

# APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW

## FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20555

## ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND,  
MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND,  
OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION 8  
631 PARK AVENUE  
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA,  
PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR  
WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
101 MARIETTA STREET, SUITE 2900  
ATLANTA, GA 30323

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR  
WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIALS LICENSING SECTION  
790 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA,  
NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH,  
OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON,  
AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS  
TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

## 1. THIS IS AN APPLICATION FOR (Check appropriate item):

- ☐ A. NEW LICENSE  
☒ B. AMENDMENT TO LICENSE NUMBER USNRC 29-00651-05  
☐ C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

## 2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

RCA Laboratories  
201 Washington Rd.  
Princeton, NJ 08540

## 3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED:

same as item 2

## 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Dr. James R. Matey, RCA Laboratories, Princeton, NJ 08540

## TELEPHONE NUMBER

609-734-2868

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

## 5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount  
which will be possessed at any one time.

## 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED:

## 7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE

## 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

## 9. FACILITIES AND EQUIPMENT:

## 10. RADIATION SAFETY PROGRAM

## 11. WASTE

8510240404 850930  
REG1 LIC30  
29-00651-05 PDR

## 12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3-M AMOUNT  
ENCLOSED \$ 120.00

## 13. CERTIFICATION (Must be completed by applicant): THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS  
PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN,  
IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

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.

## SIGNATURE—CERTIFYING OFFICER

## TYPED/PRINTED NAME

## TITLE

## DATE

*[Signature]* D.A. Zurlo

Staff VP, Employee Relations

## 14. VOLUNTARY ECONOMIC DATA

### a. ANNUAL RECEIPTS

<input type="checkbox"/> < \$250K	<input type="checkbox"/> \$1M - 3.5M
<input type="checkbox"/> \$250K - 500K	<input type="checkbox"/> \$3.5M - 7M
<input type="checkbox"/> \$500K - 750K	<input type="checkbox"/> \$7M - 10M
<input type="checkbox"/> \$750K - 1M	<input type="checkbox"/> > \$10M

### b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

### c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours)  
ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE  
PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit  
it to protect confidential commercial or financial—proprietary—information furnished to  
the agency in confidence)

☐ YES

☐ NO

## FOR NRC USE ONLY

## TYPE OF FEE

## FEE LOG

## FEE CATEGORY

## COMMENTS

## APPROVED BY

## AMOUNT RECEIVED

## CHECK NUMBER

\$120

025900

JUL 12 1985

## DATE

8/20/85

APPLICATION FOR MATERIAL LICENSE, NRC 313, SUPPORTING  
INFORMATION -- JULY 10TH, 1985

Ammendment to license 29-00651-05.

Sources exempt from NRC regulation are included in this discussion for RCA internal reference only.

Item 5: Radioactive materials

Sources containing by-product materials:

Iron-55	plated source	NEW ENGLAND NUCLEAR model NER-9041 10 mCi
Americium-241	sealed source	AMERSHAM AMC.2084 10 mCi 2 sources
Americium-241	sealed source	AMERSHAM AMC.21 2 mCi 2 sources
Americium-241	sealed source	AMERSHAM AMC.25 45 mCi 2 sources
Americium-241	sealed source	AMERSHAM AMC.26 200 mCi 2 sources
Cesium-137	sealed source	AMERSHAM CDC.803 code H.50, calibrated 3 mCi 2 sources

Gamma reference  
source set

sealed sources

AMERSHAM QCR.2  
1 set

consists of:

AMR.151	Am-241	10 microcuries	sealed source
BDR.151	Ba-133	10 microcuries	sealed source(exempt)
CDR.151	Cs-137	10 microcuries	sealed source(exempt)
CTR.151	Co-57	10 microcuries	sealed source
CKR.151	Co-60	10 microcuries	sealed source
MFR.151	Mn-54	10 microcuries	sealed source(exempt)
MBR.251	Hg-203	20 microcuries	sealed source
SKR.151	Na-22	10 microcuries	sealed source
YER.151	Y-88	10 microcuries	sealed source

Gamma reference  
source set

sealed sources

AMERSHAM QCR.12  
1 set

consists of:

AMR.121	Am-241	1 microcurie	sealed source
BDR.121	Ba-133	1 microcurie	sealed source(exempt)
CDR.121	Cs-137	1 microcurie	sealed source(exempt)
CTR.121	Co-57	1 microcurie	sealed source
CKR.121	Co-60	1 microcurie	sealed source(exempt)
MFR.121	Mn-54	1 microcurie	sealed source(exempt)
MBR.221	Hg-203	2 microcurie	sealed source(exempt)
SKR.121	Na-22	1 microcurie	sealed source
YER.121	Y-88	1 microcurie	sealed source

radium-226

sealed source

AMERSHAM RAC.2  
10 microgram ~  
10 micro-curies  
2 sources

#### Item 6 Uses:

- Research and development of non-destructive testing methods including gauging and radiography.
- Calibration of x-ray and gamma-ray spectrometers.

#### Item 7 - Individuals Responsible for Radiation Safety Program and their Experience

Dr. James R. Matey will be the Radiation Safety Officer (RSO).

Rhoda M. Brown is the Manager, Occupational Health and Safety.

Dr. James R. Matey

Title: Member Technical Staff

### 1. Position Description

- Carries on theoretical or experimental research in physics, physical chemistry, mathematics, electrical engineering, mechanical engineering or other fields of natural science.
- Seeks new or improved solutions to scientific problems in electronics and related fields.
- Prepares papers and reports on achievements and progress.
- Files patent disclosures on work resulting in invention.
- Generally has same duties as a Senior Member of Technical Staff but with less responsibility and experience.
- Works alone or as a part of a team.

### 2. Experience

Dr. Matey was a University Teaching Fellow from 1973 to 1974, a research assistant from 1974 to 1977, and a University Research Fellow for 1977; all three positions at the University of Illinois, Urbana.

Dr. Matey joined RCA as member of technical staff in December 1977 and remains in that position.

Dr. Matey has also been a Lecturer in the Electronic Physics Department of LaSalle University since 1983.

In 1984, Dr. Matey was appointed to the editorial board of the Review of Scientific Instruments.

### 3. Radiation Training

#### General Physics Training

- B.S. Physics, 1973 Carnegie-Mellon University, Pittsburgh, PA
- M.S. Physics, 1974 University of Illinois, Urbana, Illinois
- Ph.D. Physics, 1978 University of Illinois, Urbana, Illinois

#### Radiation Training/Experience

- Carnegie-Mellon University, Modern Physics Lab, 2 semesters: topics included beta ray spectroscopy, gamma ray spectroscopy, neutron activation analysis.
- University of Illinois, neutron irradiation of quartz samples at Argonne National Lab and subsequent experiments on same samples.
- Northwestern University Continuing Engineering Study CES 8524: Radiation Safety, November, 1984 (3.0 CEU).

Rhoda M. Brown

Title: Manager, Occupational Health and Safety

information must be added here.

#### 1. Position Description

- Responsible for directing the Occupational Health, Safety, and Environment Program for all phases of research and development at RCA Laboratories.
- Conduct safety inspections and industrial hygiene surveys.
- Investigate accidents and injuries.
- Maintain records for federal and state regulatory agencies.
- Coordinate the Medical Surveillance Program.
- Provide managerial direction for Safety Council, Fire Brigade, and First Aid Squad.

#### 2. Experience

Ms. Brown received her BS degree in chemistry from Delaware State College in 1967 and has completed graduate courses in Industrial Hygiene and Industrial Ventilation at Temple University.

In 1977 Ms. Brown joined RCA as Administrator, Safety and Industrial Hygiene. Since joining the staff she has completed courses in chemical safety, industrial noise, and laser radiation safety conducted by the American Industrial Hygiene Association and CDI Seminar Management.

#### Item 8: Training for Individuals Working in or Frequenting Restricted Areas.

- Dr. J. R. Matey - see item 7 for training and experience.

- Dr. Alvin M. Goodman - see resume below.

Individuals may be added to this license at a future date by ammendment. In the absence of prior formal or on the job training, they will attend a formal course such as:

- Northwestern University  
Continuing Engineering Study  
CES 8524: Radiation Safety  
(3.0 CEU)
- Radiation Protection Training Program  
RCA  
AstroElectronics Division  
Hightstown, NJ 08520  
Note to RCA staff: contact S. Seehra at Astro, 426-2972, for information on course dates.

Dr. Alvin M. Goodman

Title: Senior Member Technical Staff

## 1. Position Description

- Appointments to this position indicate that a Member of Technical Staff has been accorded the recognition by his peers and research manageme as an outstanding contributor to past as well as ongoing projects and that he possesses the superior skills and knowledge to maintain productive efforts in future assignments.
- Requirements
  - Research and developement experience over a ten year period, 5 years of which should have been at RCA Laboratories.
  - Demonstrated and recognized outstanding quality of accomplishments in the five years at RCA Laboratories.
  - Quality of submitted patent disclosures and impact of patents applied for or issued on RCA business and licensing activities.
  - Participation in submission of technical articles for professional journals of scientific societies and RCA Laboratories and Corporate publications.

## 2. Experience

Dr. Goodman was a Research Assistant at Princeton University from mid 1956 to early 1957. He was an Assistant Professor at Case Western Reserve University from then until mid 1959. He carried out research at RCA Laboratories as a summer employee in 1954, 1955, and 1958, and joined the laboratory as a Member of Technical Staff in 1959. He was promoted to Senior Member of Technical Staff in 1982. During 1970-71

Dr. Goodman conducted post-doctoral studies at the Swiss Federal Institute of Technology (Zurich).

Dr. Goodman has specialized in solid state physics and semi-conductor measurements and processing. He holds 15 patents, is the author of more than 50 technical publications and has received four RCA Laboratories Outstanding Achievement awards.

From 1973 to 1976, Dr. Goodman served as Member of the Editorial Board of Review of Scientific Instruments. He is a member of the American Physical Society, Sigma Xi, and a Senior member of the IEEE.

### 3. Radiation Training

#### General Engineering Training

- B.S. Electrical Engineering, 1952 Drexel University, Philadelphia, PA
- M.A. Electrical Engineering, 1955 Princeton University, Princeton, NJ
- Ph.D. Electrical Engineering, 1958 Princeton University, Princeton, NJ

#### Radiation Training/Experience

- Northwestern University Continuing Engineering Study CES 8524: Radiation Safety, April, 1985 (3.0 CEU).

### Items 9, 10, and 11: Facilities, Equipment, Radiation Safety and Waste Management

The goal of our radiation safety program is to restrict doses to levels as low as reasonably attainable.

The radiation safety described below is more restrictive than required by NRC regulations. This program may be un-necessarily restrictive for some future research or development effort and may be amended at some future date.

#### Laboratory Area E-228B

Note: Only one laboratory area is presently contemplated; other areas may be added by amendment at a later date.

Laboratory room E-228 will be partitioned into two sections as noted on the accompanying drawing. The inner section of the room, denoted from this point as E-228B, will be accessible via a key-locked door, seen on the drawing. All experiments (except calibrations as noted below) using sources and storage of the sources will be conducted in E-228B.

Keys to E-228B will be provided only to individuals conducting experiments within E-228B and to safety personnel designated by the Manager, Occupational Health and Safety.

The interior walls of E-228 are composed of 5 inch thick gypsum block; the floor and ceiling of the area are composed of 4 inch thick concrete. The exterior wall is brick and masonry construction with windows running the length of the exterior wall. E-228 is in an upper story of the building; there is no walkway outside the window. Closest point of approach to the window is the ground about 20 feet below. The entrance to E-228 is a conventional steel door with a key lock and nightlatch.

The partition within E-228 will be a conventional office dividing partition, with a key lock door. The door will be posted with a sign forbidding entrance to un-authorized personnel, and directing personnel wishing access to contact the Manager, Occupational Health and Safety. A bulletin board for posting regulations will be placed near the door.

### **Routine Maintenance**

Routine maintenance of the room (replacing light bulbs, cleaning, plumbing, etc) will be performed by the normal maintenance personnel, under the direction of one of the individuals named in section 7 or 8. Such maintenance will only be performed when all sources are stored.

### **Source Storage**

Individual sources which are not an integral part of an instrument will be generally be stored in containers of sufficient thickness to reduce the radiation level at the surface of the container to 2.0 mrem/hour or less. In all cases, the sources will be stored in containers of sufficient thickness to reduce the radiation level at the surface to 30 mrem/hour or less.

Original shipping containers will be used when appropriate, otherwise, containers will be fabricated on site or purchased. Thickness will be calculated using sound engineering practice, and radiation levels will be measured after fabrication.

Original shipping containers which do not meet the limit stated above may be used for temporary storage of sources until permanent storage containers are built or bought. In such cases, adequate shielding will be added to the storage cabinet so that the radiation level at the surface of the cabinet meets the criteria set below.

When not in use, the sources, in their containers, will be kept in a locked cabinet. The cabinet will have sufficient shielding to reduce the radiation level at the surface of the cabinet to below 2.0 mrem/hour, when all sources are stored in the cabinet. Keys to the cabinet will be provided only to individuals named in sections 7 and 8. The storage cabinet(s) will be located in E-228B, in a position where the radiation from the cabinet(s) will not raise the radiation levels in adjoining rooms above 0.5 mrem/hour.



Each cabinet will be provided with a source log, in which each source will be recorded upon receipt. Each time a source is removed or replaced in storage, the event will be logged. Each time a source is wipe tested, the wipe test will be logged. If a source is dropped, damaged, or is suspect for any other reason, the event will be noted in the log, and the source will not be used until a wipe test is performed.

Sources which are an integral part of a piece of equipment which has integral radiation shielding to reduce radiation at the surface of the equipment to 2.0 mrem or less when the equipment is not in use will not need to be removed from the equipment when not in use if the equipment can be stored in a position where the radiation from the equipment will not raise the radiation levels in adjoining rooms above 0.5 mrem/hour.

The source storage cabinets and each piece of equipment with an integral source will be provided with a film dosimetry badge which will be read at the same time the personnel badges are read. Dose rates in excess of 2 mrem/hour will be investigated.

### **Dosimetry**

The outer section of room E-228 will also be provided with a film dosimetry badge which will be read at the same time the personnel badges are read. Dose rates in excess of 0.5 mrem/hour will be investigated.

When all sources are stored, no part of E-228B will have an exposure rate greater than 2.0 mrem/hour. This will be checked using a survey meter and shielding added if necessary, each time an additional source is added to the license.

All individuals conducting experiments in E-228B will be provided with radiation badges. Individuals responsible for handling of sources will also be provided with ring badges.

Experiments not requiring the use of licensed material may be performed in E-228B when licensed material is not in use and the licensed sources are properly stored. Personnel conducting such experiments will be provided with radiation badges. Such experiments need not be directly supervised by individuals from items 6 and 7.

Badges will be regularly read, and records maintained by the office of the Manager, Occupational Health and Safety.

### **Source handling**

Sources will be installed in carriers with provisions for attachment of threaded transfer rods or in semi-permanent collimator/holders whenever feasible. Sources not so equipped will be handled with tongs or tweezers. In the rare event that tongs or tweezers are not suitable, sources may be handled with rubber gloves. In any case, calculations of the expected exposure rate from the source for each handling method will be made and posted on the storage cabinet or equipment before the handling method is used. Individuals handling sources will be provided with ring film badges as well as their normal film badge.

Tongs and gloves used to handle sources will be stored in the source storage cabinet(s).

### Wipe Tests and Instrument Calibrations

Wipe tests on sealed sources will be performed at 6 month intervals.

Instrument calibrations will be carried out at 12 month intervals on at least one radiation survey meter.

Calibrations will be performed either by personnel described in item 8, using procedures recommended by the NRC (see NRC regulatory guide 10.8, appendix D) or by vendor(s) listed below.

- Nuclear Diagnostic Laboratories  
PO Box 791  
Peekskill, NY 10566  
914-737-7330

Wipe tests will be performed either by personnel described in item 8, using standard practice (See NBS Handbook 126: American National Standard N542, Sealed Radioactive Sources, Classification; Appendix A: Leak Test Methods.) or by vendor(s) listed below.

- Nuclear Diagnostic Laboratories  
PO Box 791  
Peekskill, NY 10566  
914-737-7330

### Waste Management and Source Disposal

Disposal of surplus sources will be carried out by either:

- Transfer of the source to another licensee with use for the source
- Transfer to:

Nuclear Diagnostic Laboratories  
PO Box 791  
Peekskill, NY 10566  
914-737-7330

Disposal of any other radio-active materials will be carried out in accord with the NRC and state and local regulations in effect at that time. The company(s) noted above for source disposal will be used for disposal of such materials as needed.

### Emergency Planning

In the event of some emergency which might cause a spill of radio-active material within E-228B, the outer door of E-228 leading to the outer partition of the room would be locked and posted. The Radiation Safety Officer and/or the Manager, Occupational Health and Safety would direct emergency personnel. In the event that decontamination were needed, it

would be carried out with the advice and assistance of trained personnel from RCA's Astro-Electronics facility (NRC license 29-09616-01).

### **Bio-Assay**

No routine bio-assay procedures are planned at this time; routine bio-assay should not be necessary for the sources named in section 5.

### **Receipt of Sources**

Purchase orders for sources acquired under this license must be approved by the Radiation Safety Officer and the Manager, Occupational Health and Safety, in addition to the normal RCA approvals.

The receiving department will be instructed to call the radiation safety officer or the Manager, Occupational Health and Safety immediately upon receipt of the source and to make no attempt to open the container for inspection.

The Radiation Safety Officer or the Manager, Occupational Health and Safety, will arrange for the transfer of the container to E-228B as soon as possible, and for a survey of the package.

Any packing materials which must be discarded will be surveyed. In the event of evidence of contamination, the manufacturer will be notified, and the materials will be disposed of via the disposal method noted above.

### **Radiation detection instruments**

The instruments which are currently available are:

Type	Number	Radiation	Sensitivity	Window	Use
Victoreen *Model 70 r-Meter	1	x-ray	integrating 250 mrem full scale 5 mrem small division	60 mg/sq-cm	measuring estimate
Technical Associates SML-2 alarm/ratemeter	1	multiple probes as below			
P-8 geiger probe	1	alpha beta gamma	0.8 mrem/hr full scale .02 mrem/hr small division	1.4 mg/sq-cm	measuring surveying monitoring
PGS-31-P low energy gamma scintillation probe	1	beta gamma	0.04 mrem/hr full scale 0.001 mrem/hr small division	6.9 mg/sq-cm	measuring surveying monitoring
Harshaw gamma ray spectrometer					
Victoreen Model 491 GM counter with 489-110 pancake probe	1	beta/gamma alpha	0.1 mrem/hr full scale 0.005 mrem/hr small division	1.4 mg/sq-cm	surveying measuring monitoring

In addition, there are several other portable survey meters associated with x-ray facilities in the laboratory. These meters would be available for short term use if need arose.

It will be necessary to replace instruments from time to time. Such replacements will be incorporated into the license application at renewal time. At least one survey meter with full scale sensitivity of 1 mrem/hour or better will always be kept calibrated and available.

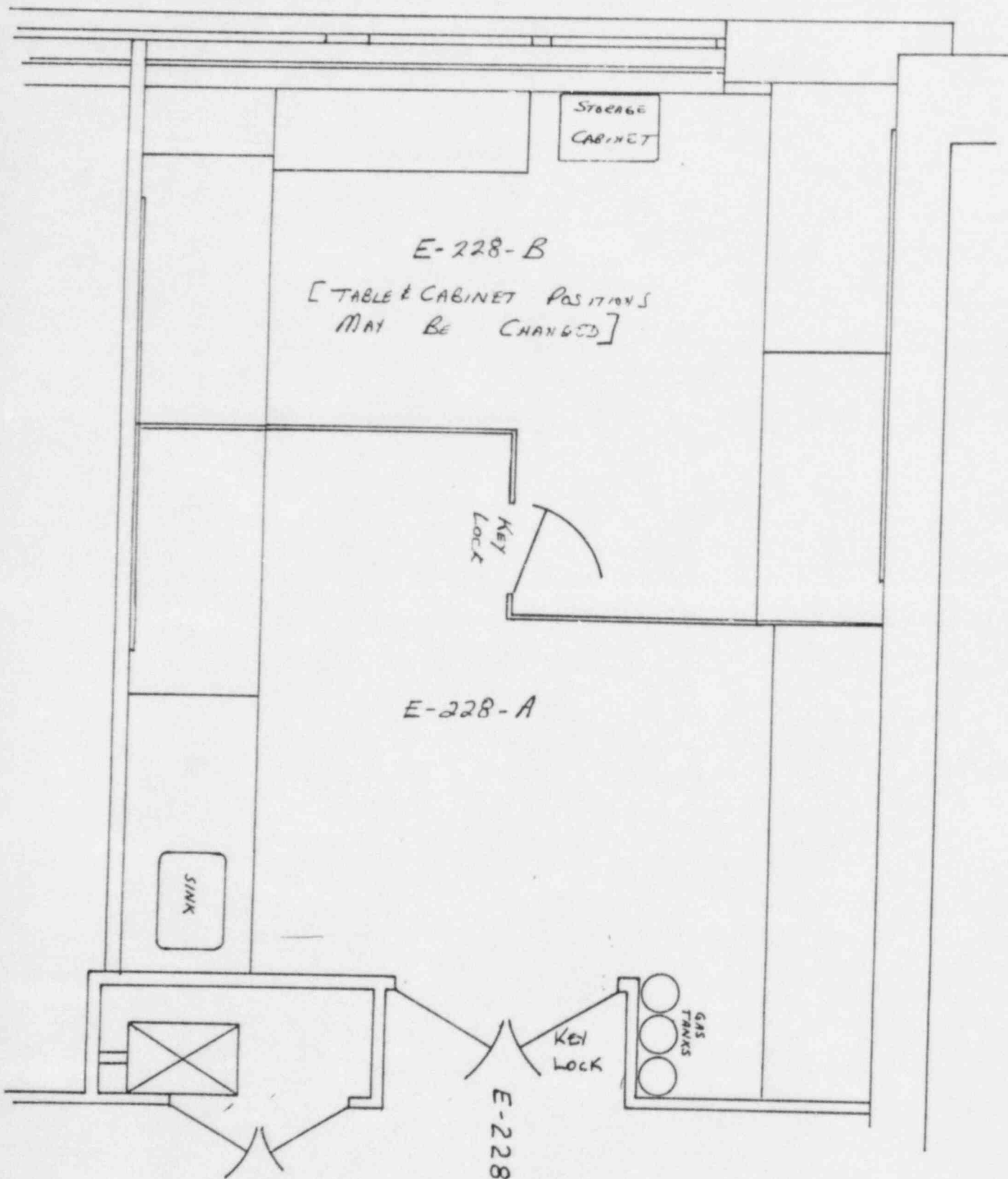
## Calibration of Instruments outside the normal restricted areas:

The following sources are intended as calibration sources:

Americium-241	sealed source	AMERSHAM AMC.2048 10 mCi 2 sources
Gamma reference source set	sealed sources	AMERSHAM QCR.2 1 set
Gamma reference source set	sealed sources	AMERSHAM QCR.12 1 set
radium-226	sealed source	AMERSHAM RAC.2 10 microgram ~ 10 micro-curies 2 sources

These sources might be used for calibration of x-ray spectrometers attached to electron microscopes and other non-portable instruments which do not incorporate licensed materials. These instruments are in areas which are normally un-restricted, but which do have doors which can be locked. In the event we wish to use these sources for calibrating such an instrument, we will:

- Afix a radiation area sticker(temporarily) to the door to the instrument area.
- Clear instrument room of all non-badged personnel.
- Carry source from normally restricted storage area to the instrument room in container with surface exposure rate of 2 millirem/hour or less.
- Lock room
- Perform calibration
- Return source to normal restricted area
- Remove sticker from instrument room and un-lock door.



J. R. Matey  
RCA Laboratories  
NRC-313 Supporting Data  
USNRC # 29-651-2 Renewal/Amendment