipe the area dry. Repeat the process until monitoring by means of wipe tests reveals acceptable levels of contamination (no greater than 2 x background).

LABORATORY GUIDE TO RADIATION SAFETY (cont.)

- e. Record incident and decontamination procedure and results in decontamination log.
  - f. Dispose of materials used in decontamination in accordance with disposal guide lines mentioned below.
5. All radioactive materials must be disposed of in accordance with the prevailing regulations and guide lines of the agencies holding jurisdiction over the laboratory. (AED, NRC, OSHA, CAP)
- a. As a general rule, water soluble wastes may be disposed of into the sewer system at an acceptable\* limiting concentraion provided the total radioactive material disposal in a single year period does not exceed 1 curie. \*(A.E.C. Title 10. Rules and Regulations, 1955, CFR Part 20,303.  $125\text{I}$   $4 \times 10^{-5}$  uc/ml.)
  - b. "Liquid or solid items with a short half-life may be allowed to decay to acceptable radiation levels (equivalent to background on a survey meter) and then disposed of in a routine manner" (Quoted from Schwarz Mann interpretation of NBS Handbook 92 rules)
  - c. Disposal of radioactive material in excess of the maximum described above and/or in water insoluble form should be made by a licensed disposal service. Special receptacles and/or absorption material are available for these wastes at all times.

REFERENCE:

1. "Handbook 92, Safe Handling of Radioactive Materials" issued March 9, 1964. Department of Documents U.S. Government Printing Office, Washington, D.C.
2. "RIA Laboratory Guide to Radiation Safety" Schwarz Mann Radioassay Kit insert, 1976.
3. Danbury Hospital Radiation Safety Manual, prepared by B. Weinstein 4/4/75

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DANBURY HOSPITAL - SPECIAL CHEMISTRY LABORATORY  
RADIONUCLIDE: RECEIVING AND DISPOSAL DIRECTIONS

A. Receiving Incoming Shipments of Radionuclides:

PRINCIPLE:

Monitoring of all incoming shipments of radionuclides and keeping suitable records showing receipt of the shipment and its condition at the time of arrival are necessary to comply with the regulations appearing in the CODE OF FEDERAL REGULATIONS. (Title 10, Part 20, Section 20.205).

PROCEDURE:

Log in receipt of shipment of radionuclide as soon as practical but not longer than three hours after the package is received (when received during normal working hours, or 18 hours if received after working hours).

1. If quantity of radionuclide is sufficient, monitor the external surfaces of the package for radioactive contamination caused by leakage of the radioactive contents. After monitoring the package by using a Geiger-Muller survey meter, record the highest reading in the space marked "Survey (surface) \_\_\_\_\_ mR/hr." If radiation levels on external surface of the package are found to be in excess of 200 millirem per hour, or at three feet from the external surface of the package are in excess of 10 millirem per hour, notify the supervisor immediately.

Exempt from this regulation are packages, containing less than 10 millicuries of radioactive material consisting solely of H<sub>3</sub>, C<sup>14</sup>, S<sup>35</sup>, or I-<sup>125</sup>. If package is exempt, so indicate in space marked "exempt package."

2. Inspect the package for damage or apparent leakage on the outer packing container. If damage or leakage is evident:

- a) put on a pair of disposable gloves.
- b) carefully place the package on a paper-covered metal tray.
- c) contact the Supervisor for further instructions on monitoring with wipe tests and for alerting the manufacturer.

3. If visual inspection of the package is satisfactory:

- a) Remove the packing slip.
- b) Record receipt of package on appropriate "Radionuclide Receipt and Disposal Log."
- c) Unpack the shipment, being alert for evidence of breakage, leakage or incomplete shipment.
- d) If breakage or leakage is present:
  1. Put on disposable gloves
  2. Dispose of any liquid materials in the hot sink, flushing with copious amounts of water.  
Dispose of any broken glass or contaminated packing material into the solid waste container for commercial pick-up.

RADIONUCLIDE: RECEIVING AND DISPOSAL DIRECTIONS: (cont.)

3. Record breakage under "contents check".
  - e) Mark date of receipt on package and components.
  - f) Watch carefully for any new instructions or product enclosures; call them to the attention of the Supervisor.
  - g) Put the materials away according to storage conditions listed in the laboratory. If storage is not defined on laboratory list, follow recommendations of the manufacturer.
  - h) Sign and date the packing slip and leave it for the supervisor.

DISPOSAL OF RADIONUCLIDES:

PRINCIPLE:

Records must be maintained indicating radionuclide usage and disposal

NOTE: EVERY RADIOACTIVITY LABEL ON PACKAGES AND ON VIALS MUST BE REMOVED OR COMPLETELY BLACKED-OUT BEFORE DISPOSING OF ANY CONTAINER.

PROCEDURE:

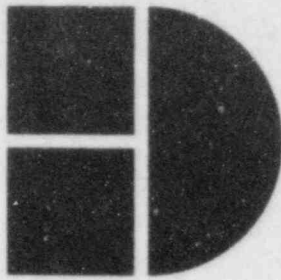
1. Record in isotope log book date of usage of all radionuclides. Record on your assay worksheet the log number of isotope.
2. If spillage of radionuclide occurs, record the incident in "Radionuclide Receipt and Disposal Log". Record method of decontamination and results of "swab tests" in "Decontamination Manual".
3. Record and initial final disposal of all radionuclide material.
4. Four methods to dispose of radionuclides:
  - a) Flush down designated sinks in special chemistry followed by copious amounts of water; maximum amount per day-100 uCi.
  - b) Commercial disposal service, category L, for absorbed liquids; volumes must be recorded.
  - c) Commercial disposal service, category W, for dry solid waste only.
  - d) Compact solid dry waste, date bag, transport to Nuclear Medicine for in-house decay.



RADIONUCLIDE: DISPOSAL OF RADIONUCLIDE: (cont.)

DISPOSAL INSTRUCTIONS

MATERIAL	METHOD
<p>Solid Waste:</p> <ul style="list-style-type: none"><li>- solid beads</li><li>- conical tubes with antibody complexes</li><li>- antibody coated tubes</li><li>- lyophilized tracer (unreconstituted)</li></ul>	<p>Category "W" = solid <u>DRY</u> waste. Let tubes remain in racks in hood cabinet until completely dried. Place dry tubes and beads in trash compacter bag. Turn trash compacter on to crush tubes. When trash bag is completely filled, remove it, tape it, transport it in radioactive push cart to the metal tray in Nuclear Medicine.</p> <p>Waste must be completely dried.</p>
<p>Fluid Waste:</p> <ul style="list-style-type: none"><li>- supernatant fluid</li><li>- charcoal slurry</li><li>- remaining tracer in isotope vials</li></ul> <p>MAXIMUM AMOUNT NOT TO EXCEED 100 uCi/day</p>	<p>Flush down designated sink with copious water. Soak tubes and vials in a bucket with hot soapy water. Wear gloves. Rinse tubes and place them in a plastic bag; dispose of them in wash room in "glass only" container.</p> <p><u>REMOVE OR BLACKOUT ALL ISOTOPE STICKERS ON VIAL AND CONTAINERS</u></p>
<p>Autoclaved waste:</p> <ul style="list-style-type: none"><li>- hepatitis tubes, beads, trays</li><li>- pipet tips</li><li>- antibody reagents</li><li>- all control &amp; standard sera</li><li>- patient samples</li><li>- urine samples</li><li>- CEA trays</li></ul>	<p>Soak hepatitis beads in chlorox overnight then dispose of in autoclave bag. Place into autoclave bag all discarded serum samples, serum products, and equipment in contact with serum. <u>AUTOClave</u>.</p>



**Danbury Hospital** the community health center  
Danbury, Connecticut 06810 Telephone 203-797-7000

September 10, 1984

Nuclear Materials Section A  
U.S. Nuclear Regulatory Commission, Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Gentlemen:

Attached please find our request to amend our NRC license  
06-08544-01. The amendment is to allow us to store our cesium-137  
brachytherapy sources in our new radiation therapy department.

Also enclosed is the appropriate fee.

If I can be of any further assistance in this matter, please  
feel free to call me.

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By	Oct 3 + Brown
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Action Compl.	
Enclosures	

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Check No. #440-10 +
Amount \$
Date 9/28/84
Received By Brown

Sincerely,

*Herbert W. Mower*  
Herbert W. Mower, Sc.D.  
Radiation Physicist

U.S. N.R.C.  
LIC. FEE (NIGHT BRANCH)

84 SEP 28 P5:02

RECEIVED

112068
\$ 80 +
Amendment
10/19/84
Brown

"OFFICIAL RECORD COPY"

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21 SEP 1984

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## FACILITIES AND EQUIPMENT

Attached is a drawing of the new cesium storage area (cesium room). The drawing scale is  $1/4" = 1'$ . The following are controlled areas:

- Treatment Planning
- Physicist's Office
- Mold Room
- Staff Toilet
- Staff Corridor

The remaining corridor is a non-controlled corridor connecting two buildings. It goes west and south.

The cesium room is locked with keys issued to the Radiation Therapist and the Radiation Physicist. The door between the corridor and the staff corridor is for use by radiation therapy staff.

The cesium room is used to store our cesium - 137 brachytherapy sources and our cesium - 37 Tech-ops 773-02 sealed source. The brachytherapy sources are stored in one of two commercial safes:

- 3M model 6624
- Nuclear Associates model 67-742

The Nuclear Associates model 67-742 is item "2" in the cesium room.

Both the 3M model 6624 and the Tech-Ops model 773-02 are located within a 2" lead block area (item "1"). This area is also equipped with an "L" shield and serves as the preparation area for brachytherapy sources.

Item 11

September, 1984

