MS-16
P-7

Massachusetts
Eye and Ear
Infirmary

Department of Safety, Security, and Parking

February 25, 1988

Thomas K. Thompson
Nuclear Materials Safety Section B
Division of Radiation and Safeguards

Dear Mr. Thompson:

We are enclosing answers to your inquiries (mail control #10809, dated January 20, 1988). We hope the information will assist your staff in their ongoing analysis of our Radiation Byproduct Material Program.

Sincerely,

John P. McGillivray
Director
Safety, Security and Parking

243 Charles Street
Boston, Massachusetts 02114
617-573-3121

20 pp.

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Febru..y 19, 1988

United States Nuclear Regulatory Commission
Region 1
Nuclear Materials Safety Section B
Division of Radiation Safety and Safeguards
631 Park Avenue
King of Prussia, Pennsylvania 19406

Reference: License No. 20-01212-10
Docket No. 030-01833
Control No. 108090

In response to your recent letter concerning the above referenced License No. we have completed the following.

Question 1

Radiation Safety Officer - Duties and Responsibilities

1. The Radiation Protection Program provides consistent and clear responsibility to ensure the radiation safety program is performed with approved procedures to meet all regulatory requirements for the daily operation of the Infirmary's by product material program. John P. McGillivray, the new Radiation Protection Officer, will rely on technical support from Robert V. Johnson, Director of Radiological Services, Harvard University. Mr. Johnson will provide the Infirmary with support, when needed, in the following areas:

   A. Performing periodic surveys of laboratories for radiation.

   B. Perform annual checks of survey instruments and other safety equipment.

   C. Training of personnel who work in or frequent areas where by product material is used or stored.

   D. Technical support in the investigation of overexposures, accidents, spills, losses, thefts, unauthorized receipts, uses, transfers, disposals, misadministration and other deviations from approved radiation safety practice.

2. Mr. John McGillivray, Director of Safety, Security and Parking will be appointed as the Radiation Safety Officer who will be responsible for implementing the Radiation Safety Program. Mr. McGillivray will ensure that radiation safety activities are being performed in accordance with approved procedures and regulatory requirements as outlined 10 CFR 35.21 b which will include

a) Immediate investigation of accidents, spills, losses or thefts, unauthorized uses transfers, disposals, misadministration or other deviations from accepted and approved radiation safety practice.

b) Complete documentation of all in section A

c) Establish policies and procedures for authorizing:
- o the purchase of by product material
- o receiving and opening packages of by product material
- o storing of by product material
- o keeping an up to date inventory and record of by product material.

3. Policy and Procedures will be developed and reviewed as appropriate for the

A) Safe use of by product material

B) Taking any/all emergency action if any policy and procedures is violated.

C) Managing all records of surveys as conducted by Harvard University in the Safety Office

D) Manage all monitoring/exposure records from film badges, etc. in the Safety Offices

E) Ensure the by products are disposed in accordance with accepted standards and regulations.

F) Require personnel who work with or in areas to be trained in the use and safety of radio isotopes.

G) Maintain a copy of all commission regulations and correspondence, amendments, and license in the Safety Office.

Mr. McGillivray will request an annual audit of the program from Mr. Johnson who together will present an overview to administration of the total program.

4. Mr. McGillivray, in consultation with Mr. Johnson will review each personnel exposure investigational levels, that when exceeded, will initiate an investigation by the Radiation Safety Office to determine the exact cause of exposure and take immediate actions to include the reduction of the probability of recurrence.

Question 2

Please find a copy of Curriculum Vitae for John P. McGillivray, which is attached.

Question 3

Radiation Protection Training Program for Users

A. Educational Contents of Formal Instruction for Acceptance.

1. Basic information which is included in technicians course to include properties and units of radiation, interaction with matter, dosimetry, handling procedures, contamination subsequent and decontamination procedures, regulations, labelling, animal use requirements, waste disposal, responsibilities of personnel, principles of radiation detection and instrumentation, protection principles, and hazards associated with the isotopes in use. The material includes sources of information and NRC publications as /10-CFR-19 and 20 and Form #3. A quiz is given to each participant and graded with 70% passing. See Appendix A

2. The training for investigators must include transportation regulations, advanced instrumentation, external and internal dosimetry, shielding, statistics, measurements, licensing procedures and requirements, responsibilities, and public health considerations in addition to the material presented to the technicians.

3. Time is also given to answer questions pertaining to individual problems or associated materials.

B. Available to all faculty members, their technicians and graduate students will be informal (non-credit) lectures and demonstrations covering the fundamentals of radiation safety. The series of lectures will be given by Mr. Johnson and associates. Its contemplated contents are given in the Appendix I of this letter.

C. The informal (non-credit) training program will consist of lectures, movies, hand out materials, and practical work for those using radioactive materials as indicated in the Appendix 1. Those wishing authorization for independent work who have not had any formal training for experience must attend the training program. The training program will vary in length and detail, which will depend on the radioisotopes to be used. The training will be provided by Mr. Johnson or another authorized person. The formal course for training is of one semester duration.

As an adjunct to the formal and informal course, Mr. Johnson will provide a short training course of all users of isotopes once a year on the MEEI premises.

Question 4

Survey and calculation records have been requested to be forwarded for permanent recording at the Radiation Safety Office.

Question 5 and 6

I Calibration of Harvard University Radiation Safety Instruments include the following:

Laboratory equipment used for contamination or bioassay measurements is check daily with a reference source when in use.

Survey Instruments are checked monthly with cross comparison to a calibrated instrument or a small check source. The instruments are calibrated with a standard source of 60 Co, radium or 137 Cs annually. The instruments used for the surveys in the laboratories by the safety staff are calibrated monthly prior to each survey where exact dose measurements are required. They are also spot-checked prior to every field survey.

The calibration is carried out in a special facility by the radiation protection staff. The standards available for instrumentation calibration are:

II Beta Standards for GM counter

Beta reference sources from New England Nuclear Co. including 14C, 60 Co, 204 Tl, 210 Bi, 234 Pa.

III Gamma Standards for Scintillation Counter

Gamma reference sources to include 137 Cs, 60 Co, 57 Co, and 22 Na from Nenuc

IV Gamma standards for Iodine Surveys and Thyroid Scans 125 I and 131 I simulated standards, including 125 I NES, 211 S and 131 I NES 214.

V Standards for Liquid Scintillation Counter

Standard Source Set with Packard Tri-Carb including 14 C, 3 H, and 36 Cl.

R-Meter for X and Gamma Fields

Victoreen Instrument Co. Model 570 Condenser R-Meter with chambers from 0.025 R to 100 R including low and medium energy chambers (5).

[illegible] Ci, 15 mCi, 100 [illegible] and [illegible]

137 Cs 3 mCi, 25 mCi.

VII Additional Equipment Available through Harvard University

A. For Contamination

GM Contamination
1.4 mg/cm2 end window GM tube detects alpha particles above 1.9 MeV beta, gamma.

Picker Clinicscaler #600-150 with precision discriminator.

B. Low Level GM Survey Instruments

Picker Labmonitor 600-081
End window Geiger tube 1.4 mg/cm2 for alpha, beta, gamma
Ranges [illegible] 200-30,000 [illegible]
Contains battery and [illegible] [illegible] field.

C. [illegible] Survey Instrument

[illegible] Instruments Inc.
Model 420 Fast Neutron [illegible] tissue equivalent
Detector proton recoil proportional counter
Ranges 0-25, 0-250, 0-2500 mrem/hr.

D. Tritium Monitor

Texas Nuclear Instrument Co.
Model 9160 "smiffer" tritium monitor
Range 100 uc T/m3 air to 100,000 uc T/m3 air

E. Air Sampling Equipment
The Staplex Company
Model Tf-1a Hi-Vol Air Sampler
Flow rate 20 CFM with TFA#41 filter of 4 inches diameter.

F. 7 Eberline E-120 GM survey meters with end window probe and audible speaker 0-20 mr/hr

1 Victoreen Thyac III with thin end window probe and audible speaker 0-20 mr/hr

2 Victoreen 440 survey meters -- ionization chamber--0-300 mr/hr

1 Eberline Model Pac 4G with alpha probe, Model AC-2[illegible]

[illegible] Proportional [illegible] counter

1 Eberline Atomic Scintillation Detector Model BIC using ZnS phosphor alpha detector

2 Victoreen Radector Survey Instruments, Model AGB500D-P, 0-500 R/hr.

1 Victoreen Radectron III Survey Instrument, 0-100,000 R/hr

1 Jordan Rad-Gun 1-10,000 R/hr, Model AGB-10KG-SR

1 Victoreen 440 RF, 0-300 mr/hr-Ionization Chamber

VIII The Mass Eye and Ear Infirmary survey meters are calibrated on an annual basis with the measurements taken at a minimum of 2 points on each scale. These calibrations are carried out at the Harvard University Health Services calibration facility. The calibration procedure is as follows:

1. Instrument checked for contamination or detector.

Mechanical zero is checked and adjusted if necessary (meter turned off).

3. Batteries checked and replaced or charged, if necessary.

4. Response checked for isotropism (side or end window) and direction of calibration specified, where appropriate.

5. Reproducibility checked by repeating measurements three times. Both source and detector are moved and repositioned each time.

Calibrations made of low dose levels with both sources and detector suspended on ring stands which are moved as far as possible from surrounding walls, floor, and other scattering surfaces. Distances are measured from center of source to center of detector with tape measure.

Calibrations of high dose levels made with source positioned on specially constructed table. The detector is positioned on supports at pre-measured distances.

A variety of sources are available including 226 Ra (standardized by comparison to NBS standards), sources of 0.177 mCi and 50 mCi, 137 Cs, 241 Am.

[illegible]

$\frac{r\ A}{r2}$

The calibration curve is plotted and the intermediate points taken from this curve.

Question 7

Monthly surveys, including wipe tests, film badge monitoring and meter checks, of areas where isotopes are handled are conducted by the Harvard Radiation Protection Office. For bio-assays the following procedures are employed as discussed below.

The bioassays for tritium are carried out by the Harvard University Radiation Safety Program for those handling 10 mCi or more as organic compounds by the collection of urine samples for analysis. The samples are collected within 7 days each time any individual handles this level of activity. The criteria for action levels specify that an investigation is carried out [illegible] exceed 10% of [illegible] urine samples are also collected [illegible] There has been an indication of an accident or spill involving levels of contamination found to be [illegible]. Measurements for thyroid uptake are carried out for all persons handling 0.1 mCi or more rather than the 10 mCi as indicated by your letter. The thyroid measurement is much more sensitive than any urinalysis and is designed to meet the restrictive uptake limits for radioiodine. Action levels are instituted if 25% of the maximum permissible levels are found, a further review by the Isotope Committee if 50% of the permissible levels are attained and notification to the Division of Compliance if the level exceeds 100% including withdrawal from further use pending an investigation.

For work involving the iodination of cellular proteins with I-125, thyroid uptake measurements will be made on all personnel involved within two weeks of each such use.

Question 8

Radiation Protection Programs

I Introduction

The MEEI is under the supervision of Robert Johnson, Harvard University Radiation Protection Program, with the surveys conducted monthly for dose levels, contamination, personal interview regarding handling and disposal, posting of signs, instrument calibration, air sampling when required, disposal supervision, and investigation of

removable contamination is acceptable and must be decontaminated immediately by the licensee upon notification of its presence. The survey records are maintained indefinitely by MEEI and are required to be kept by the user since the prior NRC inspection. Safety instructions are outlined in the Massachusetts Eye and Ear Infirmary Safety Manual and the posted instructions are distributed to all users.

II All incoming shipments of radioactive materials will be processed at the receiving area, the packages and contents checked for leaks, other damage, and the materials logged in with a cross check made as to possession limits. Potential leaks will be checked for with a survey meter and wipes will be made of the package and inner container. A check with the Safety Office will also be made before orders are placed to see that possession limits are not exceeded.

All incoming packages will be carefully inspected for damages and leaks. Packages will then be put into a safe locked area and will be by a designated [illegible] to ensure that the contents are complete. The packing slip is checked to see if it corresponds to the package. A wipe test will be made of the package and inner vial to detect any contamination.

Users are instructed not to place any order by telephone without specific clearance through the Radiation Safety Office. Normally, no deliveries are received or accepted after hours. The buildings are kept locked after hours with a guard on duty. In the event of any unusual occurrence, the guard has access to the reception areas and would store materials there. In emergencies, telephone numbers of the members of the Radiation Safety Office are available to the guard who would immediately notify one of the members. Incoming packages are kept in a secured area, inspected as indicated above, and the investigator notified immediately to pick up the package. Provisions are made to store gamma emitters behind adequate shielding for the short interim that the packages are in the receiving area.

III The routine surveys as indicated by the attached check list consist of discussions with personnel, survey meter dose rates, wipe tests, posting of signs, labels, and notices, instrument calibrations, hood flow measurements, security, waste disposal review as to procedures and records, film badges, review of opening procedures, inspection for violation of rules, and review of emergency procedures. Surveys are conducted monthly. The areas surveyed include working area, storage and disposal areas, receipt and

decontaminated. Follow up survey of these areas will be made. Records of surveys are maintained by the safety consultant, with permanent records also maintained by the Safety Office.

IV Use of Radioactive Materials in Animals

Experimental animals administered licensed materials or their products shall not be used for human consumption.

Cages housing animals injected with radioisotopes should be labelled as to isotope, quantity of material injected per animal, date of injection, and user. These cages should be segregated from those housing other animals.

Animal excreta may be disposed via the sewerage if the calculated activity does not exceed NRC limitations and not mixed with sawdust or wood shavings otherwise, the excreta may be placed in plastic bags and disposed through via barrel shipments.

Adequate ventilation must be provided in rooms where animals are kept after an injection with radioactive materials that may become volatilized and dispersed into the room.

Animal handlers must be indoctrinated by the responsible investigator as the dose levels, time limitations in the area, and the handling requirements of the animals and excreta.

Animal handlers will not open any cages of animals containing radioactive materials other that C-14 or H-3 without specific approval from the Radiation Safety Officer or the Safety consultant.

All animals waste will be considered to be radioactive and all such waste not disposed through normal waste methods.

All carcasses will be placed in plastic bags, labeled with the isotope, user, date and quantity, and stored in a freezer until released for subsequent disposal dosal by the radiation safety consultant. This disposal will depend upon the material and the quantity as evaluated by the consultant.

The subsequent cleaning of the cages will be carried out under the supervision of the Radiation Safety Office. Individuals will be monitored where required, and plastic gloves will be worn by all personnel involved in the decontamination.

[illegible] using a [illegible] equipped with a [illegible] filter.

The effluent released to the environment will be monitored by Environmental Health at Harvard who routinely monitors approximately 60 iodination hoods and is familiar with the monitoring techniques. In addition, the personnel performing the iodinations will report for periodic thyroid measurements within two weeks of the experiment.

VI Emergency Instructions in the Event of the Release of Radioactivity

A. Objectives of Remedial Action

In the event of an accident involving the release of significant quantities of radioactive material, the objectives of all remedial action are to:

1. Minimize the amount of radioactive material entering the body, by ingestion, inhalation, or through any wounds.

2. Prevent the spread of contamination from the area of the accident.

3. Remove radioactive contamination [illegible] under qualified supervision. Inexperienced personnel should not attempt decontamination.

B. Procedures for Dealing With Minor Spills and Contamination

Most accidents will involve only minor quantities of radioactivity (i.e. in the microcurie level)

1. Drop absorbent paper or cloth on spill to limit spread of contamination.

2. Place contaminated cleaning materials into plastic bags or other closed containers. Seal and label.

3. Mark area of spill as "contaminated" as soon as possible, if immediate decontamination is not instituted.

A wet spill shall not be allowed to dry and become powdery if significant amounts of radioactivity are involved. This might produce serious air contamination.

4. Notify the Radiation Safety Officer of accident and remedial measures being taken. (573-3123 and/or 495-2061).

1. Start approved [illegible] procedures as soon as possible.

C. If the body is suspected of being contaminated:

1. Scan with alpha and beta gamma survey meters to determine contaminated areas of the body.

2. Do not immediately attempt decontamination if cuts, abrasions or open wounds are observed.

3. If cuts, abrasions or open wounds are contaminated, dry-clean the area with suction apparatus and swabs. (Wet cleaning might increase absorption)

4. If the skin is contaminated in the area of cuts, abrasions and open wounds, use wet swabs in a direction away from the cut, abrasion or open wound.

5. Care must be taken not to spread activity over the body or into the blood stream.

Question 9

License 20-03814-80 reads, Under Conditions A. License material shall be used only at the Massachusetts General Hospital, Fruit Street and the Burn Institute at the Shriners Hospital for Cripple Children, 41-45 Blossom Street, Boston, Ma. and the McLean Hospital, Alcohol and Drug Abuse Research Center, 115 Mill Street, Belmont, Ma. Condition B, notwithstanding condition 10 A., license material maybe administered diagnostic and therapuetic purposes at the Massachsuetts Eye and Ear Infirmary, 243 Charles Street, Boston, Ma., in accordance with letter date July 13, 1983 submitted by the Massachusetts Generes. Hospital.

Question 10

THe following records are enclosed for those individuals who should have full authorization on our license to use isotopes that they are experienced as reflected in the attached documents.

Peter John Anderson, PH.D
Ross Edwards, PH.D
Dorothy J. Roof, PH.D
John K. Wolfe, PH.D.
Thaddeus P. Dryja, PH.D.
Joyce Rapaport, B.S.
Emil Mitchel Opremcak, M.D.
Susan Schmidt, PH.D.
Valerie White, M.D.
Mark Latina, M.D.
Stan Schein, PH.D.
Peter Wells, PH.D (I-125 Should be limited to Sealed Sources less than 2 mCi)

[illegible]
[illegible]
[illegible]
Valerie Grondin
David Yandell

Please delete from license the following:

Dr. Daniel Albert
Dr. Dudek

who are currently employed by the Massachsuetts Eye and Ear Infirmary but are not actively using isotopes as of the date of this letter. We are enclosing their training and experience letters for your records should they reactivate.

APPENDIX A

HARVARD UNIVERSITY
DEPA ENT OF ENVIRONMENTAL HEALTH AND FETY
.. OXFORD STREET, CAMBRIDGE, MA 02138

M E M O R A N D U M

TO: Users of radioisotopes at Harvard University
FROM: Environmental Health & Safety, Harvard University
SUBJECT: INSTRUCTION IN THE SAFE USE OF RADIOISOTOPES FOR PERSONNEL IN THE HARVARD RADIATION PROGRAM TO COMMENCE OCTOBER 7, 1986.

This fall, the required lectures in the program of Instruction in the Safe Use of Radioactive Materials will be given Tuesday, October 7, and Thursday, October 9, and Tuesday, October 14 from 1:30 pm to 3:30 pm in Amphitheator "D" at the Harvard Medical School. The remaining lectures will be given at Bldg. D-1, room 437 from 10:00 am to 12:00 noon.

This program is designed for research investigators, graduate students, and technicians at Harvard University and the associated teaching hospitals who need authorization to work independently with radioisotopes. The major objective is to impart the principles and practice of radiation safety as it concerns the use of radioactive materials. Additionally the course will present elementary information on radioactivity, measurements, standardization, monitoring techniques, mathematics and calculations basic to the use and measurement of radioactivity, and on biological effects of radiation. The emphasis of the course is on radiation safety rather than isotopes techniques. Training in these areas is demanded by the Nuclear Regulatory Commission before it will grant a specific license for the use of radioactive isotopes.

The program is in two(2) parts:

1. Elementary introductory material designed for both technicians and investigators. This will be given in the first 3 sessions(Oct. 7,9,14)
2. More advanced material designed for investigators only. This program of study may be completed in one of three ways:

*a. Study in accordance with a fixed schedule, covering lectures, reading assignments, problem assignments, and a 3 hour final examination. These lectures will be given on Tuesday and Thursday mornings between 10:00 am and 12 noon in Bldg. D1, Rm. 437.

b. Study in accordance with a self-paced schedule, except for required attendance at the first 3 sessions and an instrumentation laboratory. Three problem sets and 3 one-hour exams. (Exam may be taken 1 week after submittal of problem set).

c. Independent study, except for required attendance at the first 3 sesssions, and an instrumentation laboratory. Participants electing this program will have to submit the same problem set and will take the same final 3-hour examination as in*a.

Acknowledgemnt of completion: A letter acknowledging satisfactory completion of the course will be sent to participants who pass the examination requirements and attend the four required sessions.

Registration Fee: A $40.00 registration fee will be charged to those taking the complete program. Please make check payable to Harvard University.

Text: The entire content of the course is given in the text, "Radiation Protection, A Guide for Scientists and Physicians", 2nd edition, J. Shapiro. The text is available at the Medical Area Coop for $30.00.

J. Shapiro, Ph.D.
Radiation Protection Officer

NOTE: Those who have attended the Summer, 1986 course do not have to attend the Fall Course. However, attendance is mandatory for anyone not having attended the indoctrination courses previously.

9/9/86

STUDY PROGRAM IN THE SAFE USE OF RADIOISOTOPES IN RESEARCH

Sponsored by Environmental Health and Safety, Harvard University

Text: Radiation Protection, A guide for Scientists and Physicians, Second Edition, J. Shapiro

DATE	TUESDAY	DATE	THURSDAY
Oct. 7	Required Lect. - Principles of protection. Pp. 1-64, Prob. Set I 1,2,3,5,6,8,9 **See below	Oct. 9	Required Lect. Practice of radiation protection. Pp. 260-309, Prob. Set I 23,24,25 **See below
Oct.14	Required Lect. - Emergency procedures and demonstrations of monitoring techniques and examinations. **See below	Oct. 16	Lect. - Beta dose calculations. Pp. 59-64, 110-120, Prob. Set II 11,12,13,16
Oct. 21	Lect. - Gamma dose calculations Pp. 120-143. Prob. Set II -17,19	Oct. 23	Lect. - Use of specific isotopes, calculations of limits, Pp. 143-163 175-178
Oct. 28	Lect. - Radiation counting and standardization Pp. 189-220. Film: Practical procedures of measurement - Prob. Set III, 10,20,21,22	Oct. 30	Lect. - Dose measurements: Pp. 220-252. Film: Roentgen
Nov. 4	Lect. - Standards, Public Health Aspects. Pp. 324-365 - Calculation of limits.	Nov. 5	Required instrumentation laboratory Pulse height analyzers; standardization, and calibration - Science Center NOTE: THIS IS A WEDNESDAY
Nov. 11	HOLIDAY	Nov. 13	Problem discussion
Nov. 18	Final exam for all except self-paced.		

Place: **The first 3 sessions will be given at Amphitheater "D", Bldg. D. Harvard Medical School from 1:30 to 3:30 pm. The remaining lectures will be given at Bldg. D-1, room 437 from 10:00 am to 12:00 pm.

Examinations: Self-paced participants may take exam any Friday one week after submittal of associated problem set.

Attendance: Required at sessions on October 7, 9, and 16, attendance by investigators taking complete course is also required at an instrumentation laboratory covering pulse height analyzers, standardization, and calibration to be held on November 6. Problems sets are to be handed in during laboratory.

FALL 1986

REGISTRATION FORM

STUDY PROGRAM IN THE SAFE USE OF RADIOISOTOPES IN RESEARCH

NAME: _____
(FIRST) (MIDDLE) (LAST)

DEPT: _____
(INVESTIGATOR)

POSITION: _____

ADDRESS: _____ Tel. No. _____
(OFFICE)

Underline the session in which you are interested:

Sessions 1,2, and 3 are required for both technicians and investigators.

Complete program, including laboratories and examination

Independent study, required sessions, one final examination

Self-paced, three examinations

RETURN THIS FORM TO: Environmental Health & Safety
Harvard University
46 Oxford Street
Cambridge, MA 02138

Attn: Mr. Robert U. Johnson

APPENDIX ~~Control No. 0000~~

RADIATION PROTECTION OFFICE

SURVEY CHECK LIST

MEASUREMENTS

....Meter check for contamination of surfaces and personnel.

....Wipe tests of all suspected areas of contamination including door handles, floor, telephones, sink faucets.

....Air samples where required.

INSPECTION

....AEC form 3 posted.

....Institutional regulations posted.

....Opening procedures posted.

....Proper signs (radiation area, radioactive material).

....Storage area controlled and posted.

....Hood in operation and flow rate of _____.

....Proper labelling of sources, waste, solutions, etc.

....Sink disposal records posted and up to date.

....Film badge worn by personnel.

....Current records of receipt, waste disposal, use and inventory.

MONITORING INSTRUMENTATION

....Available

....Performance check.

REVIEW AND EXPLANATION OF HANDLING PROCEDURES

....Utilization of proper receiving and opening procedures.

...."Washing up" and monitoring of hands routinely performed.

....Personnel monitoring devices worn (review both whole body and hands).

....No pipetting by mouth.

....Review of emergency procedures, including emergency telephone numbers.

....Protective clothing utilized, including gloves, coats.

Date_____ Licensee_____ Location_____

Signed_____

Fig. 1. Radiation Survey Check List Used by the Harvard Radiation Protection Office.

CURRICULUM VITAE
HEALTH CARE SAFETY AND SECURITY

John P. McGillivray
Director, Safety, Security and Parking
Massachusetts Eye and Ear Infirmary

1977-1980	Safety and Security Officer, Carney Hospital, Boston, MA.
1978	Emergency Medical Technician Program, Labouré College, Boston, MA.
1980	B.S. C.J. Northeastern University, Boston, MA.
1981-1983	Senior Supervisor, Safety and Security, New England Baptist Hospital, Boston, MA.
1981-1983	Training Supervisor, Safety and Security, New England Baptist Hospital, Boston, MA.
1982	Emergency Medical Technician Refresher Program, Boston City Hospital, Boston, MA.
1983-1987	Director of Protective Services, St. Margaret's Hospital, Boston, MA.
1983-1987	Appointed Chairperson, Safety Committee
1983-1987	Appointed Chairperson, Disaster Committee
1983-1987	Appointed Safety Officer
1983-1987	Safety Instructor, Laboratory Safety, Trainex Series
1983-1987	Employee Safety Instructor, Topics, Health Care Safety, Fire Protection, Incident Reports, Hazardous Waste Disposal, Electrical Safety
1984-1987	MA. Right to Know Law 105 CMR 670.00 Instructor and Implementor of New Regulation for Hazardous substances in the workplace.
1985	Boston Fire Department, Laboratory Safety, NFPA 704 Labeling Seminar, Boston, MA.
1985	Life Safety Consultant, Nazareth Child Center, Jamaica Plain, MA.
1985	M.B.A. Anna Maria College, Paxton, MA.

1985	Member Caritas Christi Safety Education Committee, evaluating joint training and inservice requirements among six hospitals owned by one holding company.
1986	Co-Chairperson, Public Safety Committee, Dorchester Task Force, a local community task force overseeing police and court workings in Boston area.
1987-Present	Director, Safety, Security and Parking, Massachusetts Eye and Ear Infirmary, Boston, MA.
1987	Safety Officer, Massachusetts Eye and Ear Infirmary
1987-Present	Appointed Chairperson, Safety Committee, Massachusetts Eye and Ear Infirmary
1987-Present	Appointed Chairperson, Incident Review Committee, Massachusetts Eye and Ear Infirmary.
1987	Industrial Hygiene (with practicum), Harvard University School of Public Health, Boston, MA.
1987	Safe use of Radio Isotopes in Research Harvard University. University Health Services. A seven week program that included principles and practices of radiation protection, radio activity measurement standardization, maintaining techniques and instruments, mathematics and calculations basic to the use and measurements of radio activity and the biological effects of radiation.
1987	Member Harvard Medical School Subcommittee on Hospital Safety.

Membership:

- National Society of Safety and Security Directors, Boston Chapter
- National Fire Protection Association