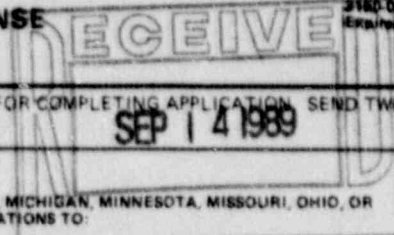


# APPLICATION FOR MATERIAL LICENSE



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.

<b>FEDERAL AGENCIES FILE APPLICATIONS WITH:</b> U.S. NUCLEAR REGULATORY COMMISSION DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS WASHINGTON, DC 20555	<b>IF YOU ARE LOCATED IN:</b> ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:  U.S. NUCLEAR REGULATORY COMMISSION, REGION III MATERIAE LICENSING SECTION 799 ROOSEVELT ROAD GLEN ELLYN, IL 60137
<b>ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:</b>  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 B 631 PARK AVENUE KING OF PRUSSIA, PA 19406	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
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	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) <input checked="" type="checkbox"/> A. NEW LICENSE <input type="checkbox"/> B. AMENDMENT TO LICENSE NUMBER _____ <input type="checkbox"/> C. RENEWAL OF LICENSE NUMBER _____	2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)  H-B-H, Incorporated P.O. Box 1887 Lawton, Oklahoma 73502
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3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.  
  
 Throughout the State of Oklahoma on Various Construction Projects.  
 Unit will be stored at 224 West McArthur Drive, Midwest City, Oklahoma, 73110

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION Ben Petitt	TELEPHONE NUMBER 405/733-2076
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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 MANAGEMENT.	12. LICENSEE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY <u>3P</u> AMOUNT ENCLOSED \$ <u>230.00</u>

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 <i>Don Hascall</i>	TYPED/PRINTED NAME Don Hascall	TITLE Vice President	DATE 9-12-89
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14. ANNUAL RECEIPTS <table border="1"> <tr><td>&lt;\$250K</td><td>\$1M-3.5M</td></tr> <tr><td>\$250K-500K</td><td>\$3.5M-7M</td></tr> <tr><td>\$500K-750K</td><td>\$7M-10M</td></tr> <tr><td>\$750K-1M</td><td>&gt;\$10M</td></tr> </table>		<\$250K	\$1M-3.5M	\$250K-500K	\$3.5M-7M	\$500K-750K	\$7M-10M	\$750K-1M	>\$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)  <input type="checkbox"/> YES <input type="checkbox"/> NO
<\$250K	\$1M-3.5M										
\$250K-500K	\$3.5M-7M										
\$500K-750K	\$7M-10M										
\$750K-1M	>\$10M										

FOR NRC USE ONLY				
TYPE OF FEE <i>App</i>	FEE LOG <i>sep-3-IV</i>	FEE CATEGORY <i>3P</i>	COMMENTS <i>9001250376 B90920 REGA LIC30 35-27004-01 PDR</i>	APPROVED BY <i>M. Missis</i>
AMOUNT RECEIVED <i>\$230</i>	CHECK NUMBER <i>18309</i>			DATE <i>9/18/89</i>

## PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission  
Director, Division of Fuel Cycle and Material Safety  
Office of Nuclear Material Safety and Safeguards  
Washington, D.C. 20555

We have not determined which of the two units (Troxler or Humboldt) we will purchase. We are requesting licensing of both. Our plans are to purchase one unit at this time.

<u>Radioisotope</u>	<u>Form</u>	<u>Maximum Activity</u>	<u>Authorized Use</u>
Cesium 137	Sealed Source. Troxler Drawing No. A-102112.	No Single Source to Exceed 9 mCi/gauge.	For soil density and moisture measurements using the Troxler Model 3401/3411-B moisture- density gauges.
Americium 241	Sealed Source. Troxler Drawing No. A-102451.	No Single Source to Exceed 44 mCi/gauge.	For soil density and moisture measurements using the Troxler Model 3401/3411-B moisture- density gauges.
Cesium 137	Sealed Source. Humboldt Drawing No. 2200064.	No Single Source to Exceed 11 mCi/gauge.	For soil density and moisture measurements using the Humboldt Scientific, Inc. Model 5001 moisture-density gauges.
Americium 241	Sealed Source. Humboldt Drawing No. 2200067.	No Single Source to Exceed 44 mCi.	For soil density and moisture measurements using the Humboldt Scientific, Inc. Model 5001 moisture-density gauges.



The unit has been purchased to provide engineering properties (soil density and moisture) measured on construction projects.

Radiation Safety Officer- Mr. Ben Petitt has been designated as the R.S.O. Mr. Petitt is a registered professional engineer in the States of Texas and Oklahoma.

Mr. Petitt has successfully completed the Nuclear Measurement Services, Incorporated (Humboldt Scientific, Incorporated Factory Authorized Dealer) nuclear gauge and radiation safety training program (see enclosed certificate of training). Mr. Bill Richardson, President of NMS, provided the instruction. NMS is licensed by the Texas Department of Health, Bureau of Radiation Control, to conduct these nuclear gauge training programs. His license number is LO-2889 (see copy enclosed). Reciprocity for Oklahoma (Non-Agreement State) is recognized.

NMS conducts training seminars on nuclear moisture-density gauges (Troxler, Campbell Pacific and Humboldt) for the Texas Department of Highways, Oklahoma D.O.T. and many others throughout the Southwest.

Nuclear Gauge User- Mr. Don Hascall has successfully completed the Nuclear Measurement Services, Incorporated nuclear gauge and radiation safety training program (see enclosed certificate of training).



TEXAS DEPARTMENT OF HEALTH  
RADIOACTIVE MATERIAL LICENSE

05853

Pursuant to the Texas Radiation Control Act and Texas Department of Health regulations on radiation, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess and transfer radioactive material listed below; and to use such radioactive material for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the Texas Department of Health now or hereafter in effect and to any conditions specified below.

<b>LICENSEE</b>		This license issued pursuant to and in accordance with <input checked="" type="checkbox"/> APPLICATION <input type="checkbox"/> LETTER <input type="checkbox"/>	
1. Name	Richardson Associates DBA Nuclear Measurement Services Co.	Dated: September 15, 1988	
2. Address	Attn: Mr. Bill Richardson 2209 Wisconsin, Suite 103 Dallas, Texas 75229	Signed By: Bill Richardson	
		3. License Number	Amendment Number
		102889	7
PREVIOUS AMENDMENTS ARE VOID			
		4. Expiration Date	
		September 30, 1993	

RADIOACTIVE MATERIAL AUTHORIZED			
5. Radioisotope	6. Form of Material	7. Maximum Activity*	8. Authorized Use
A. Cs-137	A. Sealed source (Trox. Dwg. A-102112).	A. No single source to exceed 9 mCi.	A. Receipt, storage, use or transfer to authorized recipients in Troxler Electronic Laboratories Model 3401 or 3411 series moisture/density gauges.
B. Am-241	B. Sealed source (Trox. Dwg. A-102451).	B. No single source to exceed 44 mCi.	B. Receipt, storage, use or transfer to authorized recipients in Troxler Electronic Laboratories Model 3401 or 3411 series moisture/density gauges or Model 3215 or 3216 roof moisture gauges.

CONTINUED ON PAGE 2, IF CHECKED.

CONDITIONS

9. Unless otherwise specified, radioactive material shall be stored only at:

Sub-site Number	Location
000	Dallas - 2209 Wisconsin, Suite 103
001 TERMINATED	New Braunfels - 839-L IH-35 West

10. Unless otherwise specified, the authorized place of use is at temporary job sites throughout Texas.

11. The licensee shall comply with the provisions of Parts 11, 12, 13, 21, 22 and 41 of the Texas Regulations for Control of Radiation.





TEXAS DEPARTMENT OF HEALTH  
RADIOACTIVE MATERIAL LICENSE

Supplementary Sheet

13220

LICENSE NUMBER	AMENDMENT NUMBER
L02889	7

CONTINUED:

Radio-isotope	6. Form of Material	7. Maximum Activity	8. Authorized Use
1. Cs-137/ Am-241	C. Sealed source (Trox. Dwg. A-100281, Rev. B, C or D).	C. No single source to exceed 10 mCi. of Cs-137 or 50 mCi. of Am-241.	C. Receipt, storage, use or transfer to authorized recipients in Troxler Electronic Laboratories Model 2401 moisture/density gauge.
2. Ra-226	D. Sealed source (Trox. Dwg. A-100280, Rev. B, C or D).	D. No single source to exceed 3.3 mCi.	D. Receipt, storage, use or transfer to authorized recipients in Troxler Electronic Laboratories Model 2401 or 2451 moisture/density gauges.
3. Cs-137	E. Sealed source (CPN Model CPN-131).	E. No single source to exceed 10 mCi.	E. Receipt, storage, use or transfer to authorized recipients in Campbell Pacific Nuclear Model MC series moisture/density gauge.
4. Am-241	F. Sealed source (CPN-Model CPN-131).	F. No single source to exceed 50 mCi.	F. Receipt, storage, use or transfer to authorized recipients in Campbell Pacific Nuclear Model MC series moisture/density gauge or surface moisture gauge.
5. Cs-137	G. Sealed source (HSI Dwg. 2200064).	G. No single source to exceed 11 mCi.	G. Receipt, storage, use or transfer to authorized recipients in Humboldt Scientific, Inc. Model 5001 moisture/density gauges.
6. Am-241	H. Sealed source (HSI Dwg. 2200067).	H. No single source to exceed 44 mCi.	H. Receipt, storage, use or transfer to authorized recipients in Humboldt Scientific, Inc. Model 5001 moisture/density gauges.

CONTINUED ON PAGE 3



TEXAS DEPARTMENT OF HEALTH  
RADIOACTIVE MATERIAL LICENSE

Supplementary Sheet

13219

LICENSE NUMBER	AMENDMENT NUMBER
L02889	7

CONTINUED:

5. Radio-isotope	6. Form of Material	7. Maximum Activity	8. Authorized Use
I. Ra-226	I. Sealed source (TEL Model A-102451).	I. No single source to exceed 300 mCi.	I. Receipt, storage, use or transfer to authorized recipients in Troxler Electronic Laboratories Model 2226 asphalt gauge.

CONDITIONS CONTINUED:

12. Radioactive material shall be used only by Bill Richardson, Jerry York, Corina Beck, and/or Terry Tackitt.
13. The individual designated to perform the functions of Radiation Safety Officer for activities covered by this license is Bill Richardson.
14. Sealed sources containing radioactive material shall not be opened.
15. Sealed sources of radioactive material, Nickel 63 foil, and/or plated alpha emitting sources shall be tested for leakage and/or contamination in accordance with the provisions of Texas Regulations for Control of Radiation 11.7.
16. The licensee is authorized to provide radiation safety training to individuals who plan to use moisture/density gauges. A list of the persons completing the course will be provided to the Agency within seven (7) days after the course.
17. The licensee shall not transfer radioactive material to other persons until it is verified that the recipient is authorized to possess the type and amount of material to be transferred.
18. Radiation survey instruments shall be calibrated at intervals not to exceed 6 months by persons licensed by the Agency, another Agreement State, or by the U.S. Nuclear Regulatory Commission.
19. The licensee is authorized to remove the source rod and perform bearing replacement and other mechanical servicing of on the customer's equipment. This authorization includes retrieval and storage of damaged source rods in lead pigs at field sites until repair of damaged gauges can be accomplished.

CONDITIONS CONTINUED ON PAGE 4



(2/88)



TEXAS DEPARTMENT OF HEALTH  
RADIOACTIVE MATERIAL LICENSE

Page 4 of 4 Page

18006

Supplementary Sheet

LICENSE NUMBER	AMENDMENT NUMBER
L02889	7

## CONDITIONS CONTINUED:

20. The licensee shall conduct a physical inventory every 6 months to account for all sealed sources received and possessed under the license. The records of the inventories shall be maintained for two years from the date of the inventory for inspection by the Agency and shall include the quantities and the kinds of radioactive material, location of sealed sources, and the date of the inventory.
21. The licensee is authorized to perform tests for leakage and/or contamination at customer sites throughout Texas and to distribute his leak/wipe test kit Model 883 to customers for the licensee's subsequent analysis. Such tests shall be capable of detecting 0.005 microcuries of contamination on the test sample and the results of such tests shall be provided to the customer in terms of microcuries.
22. Except as specifically provided otherwise by this license, the licensee shall possess and use the radioactive material authorized by this license in accordance with statements, representations, and procedures contained in the following:

application dated September 15, 1988.

The Texas Regulations for Control of Radiation shall prevail over statements contained in the above documents unless such statements are more restrictive than the regulations.

RH:ecb

FOR THE TEXAS DEPARTMENT OF HEALTH

October 27, 1988

Date \_\_\_\_\_

Licensing Branch

NUCLEAR MEASUREMENT SERVICES, INCORPORATED

HEREBY CERTIFIES THAT



BEN PETITT

of

H-B-H, INCORPORATED

HAS SUCCESSFULLY COMPLETED THE NUCLEAR MEASUREMENT SERVICES TRAINING COURSE  
FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE ARE AS FOLLOWS:

Principles and practices of radiation protection.  
Leak testing procedures.  
Mathematics and calculations basic to the use  
and measurement of radioactivity.  
Biological effects of radiation.

Radioactivity measurement standardization and  
monitoring techniques and instruments.  
Accident and incident procedures.  
Procedures for nuclear gauge storage  
and transportation.  
General safety precautions.

GAUGE OPERATION

Instrument theory  
Operating procedures  
Maintenance

Field applications  
Gauge standardization  
Gauge calibration

TRAINING DATE/DATES

9-09-89

Bill Richardson

INSTRUCTOR

PRESIDENT







The only other nuclear user has been named in Item 7, Mr. Hascall. Any additional nuclear gauge users will attend a nuclear gauge radiation safety program prior to using the device.

We will maintain training records of any and all users for a minimum of two years as required.

We recognize the need to provide adequate security and protection for the proposed nuclear gauge to be purchased. The building is physically located at 224 West McArthur Drive, Midwest City, Oklahoma, 73110.

The building is constructed of concrete masonry block leased by the licensee. It could best be described as an office/warehouse facility. The owner has been advised of our plan to store the device in our facility. We have received his approval.

To provide greater security within this locked building, we are building and will have completed prior to delivery of the unit a three foot by three foot closet enclosure constructed of sheetrock (drywall) over metal studs with a single steel access door. No windows or other openings will be allowed. The single steel access door will be equipped with a padlock and hasp in addition to the normal keyed lock. A radiation sign will be posted on the storage door facing outside.

A utilization log will be posted on the interior of the access door for easy entry of log data .

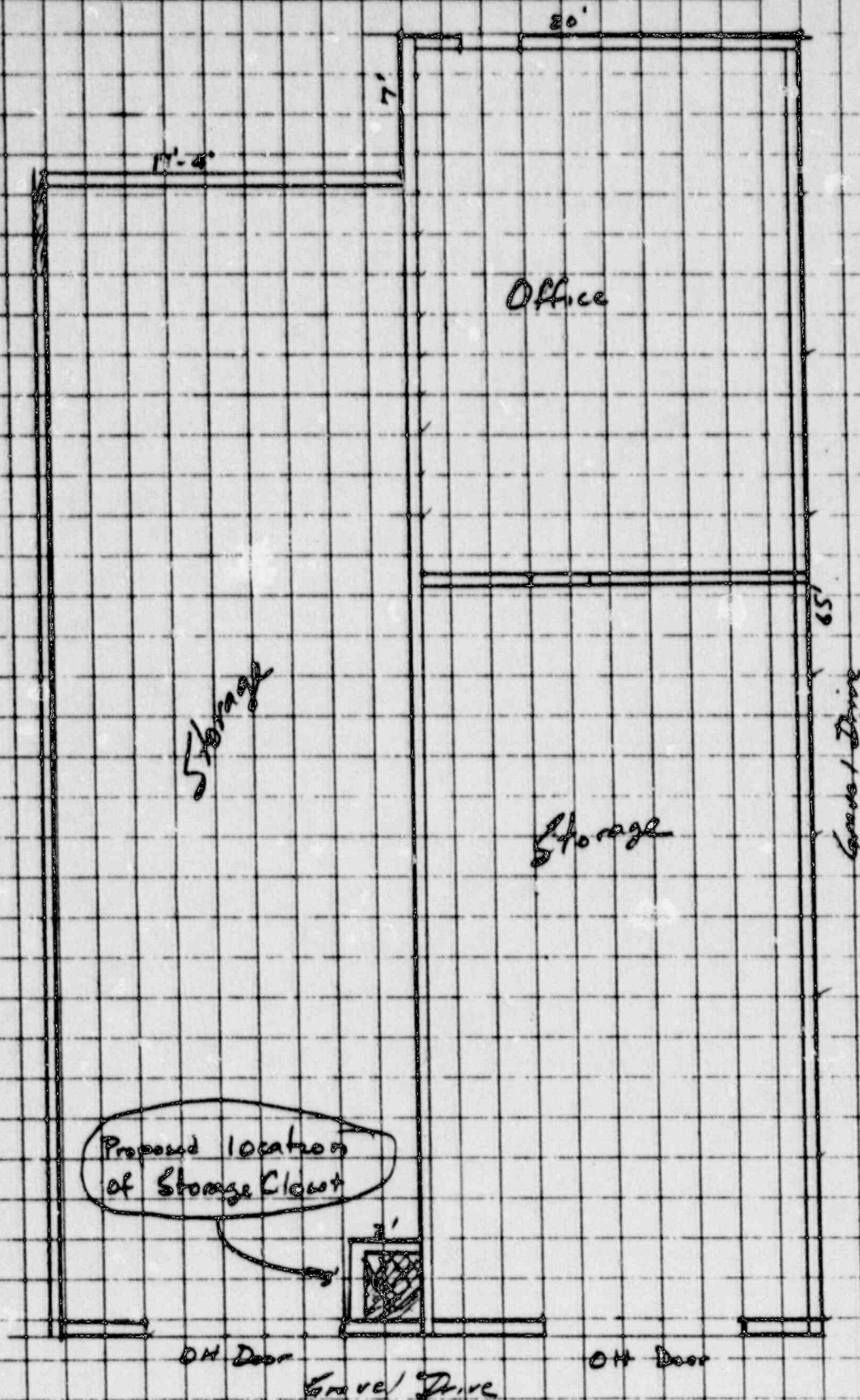
Surveillance of the storage location is provided by the front office personnel who limit access to the storage area through the rear garage type door which is kept secured and locked to prevent unauthorized access.

Transport of the device shall be carefully monitored. The device will be transported in the rear of a pickup truck. It will be carried in the manufacturer's D.O.T. Certified carrying case with all appropriate radiation labelling.

The device will be secured and locked to the vehicle at all times to prevent removal by unauthorized personnel. Transport of the device by the authorized user shall be required.

A drawing of the proposed storage location is enclosed and attached.

W McArthur Drive





See Attached.

## RADIATION PROTECTION PROGRAM

PREPARED BY H-B-H, INCORPORATED

The following is an outline of our methods and procedures for controlling, handling, servicing, using and storing radioactive materials. Included in this outline is the named supplier of film badges or other personnel monitoring devices. An outline of personnel monitoring procedures is provided.

### I CONTROL AND STORAGE OF RADIOACTIVE MATERIAL

- A. Equipment and Sources Description—Nuclear gauge equipment contains one or more radioactive isotopes that are sealed sources within the device. These isotopes pose certain health hazards under certain circumstances to include external exposure (radiation exposure from outside the body) and internal radiation hazard (radiation poisoning). As a user of such equipment, we must exercise caution to assure that the instrument is carefully controlled.
1. Security—Regulations require that locks be maintained on radiographic equipment to prevent accidental exposure of a sealed source or sources when not under the direct supervision of approved, licensed personnel. In addition, storage containers shall be physically secured to prevent tampering or removal by unauthorized personnel.
  2. Storage—The storage facility within our building has been carefully selected. The gauge storage area is not in such a location as to place workers or occupants of either our building or adjacent buildings or tenants in an appreciable radiation field. The gauge will not be stored closer than 15 feet to a permanent work station, such as a desk or drafting table. Our workers may be permitted closer to the storage area provided they do not occupy a permanent work station and provided the area occupied does not have a radiation dosage to exceed 2 millirem per hour.

A storage room has been constructed. It meets the criteria described in the preceding paragraph. The storage area has only one access door and no windows, which will enhance the security aspects. The access door has a padlock. The access has a radiation sign on it.

3. Transportation-Transporting security is a consideration as well. The device will be placed in an appropriate transfer case which will be secured to the vehicle. The transfer case will be locked so that the gauge equipment cannot be tampered with or removed by unauthorized personnel. The device and its transfer case will be placed in the rear compartment of an open vehicle such as a pickup truck. The device will be somewhere near the center of the rear compartment so that vehicle operators are not exposed unnecessarily. Placement of the gauge near the center portion of the rear compartment will provide an additional measure of protection from damage resulting from accidents such as a rear-end collision.

Transport by Motor Vehicle-This instrument, in its container, may be transported by motor vehicle under the "Yellow-II" label without placarding as required by 49 CFR 177.823.

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.

It is our final responsibility as a gauge owner to obtain copies of regulations which apply to our situation and comply with them.

4. Utilization Control-A utilization log will be maintained for each gauge device. The log will indicate the date, the operator obtaining the device, the location at which the device will be used and the expected duration of the use. This utilization log will be maintained at the company's office.
5. User Control-Nuclear gauge equipment is to be operated by trained personnel only. Operators who have not completed such training will not be permitted to operate this equipment.



It is necessary that all users of the nuclear gauge equipment be listed as users on the application for license. New operators or users of the equipment will be added by an amendment letter to the license before such operators will be permitted to use nuclear gauge equipment. As well users named previously on the license will be removed if these individuals resign or are terminated from use of the gauge.

## II. NUCLEAR GAUGE HANDLING AND USAGE

A. Radiation Protection Officer- The named individual, reporting to management on radiation safety matters, will coordinate:

1. The safe usage of the gauges.
2. Assure compliance with requirements to Title 10 CFR parts 19, 20, 30, 71 and all applicable U.S.D.O.T. Regulations.
3. Assure by-product materials possessed under the license are in conformity to materials listed on the license.
4. Assure that use of devices, particularly in the field, is by persons named as users under the license or persons who have completed acceptable training.
5. Assure gauges are properly secured against unauthorized removal at all times.
6. Assure all users wear personnel monitoring equipment when using gauges.
7. To serve as a point of contact and give assistance in case of accidents.
8. Assure that terms and conditions of license are met such as:
  - a. Periodic leak tests are performed.
  - b. All required records are kept and reviewed periodically per compliance with regulations. These include source certificate, leak test records, personnel exposure records and transfer of radioactive materials.

A resume for the named individual of his training in radiological safety and safe use and handling of gauges is included. Included is all previous experience in the use of radioactive materials.

B. Handling Procedures

Nuclear gauge instruments were designed with operator safety as a prime consideration; however, as with any piece of potentially hazardous equipment, some general precautions will be observed. Our personnel will be instructed as follows:

1. Do not operate or attempt to operate the instrument unless you have been authorized to do so.
2. Keep the source position in a "SAFE" or stored position when not in use.
3. Wear a film badge or other dose measurement device when using or transporting the instrument.
4. While exposure dosage levels are well within the limits for radiation workers, never expose yourself to the source without sufficient reason for justification of the additional dose.
5. All unauthorized persons should be kept out of operating area. A suggested distance is 5 meters or 15 feet. The general public must not be unnecessarily exposed to radiation.
6. Maintain security of the instrument at all times. The source lock should be in place when not in use and the instrument should be in a locked vehicle when being transported. When stored, the area should be locked. Not only is it an expensive piece of equipment but if stolen, could be abandoned under conditions which could be a hazard to the general public.
7. Every user organization has a standard operating procedure. The operator should follow these procedures and report any that he feels are unsafe.
8. Insure that the gauge has had leak test measurements at the proper intervals as required by the radioactive materials license.
9. If you have any doubts about the use of the instrument, ARK. Your radiation safety officer either has the answer or can obtain one.

C. Personnel Monitoring

As a licensee, we shall not permit any person to use this equipment unless at all times he is in possession of a film badge dosimeter. Film badge reports shall be maintained for inspection.

D. Records and Reports

1. As a licensee, we shall conduct a quarterly physical inventory to account for all sealed sources received and processed under his license. The record shall be maintained for inspection.
2. As a licensee, we shall have all sealed sources leak tested at intervals not to exceed six months. In the absence of a certificate, the source shall not be put into use until tested.
3. Reports from film badge service shall be maintained for inspection.
4. When an individual terminates employment with us, a record of his total received dose will be made available to the employee.

E. Incidents

1. As a licensee, we must report any theft or loss of licensed material by telephone or telegram to the Nuclear Regulatory Commission and, to nuclear gauge service and sales companies within Texas and Oklahoma and surrounding states.
2. As a licensee, we must report any overexposures of operators which exceed the limits given in Title 10 CFP Part 20, detailing circumstances of the exposure and possible injury.

F. Handling and Emergency Procedures

1. No personnel will transport or use the nuclear gauge unless the individual has been approved by the radiological safety officer and the requirements of these procedures have been met.
2. Each user must demonstrate his ability to correctly and safely use the nuclear gauge.
3. At the termination of each use, the nuclear gauge will be transferred to its regular storage area.
4. In the event of physical damage to the gauge, a sixteen (16) foot radius exclusion area will be maintained until extent of source damage (if any) can be determined. If a vehicle is involved, it will be stopped until the extent of contamination hazard (if any) is determined.



If visual examination of the instrument and source rod indicate damage to the source rod tip, including fracture of the tip or weld, we will notify the Nuclear Regulatory Commission & keep personnel clear of the instrument. We will remove the instrument and place it in a suitable container such as a metal drum. We will make a provision to have the site surveyed after removal of the instrument to determine if a breakage has occurred. Disposition by Nuclear Measurement Services, Inc., as covered would be arranged after a leak test had been performed to determine the integrity of the source before transport back to Nuclear Measurement Services, Inc.

5. Immediate telephone notification will be made to the following in the event of accident (for above) or the loss of a sealed source, whether accidental or due to theft:
  - A. Company Radiological Safety Officer.
  - B. NRC Regional Office.
  - C. Oklahoma Health Department, Bureau of Radiation Control.
  - D. Local Authorities:  
(Fire Department, Sheriff, Police, State Highway Patrol, if necessary)
  - E. Nuclear Measurement Services, Inc.

### III. SERVICING

User servicing of this device will be limited to electronic and mechanical servicing. Removal or replacement of radioactive isotopes shall not be conducted by our company.

### IV. PERSONNEL MONITORING PROCEDURES

- A. Film Badge Selection—An approved film badge supplier will be selected. The type of badge selected will be carefully considered. Nuclear gauge equipment, depending upon type selected, emits any or all of the following types of radiation. Alpha, Beta, Gamma and Neutron radiation are produced. Surface type gauge equipment for moisture density work requires a badge which will monitor all types of radiation.

Personnel monitoring devices will be worn on the upper torso, somewhere between in beltline and the top of the head. The badge will be worn on the chest area where the blood forming organs are present.

These film badges will be issued to each individual who transports or uses nuclear gauge equipment. Care will be exercised to insure appropriate radiation monitoring. Extreme heat can effect monitoring devices. These badges will not be stored with nuclear gauge equipment. The devices are to determine occupational dosage only. Film badges not be worn when going for x-ray or other radiation therapy.

The film badge supplier Selected by this licensee is R.S. Landauer, Jr. & Company, Technical Ops. Address 2 Science Road, Glenwood, Illinois 60425 Phone Number 312/755-7000 Type of Badge Selected - B-1 Monthly

## LEAK TESTING

We will purchase from the manufacturer a leak test kit. The kit will be supplied by Nuclear Measurement Services, Incorporated, a licensed leak test vendor (see enclosed vendor's license). The kit is a model 883. The vendors address is on the enclosed approved license.

Nuclear Measurement Services, Inc.  
2209 Wisconsin, Suite 103  
Dallas, Texas 75229



This device contains sealed radioactive sources which do not generate wastes.

We understand that the device can be disposed of only through transfer of the device to a licensed recipient. A copy of his radioactive material license will be obtained and carefully examined to insure his compliance with licensing requirements prior to transfer.

A transfer document will be maintained and a copy provided to the licensed recipient. All pertinent data such as leak test records, source certificates and other data will be copied and provided to the recipient.

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