

APPLICATION FOR BYPRODUCT MATERIAL LICENSE  
INDUSTRIAL

1. APPLICATION FOR:  
(Check and/or complete as appropriate)

☒ a. NEW LICENSE

b. AMENDMENT TO:  
LICENSE NUMBER

☒ c. RENEWAL OF:  
LICENSE NUMBER

45-19543-01

See attached instructions for details.

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.

2. APPLICANT'S NAME (Institution, firm, person, etc.)

Centex Construction Company

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
1-703-639-9687

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Donald P. McConnell

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
1-703-639-9687

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)

P.O. Box 3697 2947 Gallows Road  
Radford, Virginia 24141 Falls Church, Va.  
22042.

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED  
(Include Zip Code)

At address listed in Item No. 4 and at temporary jobsites anywhere NRC maintains jurisdiction.

(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. Donald P. McConnell

~~Chief of Quality Control~~

ASSISTANT  
PROJECT  
MANAGER

b.

c.

7. RADIATION PROTECTION OFFICER

Donald P. McConnell

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)	Cs 137	Sealed Source	Troxler Drawing #102112	No source to exceed 9 mci
(2)	Am 241:Be	Sealed Source	Troxler Drawing #102451	No source to exceed 40 mci
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL  
E

(1) For use in Troxler 3400 series Moisture-Density Gauge to measures properties  
(2) of construction materials.

(3) 8604070197 860110  
REG2 LIC30  
45-19543-01 PDR

## 9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Moisture Density Gauge	Troxler Electronics	3400 Series
(2)			
(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.
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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  1-312-755-7000	<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 sketch.)  
☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.  
☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.
- (REVISED).

## 14. WASTE DISPOSAL

- a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED  
Source to be returned to the 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.

# 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:

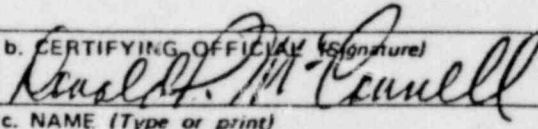
15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (if needed), day-to-day general safety instruction to be followed, 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.

<b>a. LICENSE FEE REQUIRED</b> (See Section 170.31, 10 CFR 170) Application : \$ <del>110.00</del> Renewal : \$ <del>110.00</del> Amendment \$ <del>40.00</del>	<b>b. CERTIFYING OFFICIAL (Signature)</b>  <b>c. NAME (Type or print)</b> Donald P. McConnell
<b>(1) LICENSE FEE CATEGORY:</b> <del>3</del> 3.i	<b>d. TITLE</b> Chief of Quality Control
<b>(2) LICENSE FEE ENCLOSED:</b> \$ <del>260.00</del>	<b>e. DATE</b> September 9, 1980

## 15. RADIATION PROTECTION PROGRAM:

### A. HANDLING PROCEDURES

1. Do not operate or attempt to operate the instrument unless you have been authorized to do so.
2. Keep the source position in the "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 dose levels are well within limits for radiation workers, 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. 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 kept in a locked vehicle when 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 hazardous.
7. Every user organization has standard operating procedures; the operator should follow those procedures and report any that he feels are unsafe.
8. Insure that the gauge has had leak tests performed at the intervals required by your Radioactive Materials License.
9. If you have any doubts about use of the instrument, ASK. Your Radiological Safety Officer either has the answer or can obtain one.

### B. SECURITY

Regulations require that locks be maintained on radiographic equipment to prevent accidental exposure of a sealed source when not under the direct supervision of approved personnel. In addition, storage containers shall be physically secured to prevent tampering or removal by unauthorized personnel.

### C. PERSONNEL MONITORING

The licensee should not permit any person to use this equipment unless at all times the user is in the possession of a film badge or other form of dosimetry.

The film badge requirement may be waived upon application by the licensee if it can be demonstrated that the waiver is authorized by law and will not result in undue hazard to life or property.



#### D. RECORDS AND REPORTS

1. Each licensee should conduct a quarterly physical inventory to account for all sealed sources received and possessed under his license. The inventory record should be maintained for inspection.
2. Each licensee shall have all sealed sources leak tested at the interval required by the license. When transferred, in the absence of a leak test certificate, the source shall not be put into use until tested.
3. Reports from film badge service must be maintained for inspection.
4. When an individual terminates employment with a licensee, a record of his total received dose must be made available to the employee.

#### E. INCIDENTS

1. The licensee must report any theft or loss of licensed material by telephone or telegram to the appropriate agency, including the appropriate state agency. Within 30 days after the loss, a written report must be filed giving detailed description of the source, circumstances of the loss, statement of disposition, possible radiation exposures or hazard, actions taken to recover the source, and procedures which will be implemented to prevent a recurrence of the loss or theft.
2. The licensee must report any overexposure of operators which exceeds the limits given in 10 CFR part 20, detailing circumstances of the exposure and possible injury.

#### F. HANDLING AND EMERGENCY PROCEDURES

1. No personnel may transport or use the nuclear gauges unless the individual has been approved by the radiological safety officer and the requirements of these procedures are met.
2. Each user must demonstrate their ability to correctly and safely use the nuclear gauge.
3. At the termination of each field use, the nuclear gauge will be transferred to its regular storage area.
4. In the event of physical damage to a gauge, a six (6) feet radius exclusion area should be maintained until the extent of source damage (if any) is determined. If a vehicle is involved, it must be stopped and remain stopped until the extent of contamination hazard (if any) is determined. If visual examination of the instrument and source indicates damage to the source, including fracture of the weld, the appropriate authorities and Troxler Electronic Laboratories, Inc. should be notified. The instrument may be removed from the site by using a shovel

or other long handled instrument and placed in a suitable container such as a metal drum. Provisions should be made to have the site surveyed for possible contamination after the instrument is removed. Disposition by the factory, as covered later, could be arranged after a leak test had been performed to determine the integrity of the source before shipment back to the factory.

5. Immediate telephone notification must be made to the following in the event of accident (4 above) or the loss of a sealed source, whether accidental or due to theft.
  - A. Company Radiological Safety Officer
  - B. NRC Regional Office if applicable
  - C. State Health Department  
Radiological protection division if applicable
  - D. Local Authorities  
Fire dept., sheriff, police, state highway patrol,  
if necessary
  - E. Troxler Electronic Laboratories, if necessary

#### G. TRANSPORT BY PRIVATE MOTOR VEHICLE

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

The lock should be in place and the container placed in a portion of the vehicle which can be locked. When not in transit the equipment should 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. It also should not be stored for more than 8 hours at less than 1 meter from undeveloped film.

- H. It is the final responsibility of the gauge owner to obtain copies of regulations which apply to his situation and comply with them.

#### I. LEAK TESTING

Leak testing will be performed using the Troxler No. 3880 Leak Test Kit.

## J. RADIATION PROTECTION OFFICER

The radiation Protection officer reports to management on radiation safety matters and coordinates the following:

- 1) The safe use of the gauges.
- 2) Assures compliance with the requirements of Title 10 CRF Parts 19, 20, 30, or applicable state regulations, and all applicable US DOT regulations.
- 3) Assures byproduct materials possessed under the license are in conformity to materials listed on the license.
- 4) Assures that use of devices (particularly in the field) is only by persons named as users under the license or persons who have completed acceptable training.
- 5) Assures all users wear personnel monitoring (when required) while using gauges.
- 6) Assures gauges are properly secured against unauthorized removal at all times.
- 7) To serve as point of contact and give assistance in case of emergency - to insure all proper authorities are notified promptly in case of accidents.
- 8) Assures that terms/conditions 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 - these include source certificate, leak test records, personnel exposure records, and transfer of radioactive materials.

16. FORMAL TRAINING IN RADIATION SAFETY

The personnel listed below will attend the Troxler Electronic Labs, Inc. two-day training program, which is designed to enable technicians to use the Troxler 3411-B safely and properly.

- 1). Don McConnell - No prior experience

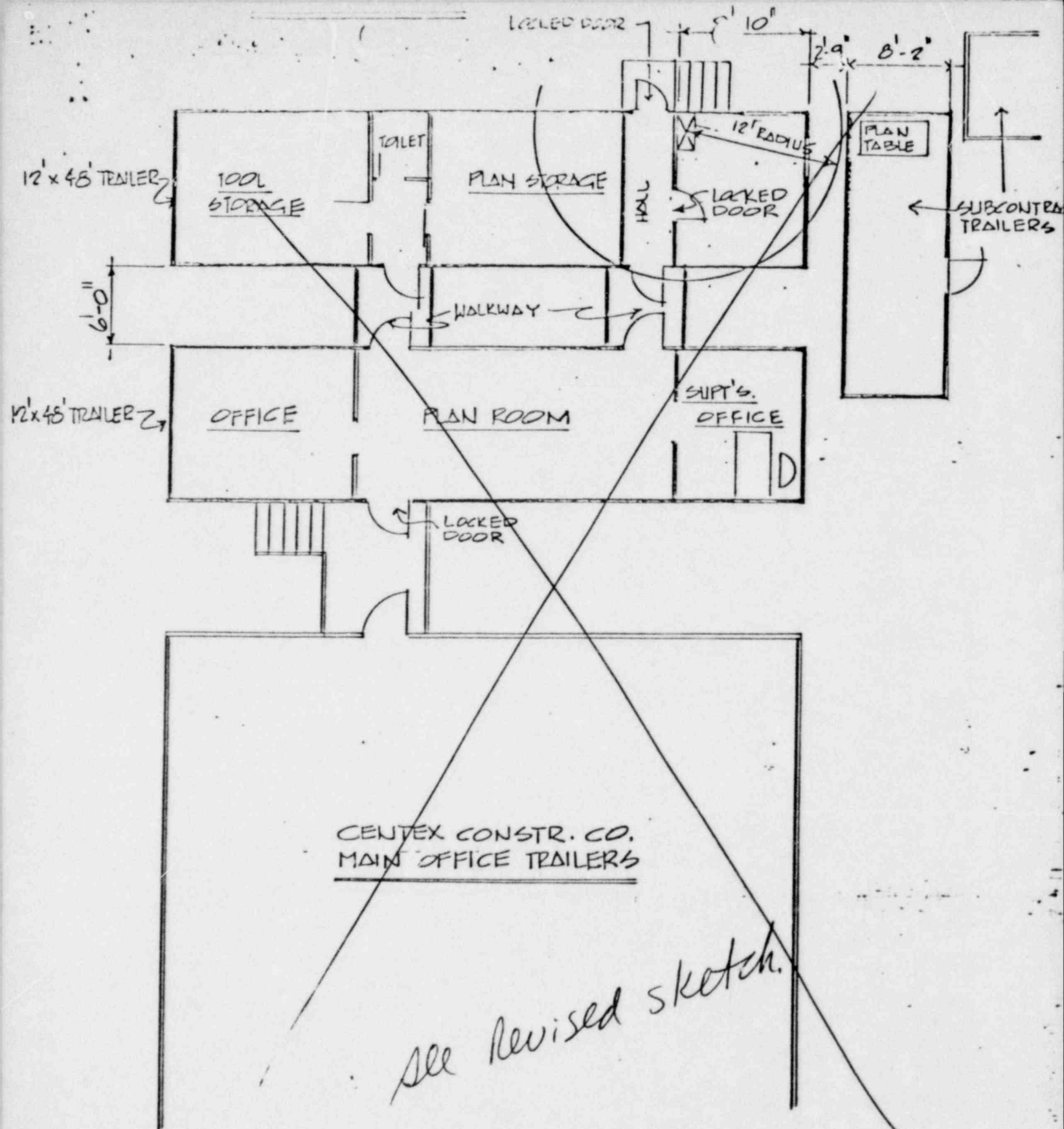


17. EXPERIENCE

Don McConnell is a 1972 graduate of Texas A & M University with a B.S. Degree in Building Construction. Work experience includes two (2) years as an architectural draftsman and six (6) years in the field in building construction.

He has no direct experience with the use of radioactive equipment.

He will attend the Troxler two-day training seminar before receiving the Troxler 3411-B Density Machine.



*See Revised sketch.*

PROPOSED STORAGE

for  
 TROXLER 3411 B NUCLEAR DENSITY MACHINE  
 RADFORD ARMY AMMUNITION PLANT  
 RADFORD VIRGINIA

SCALE 1"=10'

2543

**CENTEX CONSTRUCTION COMPANY, INC.**  
POST OFFICE BOX 20419 • DALLAS, TEXAS 75220 • TELEPHONE (214) 357-1891

PLEASE ADDRESS REPLY TO:

November 26, 1980 P. O. BOX 3697  
RADFORD, VA. 24141

Material Licensing Branch  
Division of Fuel Cycle & Material Safety  
Nuclear Regulatory Commission  
Washington, D. C. 20555  
Mail Control No. 05256

Attention: Michael E. Wangler

RE: Contract No. DAC 87-80-C-0171  
Continuous Automated Mule-base  
Line (Hybrid)  
Radford Army Ammunition Plant  
Radford, Virginia

SUBJ: Application for By-product  
Material License - Industrial

Gentlemen:

Reference is made to your letter of November 5, 1980, regarding our application for a radioactive materials license regarding additional information you require to complete our application processing.

Under Item 1 of our application, our permanent address will be Centex Construction Company, Inc. - 2947 Gallows Road - Falls Church, VA 22042 and at temporary jobsites anywhere the NRC maintains jurisdiction. Our current location is at the Radford Army Ammunition Plant, Radford, VA - CAMBL Project.

Under your Item 14E regarding maintenance on gauges involving removal of source holder, we do not intend at this time to engage in our own repair work on the Troxler Model 3411-B Nuclear Density Testing Machine. We may at some future date request authority to do this type of repair work.

As we discussed, we have added two persons to our staff who will be performing tests with this machine. John M. Strickler and William E. Thompson have completed the Troxler Electronics Laboratories, Inc. training seminar.

Attached is a plan showing our storage area should this machine ever be stored at our home office. Should you have any further questions or require additional information, please advise.

Very truly yours,  
CENTEX CONSTRUCTION COMPANY, INC.

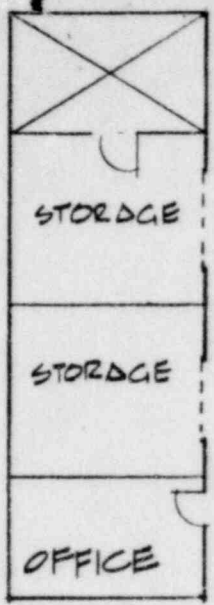
*Donald P. McConnell*

Donald P. McConnell  
Chief of Quality Control

80-2240-54  
DPM:sm

cc: Dallas Office  
Merrifield Office

COPIES SENT TO OFF. OF  
INSPECTION AND ENFORCEMENT



← NUCLEAR DENSITY GAUGE STORAGE AREA

STORAGE YARD

FENCE

GATE

PARKING LOT

CENTEX CONSTRUCTION CO.  
OFFICE BUILDING

2947 GALLOW'S ROAD  
FALLS CHURCH, VA. 22042

STORAGE  
YARD

PARKING LOT

GALLOW'S ROAD  
FALLS CHURCH, VIRGINIA