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NRC Form 313 I (12-81) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION		1. APPLICATION FOR: (Check and/or complete as appropriate) <b>L+L 23559</b>	
<b>APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL</b>				<input checked="" type="checkbox"/> a. NEW LICENSE	
<i>See attached instructions for details.</i>  Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.				b. AMENDMENT TO: LICENSE NUMBER <b>30 - 28905</b>	
				c. RENEWAL OF: LICENSE NUMBER	
2. APPLICANT'S NAME (Institution, firm, person, etc.) Office of Materials, Development & Research - D.C. Dept. of Public Works TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (202) 727-5675			3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION Jaime Doria-Medina TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (202) 727-3776		
4. APPLICANT'S MAILING ADDRESS (Include Zip Code) (Address to which NRC correspondence, notices, bulletins, etc., should be sent.) 613 G Street, N.W. - Room 628 Washington, D.C. 20001			5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED (Include Zip Code) Temporary Job Sites Within the District of Columbia		
(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)					
6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL (See Items 16 and 17 for required training and experience of each individual named below)					
FULL NAME			TITLE		
a. Virginia W. Mok			Chief, Engineering and Field Operations Division		
b. Victor Cheng			Civil Engineer, Engineering and Field Operations Division		
c.					
7. RADIATION PROTECTION OFFICER Virginia W. Mok			Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.		
8. LICENSED MATERIAL					
L I N E  NO.	ELEMENT AND MASS NUMBER  A	CHEMICAL AND/OR PHYSICAL FORM  B	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)  C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME  D	
(1)	CE-137	Sealed Source	Troxler Electronics 3411-B	9-MCI	
(2)	AM-241-BE	Sealed Source	Troxler Electronics 3411-B	40-MCI	
(3)	RA-226	Sealed Source	Seaman Nucler Corp. R-75	5-MCI	
(4)					
DESCRIBE USE OF LICENSED MATERIAL E					
(1)	For use in Troxler 3400 series moisture-density gauge to measure properties of construction materials.				
(2)	To measure the density of asphalt pavements.				
8510310026 851007 REG1 LIC30 08-23557-01 PDR					
"OFFICIAL RECORD COPY"					
[4]					

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FEE EXEMPT

170.1(a)(9)

79216

U.S. NUCLEAR REGULATORY COMMISSION  
FEE EXEMPT BRANCH

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## 9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Moisture-Density Gauge	Troxler Electronics	3411-B
(2)	Nuclear-Roof Meater	Seaman Nuclear Corp.	R-75
(3)			
(4)			

## 10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	NONE					
(2)						
(3)						
(4)						

## 11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY  N/A	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.  N/A
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## 12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input checked="" type="checkbox"/> (1) FILM BADGE  <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)  <input type="checkbox"/> (3) OTHER (Specify): _____ _____	R.S. Landauer, Jr. Co. Glenwood Science Park Glenwood, Illinois 60425	<input checked="" type="checkbox"/> MONTHLY  <input type="checkbox"/> QUARTERLY  <input type="checkbox"/> OTHER (Specify): _____ _____

## 13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.  
☒ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC."See attached sheets"  
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.  
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

## 14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED  
Sources will be returned to manufacturer.

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED, IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

N/A

# INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (if needed), day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.
16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.
  - a. Principles and practices of radiation protection.
  - b. Radioactivity measurement standardization and monitoring techniques and instruments.
  - c. Mathematics and calculations basic to the use and measurement of radioactivity.
  - d. Biological effects of radiation.
17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

## 18. CERTIFICATE

(This item must be completed by applicant)

*The applicant and any official executing this certificate on behalf of the applicant named in Item 2, 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.*

**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.

a. LICENSE FEE REQUIRED  
(See Section 170.31, 10 CFR 170)

b. CERTIFYING OFFICIAL (Signature)

c. NAME (Type or print)

Jaime Doria-Medina

(1) LICENSE FEE CATEGORY:

d. TITLE Chief  
Research & Development Division

(2) LICENSE FEE ENCLOSED: \$

e. DATE

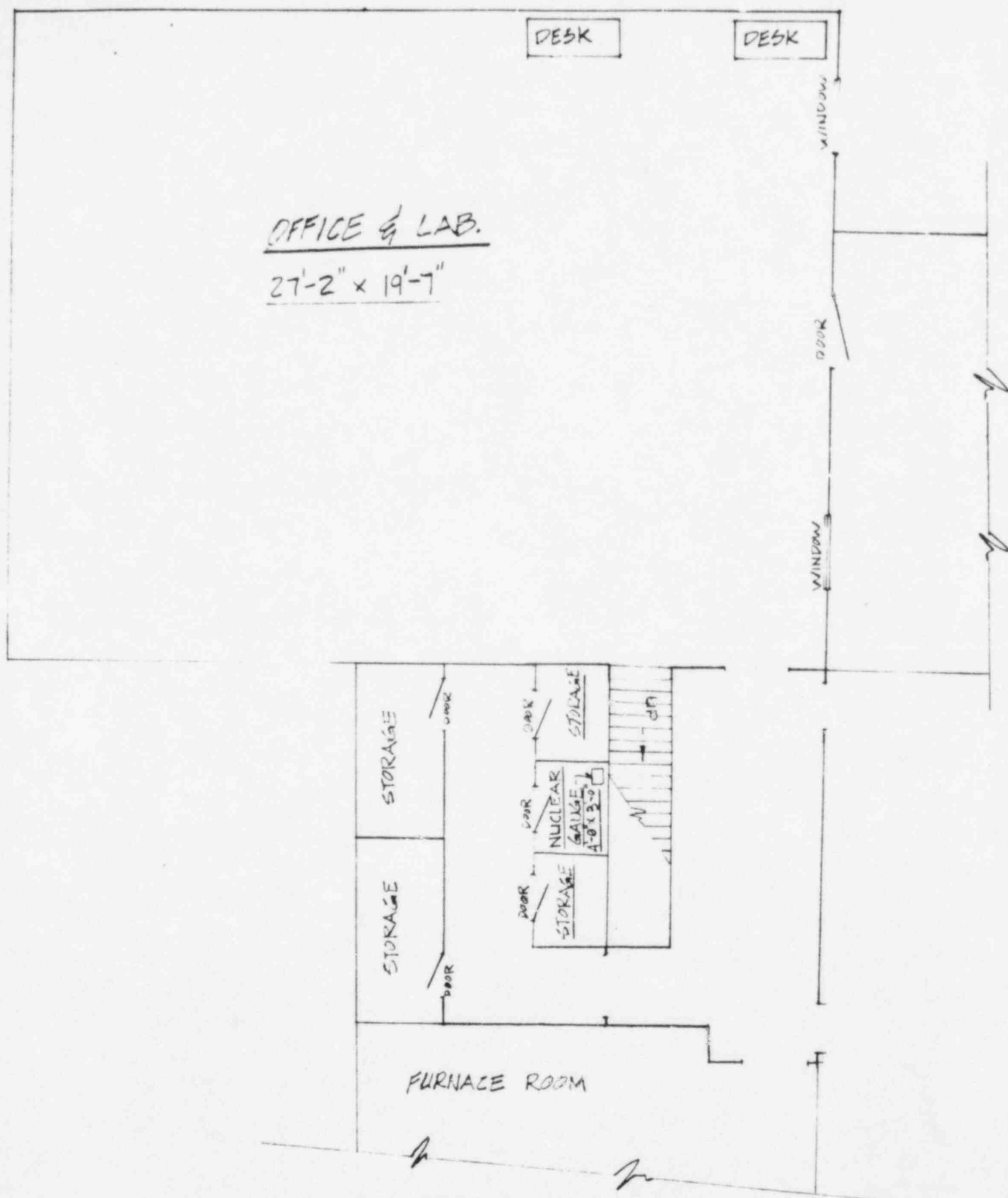
Storage Facilities for Nuclear Gauge  
(R-75)

13. Storage facilities for the R-75 Nuclear Gauge is in the basement part of Annex 8 at 4th and McMillan Drive North West, Zip Code 20001. This building is of brick construction and has a copper roof, and cement floors in the basement part and wooden floors on the 1st and 2nd levels. The storage room has no windows and the door is of wooden construction, with a master pad lock on it. The storage room is marked accordingly with the attached sketch.

Only authorized personnel will have keys to the storage room.

There are two desks in the large room on this floor. Out of these two desks one is occupied 100% of a forty (40) hour work week and the other only about 20% of the week. The attached sketch show the approximate location of the desks.

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ANNEX-8

STORAGE FACILITIES FOR NUCLEAR GAUGE

(R-75)

Storage Facilities for Nuclear Gauge  
(3411-B)

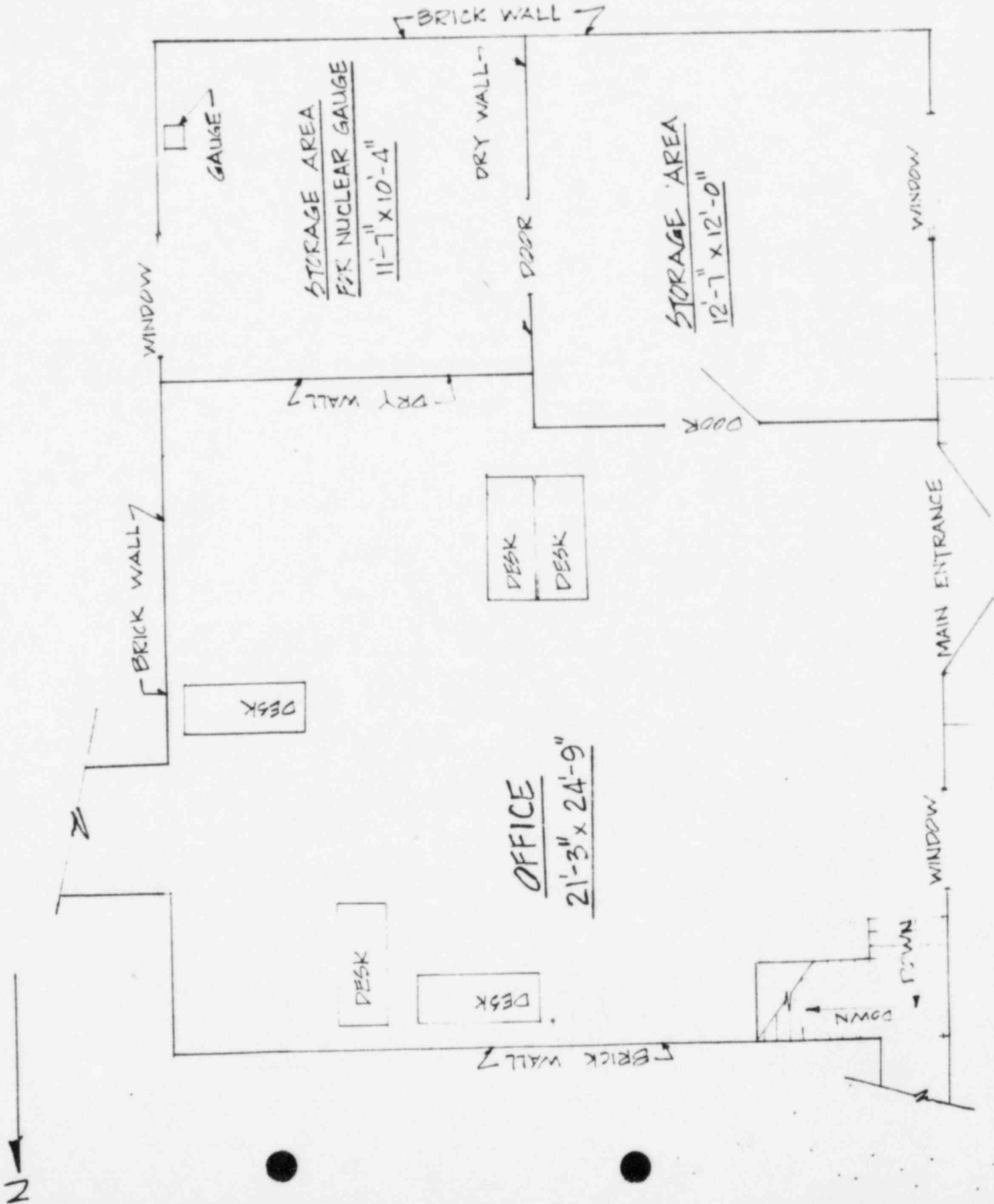
13. Storage facilities for the 3411-B Nuclear Gauge is on the first floor of Annex 9 at 4th and McMillan Drive North West, Zip Code 20001. This building is of brick and mortar construction, with a tile roof and wooden floors. The door to the storage area is wooden with a metal shield and is equipped with a double lock. The windows are covered with heavy duty metal window guards.

Only authorized personnel will have keys to the storage room.

There are five (5) desks in the immediate area of the storage room these desks are occupied 80% of a forty (40) hour work week. The attached sketch show the approximate location of the desks and the Nuclear Gauge.

STORAGE FACILITIES FOR NUCLEAR GAUGE

ANNEX-9





15. Radiation Protection Officer Responsibilities Are:

1. Assure compliance with the requirements of Title 10 CRF Parts 19, 20, and all applicable U.S. DOT regulations.
2. Assure by produce materials possessed under the license are in conformity to materials listed on license.
3. Assure that use of devices is only by persons named as users under the license or person who have completed acceptable training.
4. Assure all users wear personnel monitoring devices when using the gauges.
5. Assure gauges are properly secured against unauthorized removal at all times.
6. Serve as point of contact and give assistance in case of emergency to insure that all proper authorities are notified promptly in case of accidents.
7. Assure that terms of license are met such as:
  - a. Periodic leak tests are performed.
  - b. All required records are kept and reviewed periodically for compliance with regulations.
8. Coordinate the safe use of the gauges.

15. A. Standard Operating Procedures

1. Do not operate, or transport the instrument unless you have been authorized to do so.
2. Always keep the source in a "Safe" position when not in use.
3. Wear a film badge dose measurement device when using or transporting the instrument.
4. Never expose yourself to the bare source without sufficient reason for justification of the additional dose.
5. Keep all unauthorized persons out of the operating area.  
"Recommend distant is 15'"
6. Maintain security of the instrument at all times. The source lock shall be in place when not in use, the instrument kept in a locked vehicle when transported, and in a locked storage area when not in use.
7. Insure that the guages has had a leak test performed every six months.
8. If you have any questions about proper use of the gauges, ask your radiological safety officer.



## 15. B. Security

Locks shall be maintained on the equipment to prevent accidental exposure to the sealed source when not under the direct supervision of approved personnel. Storage containers shall be secure to prevent tampering or removal by unauthorized personnel.

### C. Personnel Monitoring

No one shall use the equipment unless he is in possession of a appropriate dosimeter badge.

### D. Record and Reports

1. A biannual physical inventory to account for all sealed sources under the license shall be performed. Inventory record maintained for inspection.
2. All sealed sources shall be leak tested, at interval required by the license.
3. Reports from dosimeter film badge service shall be maintained for inspection.
4. When an individual terminates employment, a record of his total received dose shall be made available to the employee on request.

### E. Incidents

1. Immediate telephone notification must be made to the following in the event of theft or accidental loss of the sealed source.
  - a. Radiological safety officer.
  - b. U.S. N.R.C. Regional Office
  - c. Local authorities.
  - d. A written report must be made within 30 days giving detailed description of source, circumstances of loss, statement of loss, statement of disposition, possible radiation hazard, action taken to recover source, and procedure to prevent a recurrence of theft.
2. Any over exposure of operators which exceeds the limits given in 10CFR Part 20, shall be reported detailing circumstances of the exposure and possible injury.

### F. Emergency Procedures.

1. In the event of physical damage to a gauge, a 15' radius exclusion area shall be maintained until the extent of source damage is determined. If a Vehicle is involved it must be stopped and remain stopped until the extent of contamination hazard is determined. If visual examination of the instrument and source indicates damage to the source, the appropriated authorities shall be notified. The instrument may be removed from the site by using a long handle shovel and placed in a container such as a metal drum.
2. Provision must be made to have the site surveyed for possible contamination after the instrument is removed.

G. Transport by Private Motor Vehicle.

The equipment, in its container, may be transported by motor vehicle under the "Yellow 11" label without placarding the vehicle as required by 49 CFR 177.823

The lock must be in place and the container placed in a portion of the vehicle which can be locked. When not in transit the equipment must be stored in a secured area.

Since the container has a transport index of 0:1 or greater, it may not be stored less than 30 centimeters from passengers per 49 CFR 174.586, and cannot be stored for more than 8 hours at less than one meter from undeveloped film.

H. Leak Tests

Test for leakage shall be performed utilizing Troxler model 3880 leak test kit.

16. Troxler Electronic Laboratories, Inc. One day standard training course.

17. Troxler Electronic Laboratories, Inc. One day standard training course.

## RESUME

K. Victor Cheng (Mr.)

### EDUCATION

Master of Science in Civil Engineering - 1981  
University of Illinois, Urbana

Bachelor of Science in Civil Engineering - 1979  
University of Illinois, Urbana

### WORK EXPERIENCE

1983 to Present	Government of the District of Columbia Department of Public Works Design, Engineering and Construction Administration Office of Materials Development and Research Engineering and Field Operations Division Washington, D.C. Civil Engineer (Geotechnical Engineering)
1981 to 1983	Woodward - Clyde Consultants, Houston, Texas Geotechnical Engineer - Responsible for the geotechnical aspects of investigation, analysis, design and construction of a wide variety of projects.
1980 to 1981	Highway Material Department University of Illinois, Urbana, Illinois Research Assistant - Testing and Evaluation of geotextiles in pavement systems.
1979 to 1980	Soil Testing Laboratory University of Illinois, Urbana, Illinois Research Assistant - Experimental study of engineering properties of fine-grained dredged materials from Alabama River.

### SPECIAL TRAINING

- 1) Training course for the use of nuclear testing equipment provided by Troxler Electronic Laboratories, Inc.
- 2) Training course of the techniques for pavement rehabilitation provided by National Highway Institute.
- 3) Conferences on geotechnical engineering, hazardous waste management, use of microcomputer and pavement engineering.

## RESUME

Virginia W. Mok (Mrs.)  
4405 Bestor Drive, Rockville, Md. 20853

### EDUCATION

Bachelor of Science in Civil Engineering - 1954  
Chu Hai University, Hong Kong

Master of Science in Civil Engineering - 1960  
University of Maryland, College Park, Maryland

Other Training - Training Courses: (1) Statistical Quality Control Methods in Highway Construction; (2) Supervisory Training; (3) Special Lecture Series on Soil Mechanics and Foundation Engineering and (4) Training Course for the Use of Nuclear Testing Equipment

### EXPERIENCE

5/84 to Present	Government of the District of Columbia Department of Public Works Design, Engineering and Construction Administration Office of Materials Development and Research Engineering and Field Operations Division Washington, D.C. Supervisory Civil Engineer (Chief of the E.F.O. Division)
12/72 to 5/84	Government of the District of Columbia Department of Transportation Bureau of Design, Engineering and Research Washington, D.C. Supervisory Civil Engineer (Chief of Soils Branch)
4/61 to 12/72	Government of the District of Columbia Department of Transportation Bureau of Design, Engineering and Research Washington, D.C. Civil Engineer
10/60 to 3/61	Government of the District of Columbia Department of Highways and Traffic Bureau of Traffic Engineering and Operations Washington, D.C. Traffic Engineer
2/60 to 6/60	University of Maryland Civil Engineering Department College Park, Maryland Research Assistant

Page 2 - Resume of Virginia W. Mok

8/56 to 2/58      Societe Francaise D'Entreprises De  
Dragages Et De Travaux Publics  
Hong Kong  
Assistant Engineer

8/54 to 8/56      Chu Hai University  
Hong Kong  
Instructor (Lecturer)

PUBLICATION

Proceedings, Vol. 40  
1961 Highway Research Board  
Title: Effect of Density and Moisture on Consolidation of  
Compacted Soil



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

BETWEEN: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration

Regional License Section  
Material Licensing Branch  
FCMS, Office of Nuclear Material  
Safety & Safeguards

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: WC Government

Application Dated: 1/12/85 (rec'd date)

Control No.: 119216

License No.: \_\_\_\_\_

2. FEE ATTACHED

Amount: \_\_\_\_\_

Check No.: \_\_\_\_\_

3. COMMENTS

2ms 03

Signed \_\_\_\_\_

Date \_\_\_\_\_

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: LX 3P 170.11(a)(4)

2. Correct Fee Paid. Application may be processed for:

Amendment \_\_\_\_\_

Renewal \_\_\_\_\_

License ✓

**FEE EXEMPT**

Signed J. Jackson

Date 9/23/85