

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Materials Branch, Directorate of Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20, and the license fee provisions of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 16 and the appropriate fee enclosed. (See Note in Instruction Sheet).

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital person, etc. Include ZIP Code and telephone number.)		(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a) Include ZIP Code.)	
Veterans Administration Medical Center 200 Springs Road Bedford, MA 01730		Same	
2. DEPARTMENT TO USE BYPRODUCT MATERIAL		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)	
Research and Development		20-10184-01	
4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.)		5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)	
Ira Sherwin, M.D.		Fred A. Rundlett, M.D.	
6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)		(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of source and maximum activity per source.)	
L-Leucine(4,5-3H) L-Proline(2,3-3H) D-Deoxyglucose(1-14C)		3H Leucine 5mCi 3H Proline 5mCi 14C Deoxy-D-glucose 1mCi	
7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container, and/or device in which the source will be stored and/or used.)			
To be used in animal neurophysiology as anatomical and metabolic tracers. These are acute or semi-acute studies			

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REG1 LIC30
20-10184-01
PDR

TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	Veterans Administration	1 year	Yes No	Yes <u>No</u>
b. Radioactivity measurement standardization and monitoring techniques and instruments	Veterans Administration	1 year	Yes No	Yes <u>No</u>
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation	Veterans Administration	1 year	Yes No	Yes <u>No</u>

9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
		none		

10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm ²)	USE (Monitoring, surveying, measuring)
Scintillation Counter ISOCAP 300	1	beta			Measuring
Survey Meter	1	beta, alpha, gamma			Surveying

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

Nuclear-Chicago sealed standard 3H and 14C for scintillation counting. Survey Meter with built-in source, calibrated by the manufacturer.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

Film badges by United States Testing Co., Richland, Washington

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No see NRC-313M

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source. see NRC-313M

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved. Disposal through contract with Interex Co., 66 Woerd Avenue, Waltham, Mass.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

License Fee Category \$ _____

Fee Enclosed \$ _____

Date _____

Bedford V.A. Medical Center

Applicant's name in item 4

By: [Signature]

Fred A. Rundlett, M.D.

Radiation Protection Officer

Title of certifying official

WARNING.—18 U. S. C., Section 1001; Act of June 25, 1948; 62 Stat. 749, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

Key to Wipe-Test Map

Building 18 GRECC Research Laboratories

		<u>Room</u>
A.	Sink	216
B.	Bench top	216
C.	Refrigerator	216
D.	Sink	213
E.	Bench top	213
F.	Scintillation Counter	213
G.	Corner hood	207
H.	Bench top	207
I.	Sink	207
J.	Scintillation Counter	219
K.	Bench	219

Animal Research Facility, Building 17

L.	Sink (animal surgery)	17
M.	Disposal can	17
N.	Freezer (animal)	17A

Building 17 RESEARCH & DEVELOPMENT

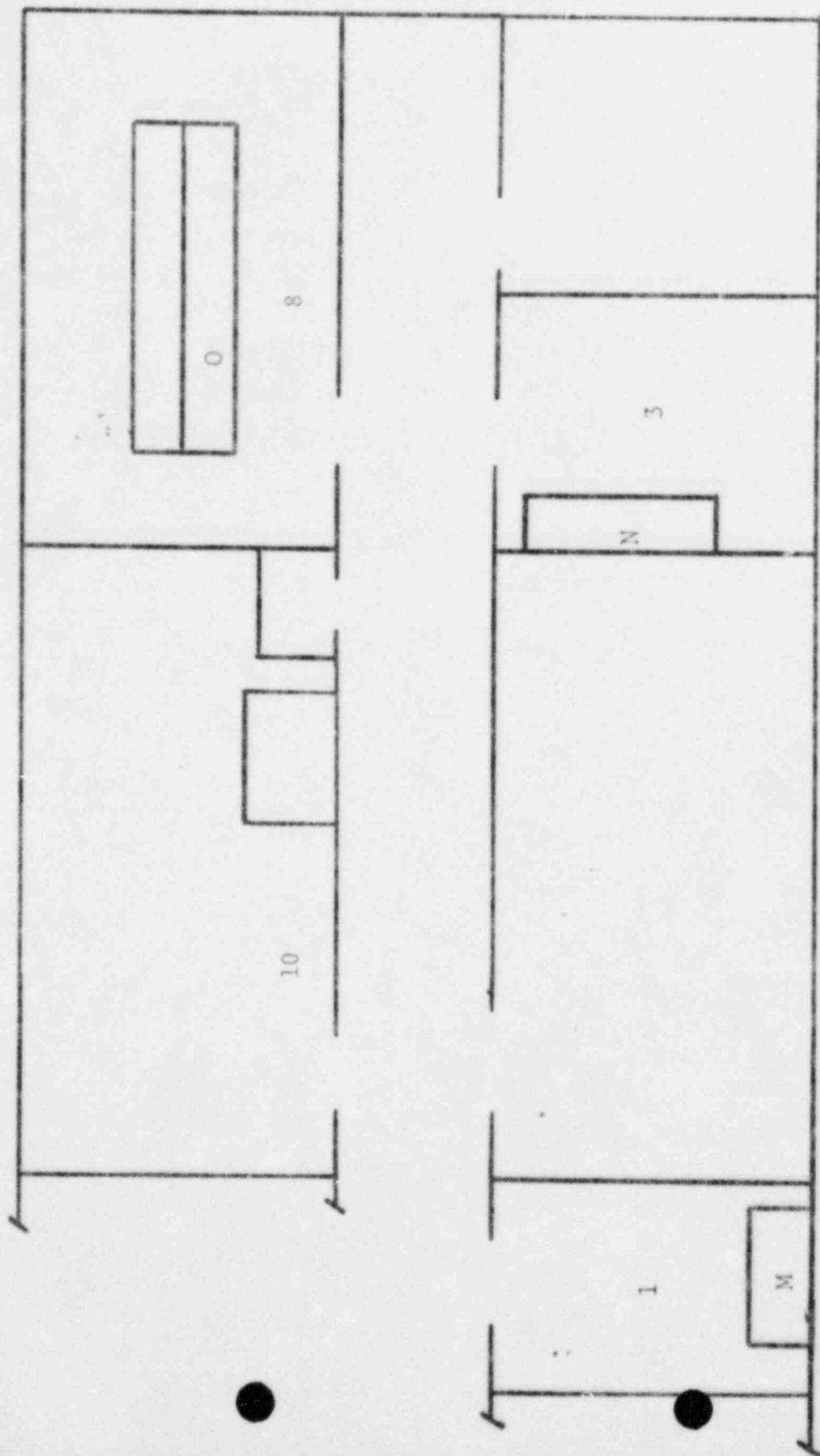
O.	Scintillation Counter	1
P.	Refrigerator	3
Q.	Bench top	8
R.	Sink	104
S.	Hood	104
T.	Bench	104
U.	Refrigerator	104

Entry to Bldg. 17

V.	INTEREX disposal drum
W.	Random wipe-test
X.	Blank (filter paper)

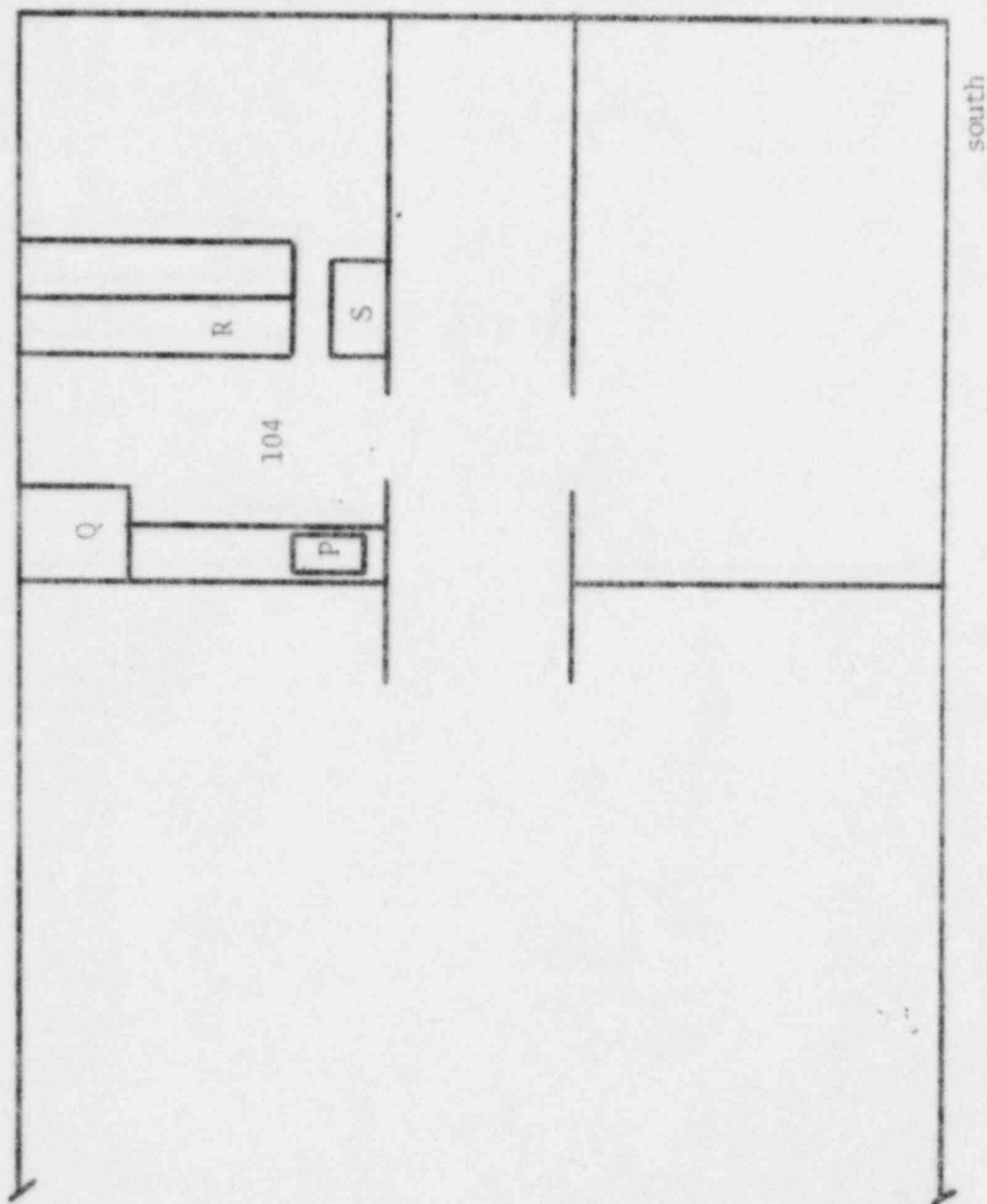
Item 11. and 17.
Attachments
March 30, 1979

Item 11. and 17.
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March 30, 1979

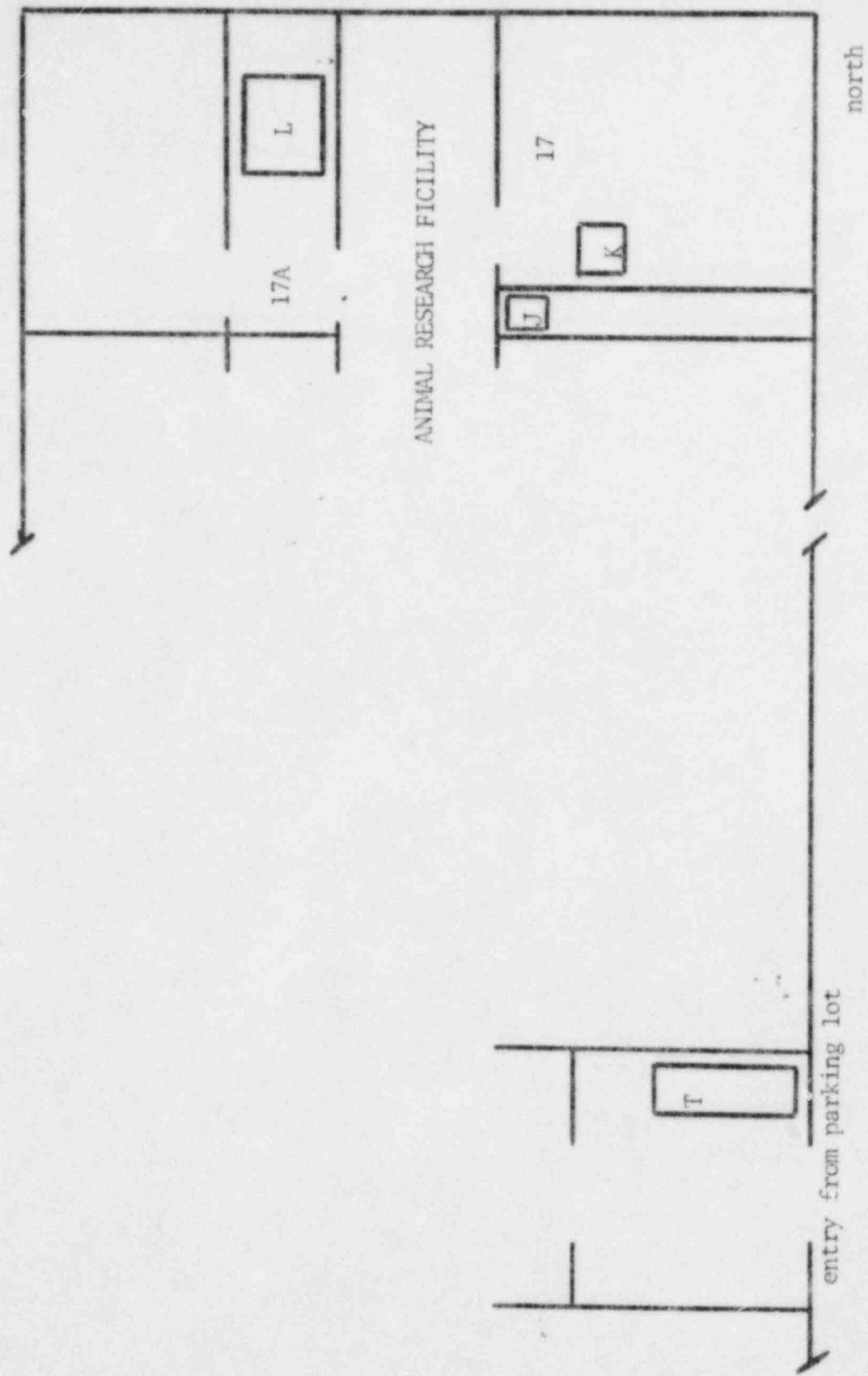


BUILDING 17 (south) first floor

Item 11. and 17.
Attachments
March 30, 1979

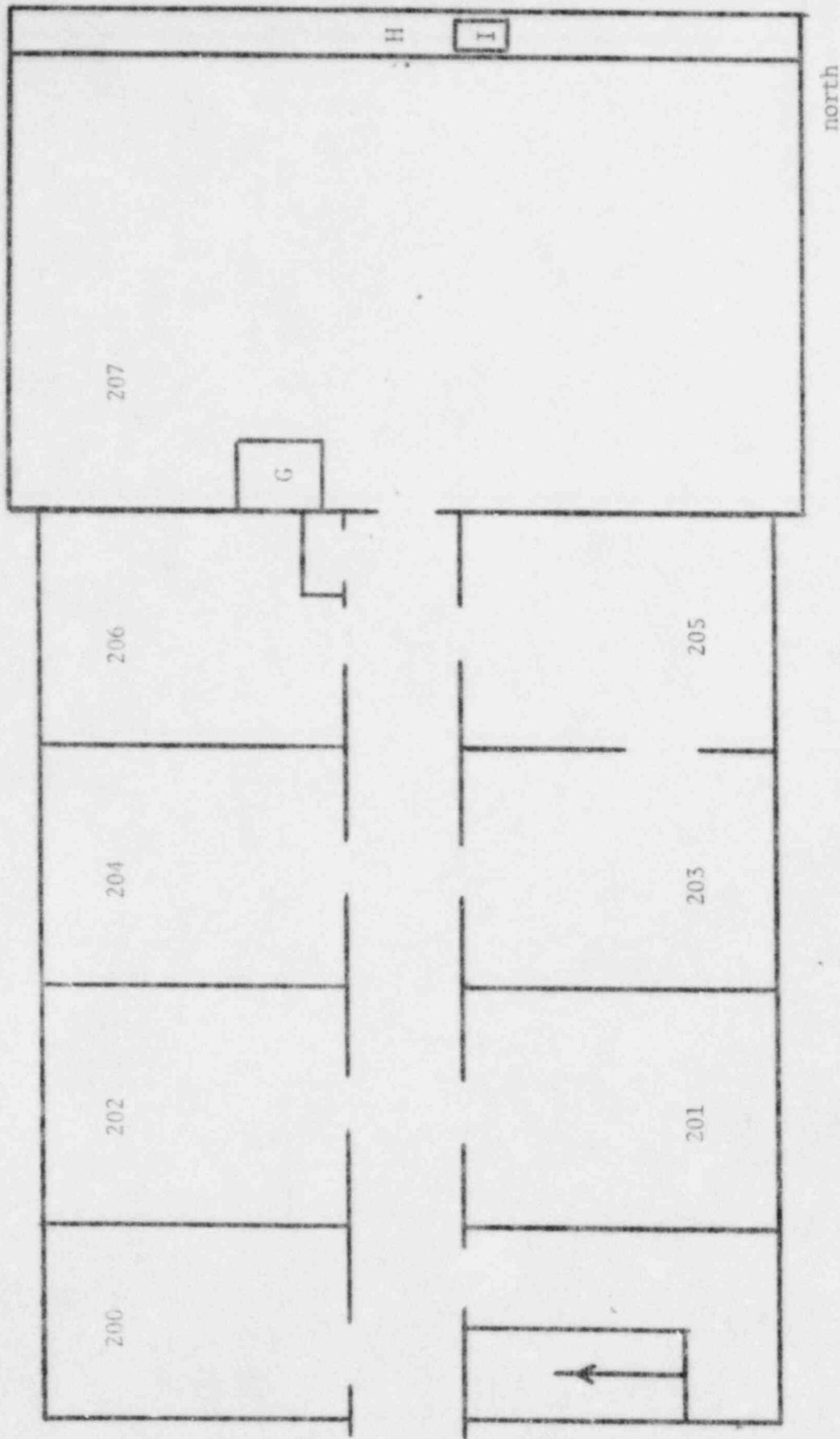


BUILDING 17 (second floor)



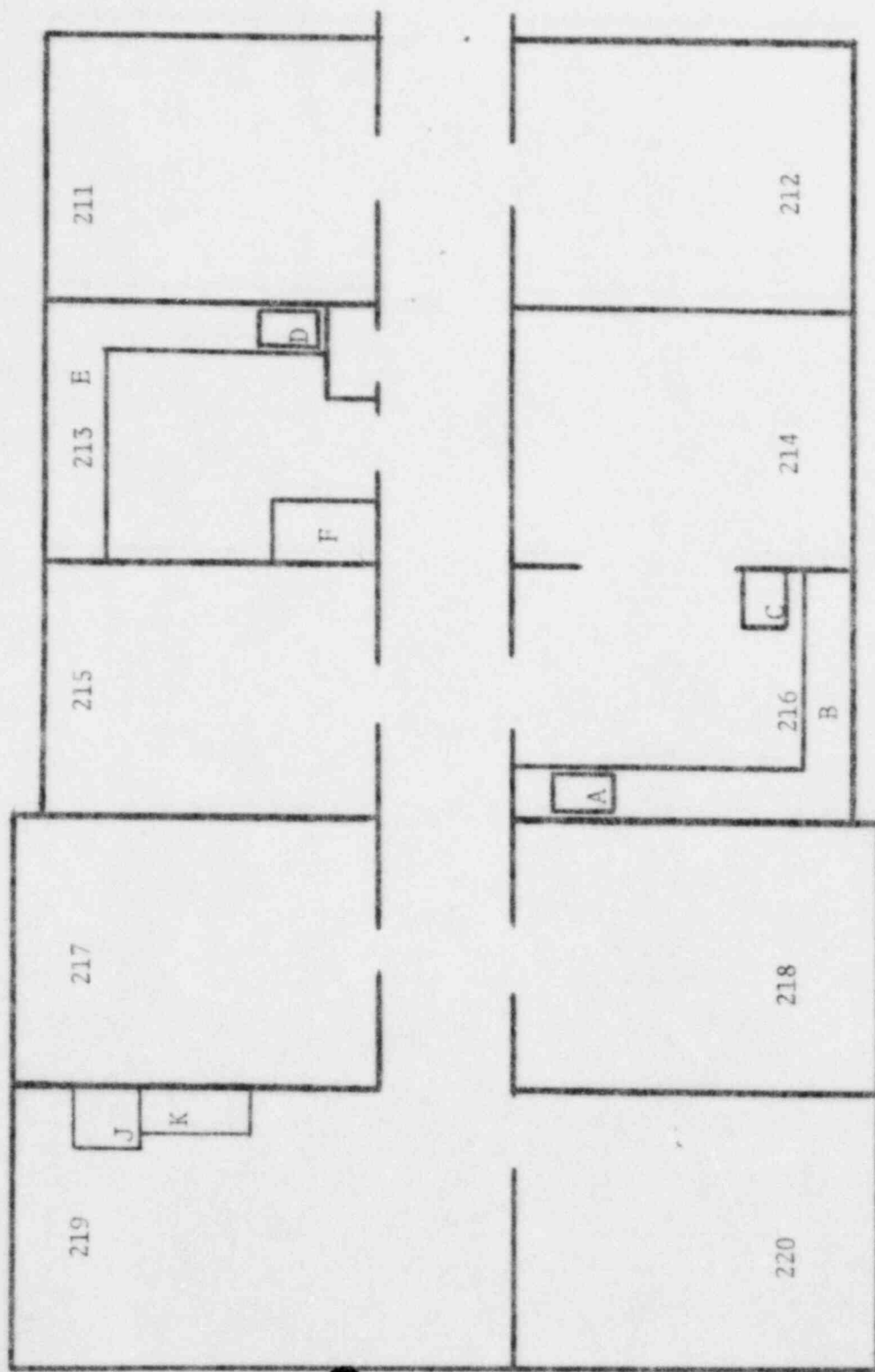
BUILDING 17 (first floor)

Item 11. and 17.
Attachments
March 30, 1979



(Building 18" (second floor) continued)

Item 11. and 17.
Attachments
March 30, 1979



BUILDING 18 (second floor)

Item 11. and 17.
Attachments
March 30, 1979

UNITED STATES GOVERNMENT

Memorandum

TO : All Investigators (Research & GRECC)
THRU : ACOS/Research & Development *JS*
FROM : David I. Kurtz, Ph.D.

DATE: January 11, 1977
151/DIK/bad

SUBJECT: Isotope Shipments, Wipe Tests, and Control of Stock-Pile

A record of our radioisotope resources will be maintained in the following fashion: My office will review all 2237's against current holdings before orders are processed. When received, the types and quantities of isotope will be logged. This will be accomplished before the isotope is delivered to the investigator whenever possible. In order to facilitate this process and up-date our plans, I request that:

(1) Radioisotopes ordered out-of non-VA resources be reported to me as described above for station orders.

(2) A plan from each investigator of his laboratory, showing isotope usage areas be submitted. My office will conduct monthly wipe-tests based on a new map formed from these plans.

(3) Each investigator keep an account of isotope usage. I will circulate quarterly forms for reporting expended materials. This information will serve to update stock-piles and to estimate disposal reports.

I hope that this plan will give us maximum control over isotope storage with the minimum burden on the investigators.

Thank you,

David I. Kurtz
DAVID I. KURTZ, Ph.D.

Item 13. Attachment
March 30, 1979



TUBE HOLDER CONTAMINATION CHECK FOR AUTOLOGIC

POLICY:

Monthly count of all tube holders to check for radioactive contamination of wells will be performed.

PROCEDURE:

(All wells should be empty).

1. Preset time to 60 seconds.
2. Set Auto Stop for 01.
3. Press Auto, then Index once.
4. Review printout for any high counts i.e. appreciably higher than average daily background count.
5. If a contamination well is suspected clean with 2% Isoclean & distilled water.
6. Recheck wells after cleaning and record decontamination in spill log.

99337

Item 17. Attachments
March 30, 1979

WIPE TEST PROCEDUREPOLICY:

Wipe tests must be performed monthly to insure that radioactive contamination has not occurred in those areas where isotopes are being stored and used.

The designated areas are as follows:

- Area 1 - Room 155 - Bench near Gamma Counter
- Area 2 - Room 155 - Bench labelled radioactive
- Area 3 - Room 155 - Sink labelled radioactive
- Area 4 - Radioisotopic refrigerator (inside lower door)
- Area 5 - Blank (background)

PROCEDURE:

Each area is rubbed with an appropriate absorbent material (millipore filter, Iso-wipe, etc.) that has been wet with 70% ethanol. The representative area must be no less than one square foot of each area. The absorbent material is then counted in the Gamma Counter for one minute, the gain, window & threshold setting being set for the isotope in question. The total counts observed for each representative area should not exceed a limit of five times the background count. If this limit is exceeded in any area, immediate decontamination must be initiated (see decontamination procedure). All wipe tests must be recorded in the appropriate log.

*Reviewed
8-15-78
BAZard*

Item 17. Attachments
March 30, 1979

CLINICAL LABORATORY

WIPE TEST** LOG

YEAR _____

CPM _____

Month	Day	Area * 1	Area * 2	Area * 3	Area * 4	Area * 5	Tech.
January							
February							
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							
** Millipore filter rubbed over a square foot area that has been wet with 70% ethanol.							
* Area 1 Room 155 - Bench near Gamma Counter							
Area 2 Room 155 - Bench Labelled Radioactive							
Area 3 Room 155 - Sink Labelled Radioactive							
Area 4 Radioisotope refrigerator							
Area 5 Blank Filter (Background)							

Item 17. Attachments
March 30, 1979

CLINICAL LABORATORY

DISPOSAL OF RADIOACTIVE WASTE MATERIAL

POLICY:

Radioactive waste disposal is to be initiated the first Friday of every month and recorded.

PROCEDURE:

1. Remove plastic bag containing radioactive waste from container labeled as such.
2. Double bag and secure top with twist ties.
3. Hand carry waste to radioactive disposal bin located in basement of Research Service in Building 17.
4. Dispose in bin and record the activity of the disposed waste in appropriate log.

Reviewed
5-18-8
BAZ

CLINICAL LABORATORY

YEAR

[illegible]

Item 18. Attachments
March 30, 1979

VETERANS ADMINISTRATION HOSPITAL

BEDFORD, MASSACHUSETTS

April 15, 1977

RESEARCH SERVICE MEMORANDUM NO. 77-2

151

SUBJECT: Care & Use of Primates in Research

I. PURPOSE

To insure that all persons engaged in animal research are familiar with the procedures involved in the purchase, care and use of primates.

II. POLICY

As part of the V.A.H. Institutional research program, primates are used to study those higher cortical functions which may have relevance for diseases of man.

To insure the well-being of the animal, animal caretakers, investigators and all who might come in contact with the animals, the procedure listed below will be followed:

III. PROCEDURE

A. PRIMATE FACILITY

- (1) The Animal Research Facility (ARF) at the Bedford V.A. Hospital is capable of housing 12 Rhesus monkeys on a chronic basis.
- (2) In addition, there is a room with cage facilities for the quarantine of newly arriving animals.
- (3) Only Authorized Personnel (involved investigators, animal caretakers and the veterinarian consultant) will be permitted to enter the facility.

B. PURCHASE OF ANIMALS

- (1) Monkeys will be purchased from Hazelton Prime-lab, Farmingdale, New Jersey. This vendor is fully authorized to conduct primate sales and shipping according to federal regulations.
- (2) This company will coordinate shipping time with the ARF supervisor, in advance.

C. TRANSPORTATION AND IDENTIFICATION

- (1) Animals will arrive at Logan International Airport by air-transport and will be subsequently transported by a V.A. driver or by the Air Transport Co. to the Bedford V.A. Hospital.
- (2) The monkeys will be delivered directly to the Animal Research Facility in Building #17. Animals will be received by one of the animal caretakers.
- (3) Delivery documents will be hand carried by ARF personnel directly to the V.A. receiving warehouse.
- (4) Newly arriving animals will be transferred to quarantine facility after having been weighed and given identification numbers and cage tags.
 - (a) The weight and identification numbers will be recorded in the animal record book.
 - (b) All files will be maintained according to the guidelines set forth in Guide for the Care and Use of Laboratory Animals, DHEW Publication No. (NIH) 73-23.

D. QUARANTINE

- (1) The monkeys will be in quarantine for six weeks.
- (2) During this time, each animal will be tested for T.B.
- (3) Their stools will be tested for ova and parasites.

- (4) They will receive a physical examination in order to ascertain their general health. These examinations will be carried out by the responsible investigator and/or veterinarian and the results recorded and filed.
- (5) All direct testing and examination will be conducted after sedation by Ketamine (Vetalar).

E. ANIMAL HOUSING

- (1) The monkeys will be transferred to regular housing facility after the six-week quarantine period.
- (2) The animal housing facility will maintain adequate heat control, air flow and lighting.
- (3) Animals will be housed one per cage. Cages are constructed from stainless steel with the following dimensions: 22" wide, 30" high and 24" deep.

F. ANIMAL FEEDING

- (1) Each cage has a facility for fastening water bottle and food container.
- (2) Each water bottle as well as spigot will be cleaned everyday with appropriate detergent.
- (3) Each animal will receive 30 food pellets (Purina Monkey Chow) twice a day and one apple a day.
- (4) Monkey chow will be used within the time limit stated on the package in order to insure that the nutrient supplements have not lost strength.
- (5) Food receptacle will be washed and steam sanitized on a two-week schedule.
- (6) Each cage will be pad-locked as a safety precaution.

G. SANITATION

- (1) Excreta will be removed from each cage daily along with food wastes, bedding and other debris.

- (2) Wastes will be collected and sealed in plastic bags and placed in covered plastic drums for subsequent disposal by incineration.
- (3) Non-radioactive carcasses will be disposed of similarly.
- (4) Each cage and its components will be steam cleaned thoroughly twice a week; the pans underlying each cage will be cleaned everyday.
- (5) The walls and floor of the monkey room will be washed down everyday.
- (6) The ceiling will be cleaned once a week or more frequently if needed.

H. EXPERIMENTATION AND RADIOISOTOPES

- (1) Those animals which will receive radioisotopes will be housed in separate groups of cages.
- (2) Each cage housing such an animal will have a radioactive isotope identification tag.
- (3) Excreta and debris from these cages will be collected separately in plastic containers and will be stored in radioisotope disposal special drums.
- (4) The amount of isotope (^3H -proline and ^3H -leucine) that will be used in each animal will not exceed more than 60-80 microcuries.
- (5) A record of isotope usage will be maintained by the investigator.
- (6) Carcasses of such experimental animals will be stored in plastic containers in a separate freezer marked with "Radio-Active" I.D. Tag and will be disposed in special steel drums which will be shipped to the Interex Company in New York for final disposal.

I. ANIMAL CARETAKER

- (1) The animal caretaker staff consists of two individuals that provide 7 day per week coverage of the facilities.

- (2) Each animal caretaker has received adequate training in taking care of primates at New England Regional Primate Center.
- (3) Protective gloves, surgical masks and laboratory coats or uniforms will be worn when working with the monkeys.
- (4) Each of the caretakers receives a tuberculin test or chest x-ray examination twice a year and will receive tetanus inoculations and booster injections at prescribed intervals. Each animal caretaker will wear a radiation detection film badge.

J. VETERINARY CONSULTATION

- (1) Dr. William Webster, Director of the Animal Care Facilities at the University of Massachusetts School of Medicine, is currently serving as a consultant to the Animal Research Facilities at the Bedford V.A. Hospital.
- (2) He will visit the facility every three months in order to check the operation of the facility and to provide proper guidelines for the management.

IV. REFERENCES

- A. Protocol for Nonhuman Primates
Dr. William S. Webster
Chairman, Department of Animal Medicine
University of Massachusetts Medical Center
Worcester, MA
- B. Guide for the Care and Use of Laboratory Animals
DHEW Publication No. (NIH) 73-23.

V. RESCISSION

Research Service Bulletin dated December 9, 1976
(no subject)

ML10

Item 22. Attachments
March 30, 1979

"OFFICIAL RECORD COPY"

VI. REVIEW DATE

Review of this publication is due on September 15, 1978.



IRA SHERWIN, M.D.
ACOS/Research & Development

- DIST: A. Biological Life Sciences Research:
 (1) Principal Investigators
 (2) Technicians
 B. Animal Caretakers
 C. Consultant Veterinarian

Information Copy:

Supply, 134
Supply, 134C
Supply, 134D

Dr Kurtz

VETERANS ADMINISTRATION HOSPITAL

BEDFORD, MASSACHUSETTS

April 15, 1977

RESEARCH SERVICE MEMORANDUM 77-1

151

SUBJECT: Care & Use of Rodents in Research

I. PURPOSE

To insure that all persons engaged in animal research are familiar with the procedures involved in the purchase, care and use of rodents.

II. POLICY

As part of the V.A.H. Institutional research program, rodents are used to study those biological functions which may have relevance for diseases of man.

To insure the well-being of the animals, animal caretakers, investigators and all who might come in contact with the animals, the procedure listed below will be followed:

III. PROCEDURE

A. RODENT FACILITIES

- (1) The rodent section of the Animal Research Facility (ARF) at the Bedford V.A. Hospital is capable of housing a total of approximately 6,000 mice or a total of approximately 1,200 rats or proportionate mixtures of the two in 4 separate rodent rooms. Normally, there will be 1 of these rooms for housing rats, and the others for housing mice.
- (2) In addition, there is a separate room which can be used for quarantine of newly arriving animals.
- (3) Only Authorized Personnel (involved investigators, animal caretakers and the veterinarian consultant) will be permitted to enter the facility.

Item 22. Attachments
March 30, 1979

"OFFICIAL RECORD COPY"

ML10

B. PURCHASE OF ANIMALS

- (1) Rodents will be purchased from established rodent vendors who are fully authorized to conduct rodent sales and shipping according to federal regulations.
- (2) The vendor will coordinate shipping time with the ARF supervisor, in advance.

C. TRANSPORTATION AND IDENTIFICATION

- (1) Rodents will be delivered directly to the ARF in Building #17. Animals will be received by one of the animal caretakers.
- (2) Delivery documents will be hand carried by ARF personnel directly to the V.A. receiving warehouse.
- (3) Newly arriving animals will be placed to a separate quarantine room after being put out in numbered (or otherwise appropriately identified) cages.

D. QUARANTINE

- (1) Rodents will be in quarantine for 2 week.
- (2) During this time, the animals will be examined by the ARF Staff for their general health and condition. Observations of physical activity, nasal secretions, conditions of coat and body weight will be made, and abnormalities recorded and filed.

E. RODENT HOUSING

- (1) The rodents will be transferred to regular housing facility after the quarantine period.
- (2) The rodents housing rooms will maintain adequate heat control, air flow and lighting.
- (3) Mice will be housed no more than five per cage. Cages are made of polycarbonate and are 7" wide, 11" long and 5" high.

- (4) Rats will be housed no more than three per cage. Cages are 18" x 26" x 16", made of galvanized metal with solid sides and wire mesh front, back and bottom.
- (5) Cage space per animal must always meet the standards published in the NIH Guide for the Care and Use of Laboratory Animals (DHEW Publication No. NIH 73-23).

F. ANIMAL FEEDING

- (1) Each cage will have a facility for feeding and for a water bottle.
- (2) Water will be checked and changed every day.
- (3) Food will consist of an appropriate commercial rodent chow. Cage food recepticals will be filled every day.

G. SANITATION

- (1) Cages will contain approximately 1 inch of absorbent bedding material. Bedding material will be changed twice a week.
- (2) Wastes will be collected and sealed in plastic bags and placed in covered drums for subsequent disposal by incineration.
- (3) Non-radioactive carcasses will be disposed of similarly.
- (4) Cages, cage tops and water bottles will be washed once a week.
- (5) The walls and floors of the rodent rooms will be washed once a week with appropriate nontoxic detergent.
- (6) The ceiling will be cleaned (wet-wiped) once every two weeks or more frequently if needed.

H. EXPERIMENTATION AND RADIOISOTOPES

- (1) Animals receiving radioisotopes will be housed in separate groups of cages.

- (2) Each cage housing animals receiving isotopes will have a radioactive isotope identification label.
- (3) Excreta, debris and bedding from these cages will be collected separately in plastic containers and will be stored in radioisotope disposal special drums.
- (4) A record of isotope usage will be maintained by the responsible investigators; the record will be kept in the investigator's own office.
- (5) Carcasses of such experimental animals will be stored in plastic containers in a separate freezer marked with "Radioactive" identification labels and will be disposed in special steel drums which will be shipped to the Interex Company in New York for final disposal.

I. ANIMAL CARETAKER STAFF

- (1) The animal caretaker staff currently consists of two individuals that provide 7 day per week coverage of the facilities.
- (2) Each of the caretakers receive a tuberculin test or chest x-ray examination twice a year and will receive tetanus inoculations and booster injections at prescribed intervals. Each animal caretaker will wear a radiation detection film badge.

J. VETERINARY CONSULTATION

- (1) Dr. William Webster, Director of the Animal Care Facilities at the University of Massachusetts School of Medicine, is currently serving as a consultant to the Animal Research Facilities at the Bedford V.A. Hospital.
- (2) He will visit the facility every three months in order to check the operation of the facility and to provide proper guidelines for the management.
- (3) Dr. Webster will be consulted in the event of a disease problem in the animal colony.

IV. REFERENCES

Guide for the Care and Use of Laboratory Animals,
DHEW Publication No. (NIH) 73-23.

V. REVIEW DATE

Review of this publication is due on September 15, 1978.



IRA SHERWIN, M.D.
ACOS/Research & Development

DIST: A. Biological Life Sciences Research:

- (1) Principal Investigators
- (2) Technicians

B. Animal Caretakers

C. Consultant Veterinarian

Information Copy:

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Supply, 134C
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Item 22. Attachments
March 30, 1979

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