

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, 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 byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

301894

Licensee		
1. VS Engineering Incorporated		3. License Number 13-26759-01
2. 4275 North High School Road Indianapolis, IN 46254		4. Expiration Date November 30, 2001
		5. Docket or Reference No. 030-34255
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Cesium-137	A. Sealed Source (Troxler Dwg. No. A-102112)	A. No single source to exceed 10 millicuries
B. Americium-241	B. Sealed Source (Troxler Dwg. No. A-102451)	B. No single source to exceed 50 millicuries
C. Californium-252	C. Sealed Source (Troxler Dwg. No. A-105560)	C. No single source to exceed 66 microcuries
9. Authorized Use:		
A. To be used in Troxler Model 3400 Series and Troxler Model 4640 Moisture/density gauging devices.		
B. To be used in Troxler Models 3400 Series and Troxler Model Nos. 3216 and 3218 Moisture/density gauging devices.		
C. To be used in Troxler Models 3430-M and 3440-M Moisture/density gauging devices.		

CONDITIONS

10. Licensed material may be used at the licensee's facilities located at 8000 North U.S. 27, Decatur, Indiana and at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
11. The Radiation Safety Officer for this license is Narendra J. Patel.

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**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

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12. Licensed material shall only be used by, or under the supervision and in the physical presence of, Narendra J. Patel or individuals who have successfully completed the manufacturer's training program for gauge users, have been instructed in the licensee's routine and emergency operating procedures and who have been designated by the Radiation Safety Officer.
13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
- B. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- C. Sealed sources need not be leak tested if they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- D. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Nuclear Materials Safety Branch, 801 Warrenville Road, Lisle, Illinois 60532-4351. The report shall specify the source involved, the test results, and corrective action taken.
- E. The licensee is authorized to collect leak test samples for analysis by Troxler. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
14. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee.

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15. When performing tests at temporary job sites, the authorized user shall not leave the moisture/density gauge unattended. Upon completion of tests the device shall be locked in the licensee's vehicle or a secure building to prevent unauthorized use, loss, or theft.
16. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.
17. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
18. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage, or when not under the direct surveillance of an authorized user.
19. Any cleaning, maintenance, or repair of the gauge(s) that requires removal of the source rod shall be performed only by the manufacturer or by other persons specifically licensed by the Commission or an Agreement State to perform such services.
20. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.
21. The licensee may not possess and use materials authorized in Items 6, 7, and 8 until:
  - a. The licensee has constructed the facilities and obtained the equipment described in the application and supporting documentation; and
  - b. The U. S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Materials Licensing Branch, 801 Warrenton Road, Lisle, IL 60532-4351 has been notified that activities authorized by the license will be initiated.
22. Within 30 days of the date of a decision not to complete the facility, acquire equipment, or possess and use authorized material, the licensee must notify the Commission in writing, of the decision.

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23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated September 25, 1996; and
- B. Letter dated October 23, 1996.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date 11/23/96

By James Mulhoney  
Nuclear Materials Licensing Branch, Region III

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(FOR LFMS USE)  
INFORMATION FROM LTS

BETWEEN:

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

Program Code: \_\_\_\_\_  
Status Code: 3  
Fee Category: \_\_\_\_\_  
Exp. Date: 0  
Fee Comments: \_\_\_\_\_  
Decon Fin Assur Req'd: \_\_\_\_\_  
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LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: VS ENGINEERING INCORPORATED  
Received Date: 960930  
Docket No: 3034255  
Control No.: 301894  
License No.:  
Action Type: New Licensee

2. FEE ATTACHED

Amount: 530  
Check No.: 9334

3. COMMENTS

Signed \_\_\_\_\_  
Date 10/3/96

*D. Hersey*

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered ☒ )

1. Fee Category and Amount: 3P

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

Amendment \_\_\_\_\_  
Renewal \_\_\_\_\_  
License ☒

3. OTHER \_\_\_\_\_

Signed \_\_\_\_\_  
Date \_\_\_\_\_

OCT 28 1996

Log	OCT 3 III
Remitter	
Check No.	9334 / 9391
Amount	\$530 + \$20
Fee Category	3P
Type of Fee	App
Date Check Rec'd	10/1/96
Date Completed	10/2/96
By:	SC

1996 OCT -7 PM 1:42

(10-94)  
10 CFR 30, 32, 33  
34, 35, 36, 39 and 40

## APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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.

## APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

## ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

## IF YOU ARE LOCATED IN:

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

LICENSING ASSISTANT SECTION  
NUCLEAR MATERIALS SAFETY BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLFENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

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

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
101 MARQUETTA STREET, NW, SUITE 2900  
ATLANTA, GA 30323-0199

## IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
801 WARRENVILLE RD.  
LISLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,  
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,  
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,  
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-2064

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 JURISDICTIONS.

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

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A. NEW LICENSE

B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_

C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

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

VS ENGINEERING, INC.  
4275 North High School Road  
Indianapolis, IN 46254

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

Gauges will be used and possessed at temporary job sites  
in the United States subject to NRC's authority (See  
Item 9 for further description for location(s))

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

Narendra J. Patel

## TELEPHONE NUMBER

317-293-3542

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 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 3P

AMOUNT  
ENCLOSED \$530.00

## 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, 36, 39 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.

## CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

Bhagwan C. Patel/President

## SIGNATURE

Bhagwan C. Patel

## DATE

9-25-96

## FOR NRC USE ONLY

RECEIVED

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
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APPROVED BY

DATE

SEP 30 1996

REGION III 301894



# VS ENGINEERING, INC.

4275 North High School Road, Indianapolis, Indiana 46254

Phone: (317) 293-3542

FAX (317) 293-4737

September 25, 1996

Mr. Charles F. Gill  
Region III  
U.S. Nuclear Regulatory Commission  
801 Warrenville Road  
Lisle, IL 60532

Re: Application for Material License

Dear Mr. Gill:

Transmitted is a completed application along with the check of \$530.00 for License Fees for your review and granting of a license.

We request you to expedite our application and issue a license at your earliest convenience because in July 1996 we started a large construction project consisting of earth work, paving, drainage, etc. This project requires extensive field testing and without the Nuclear Gauge, manual tests may impact our project scheduled time.

Therefore we urge you to grant our request as soon as possible.

If you have any questions or need additional information, please call me at (317) 293-3542 or fax (317) 293-4737.

Very truly yours,

VS ENGINEERING, INC.

Bhagwan C. Patel, P.E.  
President

BCP/lcw

RECEIVED  
SEP 30 1996  
REGION III

SEP 30 1996

### ITEM 5 - RADIOACTIVE MATERIAL

<b>RADIONUCLIDE</b>	<b>SEALED SOURCE</b>	<b>MAX. ACTIVITY/SOURCE</b>
1. Cs-137	Troxler A-102112	9 mCi
2. AM-241:Be	Troxler A-102451	44 mCi
3. Cf-252	Troxler A-105560	66 $\mu$ Ci

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### **AUTHORIZED USES**

The nuclear material sources described above will be used in Troxler Electronics Laboratories moisture-density gauges as described below: (number designator conforms to number designators noted above)

1. For use in the Troxler Model 3400, 4640, series gauges to measure the moisture/density of soils, aggregates and construction materials.
  2. For use in a Troxler Model 3400, 3216, 3218 series gauges measuring hydrogen with relation to moisture content of construction/building materials.
  3. For use in Troxler 3430-M and 3440-M series gauges measuring hydrogen with relation to moisture content of construction materials.
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### **POSSESSION LIMIT COMMITMENT**

We will confine our possession of licensed material to quantities such that we will not exceed the applicable limits in 10 CFR 30.35 (d).

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### **DATA ON REGISTRATION CERTIFICATES**

<b><u>MANUFACTURER</u></b>	<b><u>REGISTRY NUMBER</u></b>	<b><u>MODEL NO.</u></b>
Troxler Electronics Labs 3008 Cornwallis Road Research Triangle Park North Carolina 27709	NC-646-D-130-S	3400 Series, 34XX-M

**ITEM 6 - PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED**

The purposes for which the gauging devices VS ENGINEERING, INC. wants to possess will be used for measuring moisture content and density of soils, aggregates and construction materials. In order for gauging devices to be used safely, the devices will be used only for the purposes for which the device was designed and in accordance with the manufacturer's recommendations for use.

The gauging devices for which VS ENGINEERING, INC. wants to possess will not be lowered into the ground more than 3 feet.



## ITEM 7 - RADIATION SAFETY OFFICER

### **I. VS ENGINEERING, INC. RADIATION SAFETY OFFICER**

Narendra J. Patel has been designated as the company Radiation Safety Officer.

### **II. LIST OF EDUCATION, EXPERIENCE AND TRAINING OF NARENDRA J. PATEL**

#### **EDUCATION**

High School	Graduated 1969 Baroda, India
College	B.S., Civil Engineering, 1976 M.S. University, Baroda, India

#### **EXPERIENCE**

Project Engineer Longardner & Associates Indianapolis, Indiana	1977 to 1978
Project Engineer Commonwealth Engineers, Inc. Greenwood, Indiana	1978 to 1979
Project Engineer CRS Serrine, Inc. Milwaukee, Wisconsin	1979 to 1981
Project Engineer/Construction Supervisor VS Engineering, Inc. Indianapolis, Indiana	1981 to Present

#### **TRAINING**

Nuclear Gauge Operator Training Course	Attended on April 5, 1990 Troxler Electronics Laboratories Indianapolis, Indiana
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**NOTE:** The Nuclear Gauge Operator Training Course meets all of the criteria designated in part I of the Draft Regulatory Guide DG-0003 by covering the following topics:

1. Radiation Physics (0.5 hours)
  - A. Atomic and Subatomic Particles
  - B. Radioactivity and Types of Radiation
  - C. Sources of Radioactivity
  - D. Isotopes and Periodic Table
  - E. Units of Radiation Measurement and Half-Life
2. Radiation Safety (1 hour)
  - A. Biological Effects of Radiation
  - B. Occupational Dose Limits
  - C. As Low as Reasonably Achievable (ALARA)
  - D. Methods to Reduce Dose
  - E. Personnel Monitoring
3. Regulatory Requirements (1.5 hours)
  - A. Licensing
  - B. Storage of Licensed Materials
  - C. Constant Control and Surveillance of Radioactive Materials not in Storage
  - D. Personnel Monitoring
  - E. Leak Testing
  - F. Inventory
  - G. Maintenance
  - H. Operating and Emergency Procedures
  - I. Audits
  - J. Record keeping
  - K. Reciprocity
  - L. Disposal
  - M. Incidents
4. Transportation (0.5 hour)
  - A. Requirements in 10 CFR 71.5 and 49 CFR
  - B. Transportation of Licensed Material in Vehicles
  - C. Shipping by Common Carrier
5. Gauge, Theory, Operation and Field Training (3.5 hours)
6. Written Test and Review (0.5 hour)

**NOTE 1:** Mr. Patel scored a perfect score on the written test on questions that were not provided before the test. A copy of the Certification issued by Troxler Electronics Laboratories, Inc. is attached.

**NOTE 2:** The instructor for this course was James L. Wandell of Troxler electronics Laboratories, Inc. His qualifications conform to requirement of Part II of Appendix D of Draft Regulatory Guide DG-0008.

### **III. DESCRIPTION OF THE DUTIES AND RESPONSIBILITIES OF THE RSO**

- A. VS ENGINEERING, INC. commits that Narendra J. Patel, Radiation Safety Officer, will have the authority to stop operations that he considers unsafe. VS ENGINEERING, INC. also commits that Mr. Patel will have sufficient time so that he will be able to fulfill all duties and responsibilities to ensure that radioactive materials are used only by authorized individuals in a safe manner.
- B. VS ENGINEERING, INC. commit that Bhagwan C. Patel, President, will request a report every year from Narendra J. Patel, Radiation Safety Officer, to determine;
  - 1. that he is in possession of the most recent regulations,
  - 2. has had the opportunity to review all new and/or revised regulations, and
  - 3. revised or added to VS ENGINEERING, INC.'s procedures to ensure compliance with any regulation changes.
- C. A copy of VS ENGINEERING, INC's organization chart is attached.
- D. Narendra J. Patel's duties and responsibilities as the VS ENGINEERING, INC. Radiation Safety Officer will be those listed in Appendix C of the Draft Regulatory Guide DG-0008.

# TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

NARENDRA J. PATEL

of

VS ENGINEERING, INC.

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.  
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

## Radiological Safety

1. Principles and practices of radiation protection.
2. Leak testing procedures.
3. Mathematics and calculations basic to the use and measurement of radioactivity.
4. Biological effects of radiation.
5. Radioactivity measurement standardization and monitoring techniques and instruments.
6. Accident and incident procedures.
7. Procedures for nuclear gauge storage and transportation.
8. General safety precautions.

## Gauge Operation

1. Instrument theory
2. Operating procedures
3. Maintenance
4. Field application
5. Gauge calibration

  
INSTRUCTOR

APRIL 5, 1990

DATE

No 29453

W.F. TROXLER

PRESIDENT

**VS ENGINEERING, INC.  
OFFICERS**

**Bhagwan C. Patel, P.E., President  
Hansa B. Patel, Secretary/Treasurer**

**PRESIDENT**

**Bhagwan C. Patel, P.E.**

**RSO**

**Narendra J. Patel**

**VS ENGINEERING, INC. ORGANIZATIONAL CHART**



## **ITEM 8 - TRAINING PROVIDED TO OTHER USERS**

### **A. INITIAL OPERATOR TRAINING**

Each individual that will operate the nuclear gauge will complete the Troxler Nuclear Gauge Training Course which conforms to Part I of Appendix D of the Draft Regulatory Guide DG-0008 which will be taught by an instructor who's qualifications meet the criteria in Part II of Appendix D of Draft Regulatory Guide DG-0008. In addition, each operator will read and understand VS ENGINEERING, INC.'s radiation safety procedures; and be approved by our Radiation Safety Officer. Copies of each individual's training certificate will be maintained on file.

### **B. REFRESHER TRAINING**

At intervals not exceeding one year, each nuclear gauge operator will receive refresher training by the Radiation Safety Officer or an instructor who's qualifications meet the criteria in Part II of Appendix D of Draft Regulatory Guide DG-0008. This refresher training will include (1) participation in "dry runs" of VS ENGINEERING, INC.'S emergency procedures and a review of applicable regulations and/or license conditions, (2) DOT requirements, (3) changes in applicable licenses and regulations, (4) deficiencies identified during the performance of annual audits of the radiation safety program, and (5) review of any applicable NRC Bulletins, Notices, or articles in NRC's newsletters.

## ITEM 9 - FACILITIES

### A. Status of the Storage Location

VS ENGINEERING, INC. will store the nuclear gauge(s) at an existing field officer trailer.

### B. General Location of the Storage Facility

The general location of the Storage Facility is VS ENGINEERING, INC.'s construction field office trailer located at 8000 North U.S. 27, Decatur, Indiana. The general surrounding area is agricultural. The Radiation Safety Officer, Narendra J. Patel, conferred with Decatur City officials and determined that there are no ordinances or zoning laws that would prohibit the storage of licensed materials at the noted location.

The reason for storing this gauge at the use facility and not in the home office listed in Item 2 is that the usage location is approximately 130 miles from the home office location. This construction field office location will be utilized by VS ENGINEERING, INC. at least until the fall of 1997. When this office is closed, VS ENGINEERING, INC. will either;

1. transfer the leased nuclear gauge(s) in its possession back to the possession of the manufacturer,
2. transfer the gauge(s) to an organization with the proper NRC Sealed Source Material Licenses,
3. amend the Item 3 location and Item 9 facility description and move the gauge(s) to another construction site, or
4. amend the Item 3 location and Item 9 facility description and move the gauge(s) to VS ENGINEERING, INC.'s main office in Indianapolis, Indiana.

All records required by the NRC will be maintained by the Radiation Safety Officer, Narendra J. Patel, at the home office in Indianapolis, Indiana and copies of records will be maintained at the construction field office location in Decatur, Indiana.

VS ENGINEERING, INC. will ensure compliance with 10 CFR 20.1301 by requiring the RSO to make an initial survey of radiation levels at unrestricted areas surrounding the restricted storage location with a radiation survey meter when gauge(s) are first placed in storage and at last quarterly thereafter and logging this data. VS ENGINEERING, INC. will also require that the RSO log data from additional radiation level surveys taken when/if the number of gauges stored in the restricted storage location changes.

### C. Description of the Storage site at the Use Facility & Security Precautions at this Facility

The nuclear gauge(s) will be stored in the original manufacturer's locked case in a locked (restricted) storage room (displaying the required warnings) on the storage room door within the construction field office trailer when not in use. The construction field office trailer is secured when uninhabited by padlocks and door locks on all exterior doors with bars on the doors and windows. The restricted storage location within this storage room

is more than fifteen (15) feet away from any occupied workstations. A scale drawing illustrating the floor plan of this construction office trailer is attached to this application.

D. Securing Gauges in Vehicles

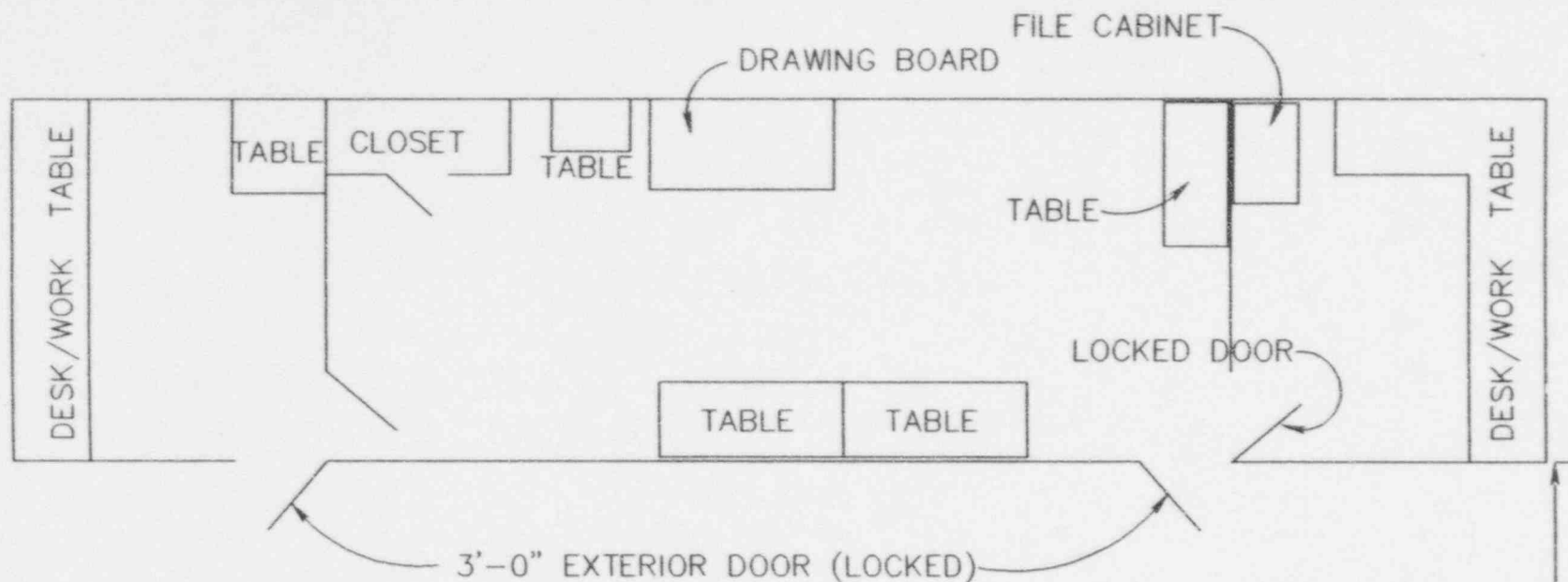
All possible means shall be provided to ensure that the equipment is secured while in the transporting vehicle and that the equipment is placed as far as possible from the passenger compartment in the vehicle when traveling in order to minimize radiation exposure to the operator/passenger(s). When transporting within an enclosed vehicle (van), the vehicle will be locked at all times and the gauge (secured within the locked manufacturers travel case) shall be securely locked to the truck bed with a cable or chain and padlock and will be kept out of sight. When transporting in an open vehicle (pickup truck), the gauge (secured within the locked manufacturer's travel case) shall be securely locked to the truck bed with a cable or chain and padlock.

1. The gauge will only be transported in the Troxler transportation case. The DOT requires that the gauge be transported in a properly labeled carrying case.
2. At all times during transport, the operator will have a properly completed Bill of Lading for each gauge.
3. At all times during transport, the operator will have a copy of VS ENGINEERING, INC.'s Sealed Source Nuclear Materials License.

E. Method of Maintaining Surveillance at Job Sites

1. When the gauge is in the field, the authorized operator must maintain control over the gauge at all times. The gauge will never be left unattended or out of plain view of the authorized operator. While in use, the authorized operator will require that all unauthorized observers (i.e., those not wearing TLDs or film badges) stay at least fifteen (15) feet from the gauge.
2. Between uses in the field at times when the operator is not able to maintain constant surveillance, the gauge will be locked in the manufacturer's transportation case and secured in the operator's vehicle (see Item 9.C). When the gauge is not going to be used for any extended period of time (such as lunch or breaks), it must be stored in the locked manufacturer's transportation case and returned to the construction office trailer and secured in the storage room (see Items 9.A and 9.B).

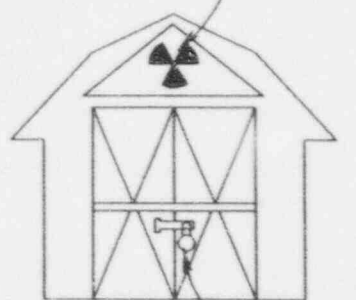
F. The nuclear gauge(s) will not be stored at a residence.



RADIO ACTIVE SIGN

# FIELD OFFICE TRAILER DECATUR, IN

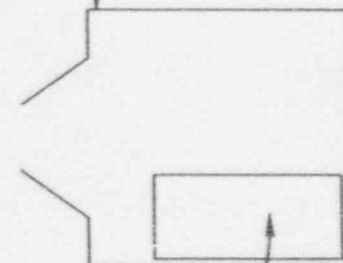
SCALE 1"=6'



LOCK

ELEVATION

NOTE: BARN WILL BE  
LOCKED AND THE  
RADIO ACTIVE SIGN  
WILL BE POSTED  
ON THE BARN.



NUCLEAR GAGE STORAGE BOX

## ITEM 10 - RADIATION SAFETY PROGRAM

VS ENGINEERING, INC.'s Radiation Safety Officer, Narendra J. Patel, will assume the duties and responsibilities to ensure that all terms and conditions of the license are being met and that the information contained in the license is up-to-date.

### A. Personnel Monitoring Program

1. The Radiation Safety Officer will ensure that only authorized individuals wearing personnel monitoring equipment (TLD) will be allowed to enter the restricted storage area within the use storage site (See Items 9.A & 9.B) where they may receive a dose in excess of 10% of the specified dose specified in 10 CFR 20.120(a), 10.1207, and 20.1208.

2. When the gauge is in use or in possession of the authorized operators, they will be required to wear personnel monitoring equipment (TLD) at all times.

#### a. Personnel Monitoring Equipment

Personnel monitoring equipment will consist of thermoluminescent luminescent dosimeters (TLD) capable of measuring Beta, Gamma, X-Ray, and Neutron emissions on a quarterly exchange period. These meters will be obtained from the following supplier as required by 10 CFR 20.1501:

TLD Monitoring Service  
Troxler Electronics Laboratories  
3008 Cornwallis Road  
Research Triangle Park  
North Carolina, 27709

### B. Radiation Detection Instruments

At each job site, we will have at least one survey instrument capable of measuring between 1 microsievert per hour (0.1mR/hr) and 1 millisievert per hour (100 mR/hr). This instrument will be used to perform surveys after an incident. Each survey instrument will be calibrated by the manufacturer at intervals not to exceed 6 months. Before using a survey instrument, we will check the response of the instrument with a dedicated check source that was supplied with the instrument and, if the instrument does not respond properly, we will not use the instrument until it is repaired and operable or until we obtain an operable instrument.

The Survey Instrument we plan to use is a Troxalert™ Radiation Survey Meter which is capable of detecting Alpha, Beta, Gamma, and X-Ray radiation with a calibration based on the gamma emissions from a Cesium 137 source traceable to NIST with a sensitivity range from 0  $\mu$ Sv/hr to 1000  $\mu$ Sv/hr (0 mr/hr to 100 mr/hr). This survey instrument will be



purchased from and serviced by:

Troxler Electronics Laboratories  
3008 Cornwallis Road  
Research Triangle Park  
North Carolina, 27709

VS ENGINEERING, INC. does not plan to perform gauge servicing that requires removal of the source from its shielded position or removal for the source rod from the gauging device.

C. Leak Testing

Leak tests will be performed by the Radiation Safety Officer utilizing a Troxler Model 3880 Leak Test Kit following the supplier's instructions for collecting the test sample. The supplier of the test kit will be:

Troxler Electronics Laboratories  
3008 Cornwallis Road  
Research Triangle Park  
North Carolina, 27709  
License Number: NC 032-0182-1

The supplier will analyze the test sample employing a state-of-the-art Baird Polyspec Research Nuclear Spectrometer Nidek #987514 utilizing a Baird Atomic Scintillation Probe Model #062422 that is calibrated with NIST traceable sources of Cs-137, Cl-136, and Am-241 that provides a precise analysis of any radiation contamination present on the sample. Troxler will request a retest for activity between 0.00005 and 0.005 microCuries. Troxler will immediately notify VS ENGINEERING, INC. of activity greater than 0.005 microCuries and advise that the sealed sources be removed from service. A perpetual record of all leak test is maintained by Troxler and duplicates of the test results are available. These tests will be processed within 24 business hours by Troxler after receipt, and immediate notification of problems detected.

Leak tests on all gauges will be performed and logged at a maximum of six (6) month intervals.

D. Inventories

The Radiation Safety Officer will conduct inventories, at intervals not to exceed six (6) months, to account for all sealed sources and devices received and possessed under the license. VS ENGINEERING, INC. will maintain records for at least three (3) years from the date of the inventory.

These inventory records will include (1) the radionuclide and amount (in units of

becquerels or curies) of byproduct material in each sealed source; (2) the manufacturer's name, model number, and serial number (if appropriate) of each device containing byproduct materials; (3) the current location of each sealed source and device; and (4) the date of the inventory.

E. Maintenance

In accordance with 10 CFR 30.34(e), all maintenance procedures performed by the Radiation Safety Officer or authorized operators (such as cleaning) will always be performed with the radioactive source in the safe shielded position in accordance with the manufacturer's directions or recommendations. More extensive maintenance that requires removal of the source from its shielded position or removal of the source rod from the device will be performed by the manufacturer.

F. Transportation of Devices to Field Locations

The Radiation Safety Officer will maintain copies of applicable DOT regulations and will develop and implement procedures for complying with applicable DOT regulations.

G. Operating and Emergency Procedures

1. VS ENGINEERING, INC. commits to having and implementing operating and emergency procedures, as described in correspondence with the Nuclear Regulatory Commission.
2. VS ENGINEERING, INC. commits to providing a copy of our nuclear gauge operating and emergency procedures to all users of gauging devices before they begin using the gauges.
3. VS ENGINEERING, INC. commits to having a copy of our operating and emergency procedures at each job site.
4. A copy of VS ENGINEERING, INC.'s operating and emergency procedures are attached to this application.

H. Annual Audit of Radiation Safety Program

1. The annual audit of VS ENGINEERING, INC.'s radiation safety program will be conducted by our Radiation Safety Officer, Narendra J. Patel, who's qualifications are listed in Item 7.
2. The scope and extent of the audit will comply with the requirements as described in Appendix 1 of the Draft Regulatory Guide DG-0008.
3. VS ENGINEERING, INC. commits to conduct audits at intervals not to exceed

12 months and to maintain records of the audits for at least 3 years after the record is made.

4. VS ENGINEERING, INC. management commits to review the documented results of the audit promptly after the annual audit is completed.
5. VS ENGINEERING, INC. commits to taking prompt action to correct deficiencies identified during audits and to inform all personnel (including those at all company locations and covered under any other NRC licenses that VS ENGINEERING, INC. may secure) of the deficiencies and the actions management expects its personnel to take to avoid similar deficiencies.

I. Financial Assurance and Record Keeping for Decommissioning

1. In compliance with 10 CFR 30.35, we will adhere to any conditions requiring VS ENGINEERING, INC. to limit its possession of gauges to quantities not requiring financial assurance for decommissioning.
2. In compliance with 10 CFR 30.35(g), VS ENGINEERING, INC. commits to recording and maintaining information important to decommissioning. These records will include information related to spills, leaking sources, or any other unusual incidents that involve the spread of contamination. These records will be kept on file at the use facility identified in Item No. 3. If there are no events involving spills, leaking sources, or spread of contamination, then there will be no records to maintain for decommissioning.

# **VS ENGINEERING, INC.'S STANDARD OPERATING AND EMERGENCY PROCEDURES FOR NUCLEAR GAUGES**

All operators of nuclear gauging equipment employed by VS ENGINEERING, INC. are to thoroughly understand and operate in conformance with the *Standard Operating and Emergency Procedures* contained within this guide at all times.

## **OPERATING PROCEDURES**

1. Before removing the gauge from its authorized storage facility, the authorized operator is to check to make sure that the gauge source rod is in the shielded, locked position, then lock the transport case.
2. The authorized gauge operator is to sign out the gauging equipment in a log book, stating the name of the authorized operator who will be responsible for the gauge, dates and times of use, and the temporary job site where the gauge will be used.
3. **NEVER LEAVE THE GAUGE UNATTENDED WHILE IN THE OPERATOR'S CUSTODY!**
4. Follow all applicable Department of Transportation (DOT) requirements when transporting the gauge on a public highway or street, including:
  - A. Certificate of Competent authority.
  - B. Copy of VS ENGINEERING, INC.'s NRC material license.
  - C. Emergency Response Sheet (should include Troxler Electronic Laboratory, Inc. 24-hour emergency response telephone number at 919/839-2676 or the NRC's Emergency Operations Center at 301/816-5100).
  - D. Bill of Lading conforming to 49 CFR (172, Subpart C).
  - E. Gauge must be padlocked within the manufacturer's properly labeled transportation case and properly secured (locked) to the vehicle as far as possible from the vehicle's occupants.

**NOTE:** There is a common misconception that there is one set of requirements for shipment via a common carrier and another set of requirements for a nuclear gauge operator who is transporting the gauge from the storage location to the work location. The rules of 49 CFR apply any time a nuclear gauge is being transported by motor vehicle on a public highway, regardless of the carrier. Transportation of Radioactive Material requires conformance with U.S. Department of Transportation (USDOT) and the International Atomic Emergency Agency (IAEA) regulations.

5. Never unnecessarily expose the nuclear source rod. The operator should not touch the source rod with his/her fingers, hands, or any part of the body. When the nuclear gauge is not in use, the source rod is to be in the shielded position after each measurement is made.

6. Each operator will wear his/her assigned thermoluminescent dosimeter (TLD) or film badge when using the gauge.
7. No operator will wear a TLD or film badge assigned to another operator.
8. When TLDs or film badges are not in use the operator is to store them in the assigned nuclear free storage area only. Gauges are not to be stored near the gauge storage location.
9. Unauthorized personnel (including authorized personnel who are not wearing their TLD or film badge) are to be kept a minimum of 15 feet away from the gauge while it is in use (i.e. when the gauge source rod is in the unshielded position).
10. Always maintain constant surveillance and immediate control of the gauge when it is not in the storage location. Constant surveillance and immediate control does not include being stored in the passenger compartment of a locked vehicle or locked in the bed of a pickup truck at those times such as when the authorized operator is at lunch, on break, or during temporary stays at motels/hotels. The nuclear gauge, however, may be temporarily secured by locking in the trunk of a passenger vehicle or out of sight within a locked van while at lunch or on break. When at lunch or on break, if the authorized operator will be unable to exercise constant surveillance and immediate control, he/she must first return the gauge to the storage location.
11. The operator should do everything within his/her power to make the nuclear gauge as visible as possible to operators of heavy equipment or other vehicles at construction sites. When in use, the operator should always "stake and flag" each gauge with a flag tall enough to be seen by heavy equipment operators.
12. Never look under the gauge when the source rod is in the unshielded position or when the source rod is being lowered into the ground.
13. After each measurement, the operator is to always return the source rod to the shielded position and lock it there.
14. If the gauge is temporarily not in use while in an operator's possession or control, the gauge should be placed in a secured storage location or returned to the storage facility.
15. At the end of each work shift, the nuclear gauge is to be returned and secured at the storage facility.
16. After the gauge is returned to the storage facility, the authorized operator is to record in the log book his signature, the time and date when the gauge was returned.



## EMERGENCY PROCEDURES

If the source fails to return to the shield position (e.g., as a result of being damaged) or if any other emergency or unusual situation arise (e.g., the gauge is struck by a moving vehicle, is dropped, or is in a vehicle involved in an accident):

1. Immediately secure the area around the gauge to a distance of not less than 15 feet.
2. Prevent unauthorized personnel from entering the area.
3. If any heavy equipment is involved, detain the equipment until it is determined there is no contamination present on the equipment.
4. Notify VS ENGINEERING, INC. personnel of the situation, calling the following company officials in the order listed below:

<u>Name</u>	<u>Position</u>	<u>Work Phone No.</u>	<u>Home Phone No.</u>
Narendra J. Patel	Radiation Safety Officer	(317) 293-3542	(317) 290-0946
Bhagwan C. Patel	President	(317) 293-3542	(317) 297-0798
Nasser Anabtawi	Operator	(219) 728-4173	(219) 484-7209
James Wimmenauer	Operator	(219) 728-4173	(219) 724-4107
Steve Dommer	Construction Supervisor	(219) 728-4173	(219) 724-8917

**NOTE:** This list may be changed or updated as the need arises.

5. Follow the directions provided by the person contacted in step No. 4 above.
6. ONCE AN ACCIDENT OCCURS VS ENGINEERING, INC. (THE LICENSEE) MUST:
  - A. Arrange for a survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation. (This person may be a licensee employee using a survey meter located at the job site or a consultant.)
  - B. Make necessary notifications to local authorities and notify the Nuclear Regulatory Commission as required. (Even if not required to do so, VS ENGINEERING, INC. may report any incident to the NRC by calling the Troxler Electronic Laboratory, Inc. 24-hour emergency response telephone number at 919/839-2676 or the NRC's Emergency Operations Center at 301/816-5100. NRC notification is required when a gauge containing licensed material is lost or stolen or when a gauge is damaged or involved in incidents that result in doses in excess of the dose limits in 10 CFR 20.2203. The attached memorandum from R.E. Cunningham, dated 7/1/93, provides additional guidance.

- C. Consider the timeliness of the reports to the Nuclear Regulatory Commission.
- D. Review the reporting requirements, which are found in 10 CFR 20.2201, 2203 and 10 CFR 30.50.

Attachment: RE Cunningham memo dated 7/1/93

#### **ITEM 11 - WASTE MANAGEMENT**

VS ENGINEERING, INC. commits that disposition of the guage will be by transfer to either another licensee specifically licensed to possess radioactive material or to a licensed disposal facility. If needed, the manufacturer will assist in locating a properly licensed disposal facility.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

July 1, 1993

MEMORANDUM FOR: Those on Attached List

FROM: Richard E. Cunningham, Director  
Division of Industrial and  
Medical Nuclear Safety, NMSS

SUBJECT: REPORTING OF DAMAGED PORTABLE GAUGES

In the fall of 1992, the Office of Enforcement (OE) asked for our view as to whether a licensee must report a damaged moisture-density gauge to NRC and, if so, on what basis. We conducted a detailed analysis of the reporting requirements and recently responded to OE. The purpose of this memorandum is to provide you with our analysis of the requirements.

Whether or not licensees must report damaged moisture-density gauges depends on the extent of damage to the gauge. The requirement to report also depends on the level of radiation in an unrestricted area or doses to individuals resulting from the damaged gauge. The applicable reporting requirements are given in 10 CFR 20.405(a)(1), 20.2203(a), and 30.50(b). The enclosure provides our detailed analysis of the reporting requirements. In summary, reporting is required in most incidents when damage to the gauge results in one of several conditions:

- (1) the protective housing (shielding) is damaged such that the source is not fully shielded, or cannot be moved into the shielded position (10 CFR 30.50);
- (2) the source is left exposed in an unrestricted area such that the radiation levels exceed 20 mrem in any one hour (10 times the limit of 2 mrem in any one hour) (10 CFR 20.405 and 20.2203); or
- (3) the incident results in doses in excess of limits in Part 20 or in the license (10 CFR 20.405 and 20.2203).

Please note that the method of reporting and the associated time for the licensee to make the report are different for conditions (1), (2), and (3) above.

In a more serious case involving a broken sealed source that leads to contamination, reporting within 24 hours is required (10 CFR 30.50(b)(1)). Likewise, in a case involving a sealed source that causes, or threatens to cause, serious overexposures, immediate notification or 24-hour notification and subsequent written reporting may be required (20.403, 20.2202, and 20.2203). However, these situations are beyond the scope of most damaged gauge incidents and will not be discussed here. Finally, immediate telephonic reporting of loss or theft of a moisture-density gauge is required in most cases, and a written report within 30 days is required in nearly all cases.

Regional Division Directors

-2-

We hope that this clarifies the reporting requirements and their applicability to damaged moisture-density gauges. We are filing this memorandum and enclosure in the Public Document Room and will mail it to several major gauge manufacturers. We also will enter it into the Health Physics Positions database. If you have any questions, please call Scott Moore at 301-504-2314 or Cynthia Jones at 301-504-2629.

Signed by Carl J. Paperiello

Richard E. Cunningham, Director  
Office of Industrial and  
Medical Nuclear Safety, NMSS

Enclosure: As stated

# TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

NASSER ANABTAWI

of

V. S. ENGINEERING

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.  
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

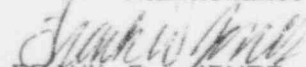
## Radiological Safety

- |  |   |
|--|---|
| 1. Principles and practices of radiation protection.                               | 5. Radioactivity measurement standardization and monitoring techniques and instruments. |
| 2. Leak testing procedures.  | 6. Accident and incident procedures.  |
| 3. Mathematics and calculations basic to the use and measurement of radioactivity. | 7. Procedures for nuclear gauge storage and transportation.                             |
| 4. Biological effects of radiation.  | 8. General safety precautions.  |

## Gauge Operation

- |                         |                      |
|-------------------------|----------------------|
| 1. Instrument theory    | 4. Field application |
| 2. Operating procedures | 5. Gauge calibration |
| 3. Maintenance          |                      |

CERTIFICATE #: 074462

  
FRANK D. JONES  
INSTRUCTOR

8/13/96  
DATE

WILLIAM F. TROXLER  
PRESIDENT



THIS DOCUMENT MAY BE USED TO VERIFY TRAINING REQUIRED BY 49CFR172, SUBPART H.

NASSER ANABTAWI

NAME

8/13/96

TRAINING DATE

Training materials used are part of the Troxler Electronic Laboratories, Inc. Nuclear Gauge Safety Training Program. Topics covered apply to recognition, labeling, preparation for transport, transportation, regulatory compliance, emergency response, personal protection, and accident avoidance only as they apply to radioactive White I and Yellow II portable gauging devices.

TROXLER ELECTRONIC LABORATORIES, INC.  
3008 CORNWALLIS ROAD  
P.O. BOX 12057  
RESEARCH TRIANGLE PARK, NC 27709

FRANK D. JONES  
INSTRUCTOR

I hereby certify that the above named employee has been properly trained and tested in accordance with the requirements of 49CFR172, subpart H.

\_\_\_\_\_  
COMPANY OFFICIAL

8/13/98  
EXPIRATION DATE

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
COMPANY AND ADDRESS



# TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

JAMES WIMMENAUER

of

V. S. ENGINEERING

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.  
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

## Radiological Safety

- |  |   |
|--|---|
| 1. Principles and practices of radiation protection.                               | 5. Radioactivity measurement standardization and monitoring techniques and instruments. |
| 2. Leak testing procedures.  | 6. Accident and incident procedures.  |
| 3. Mathematics and calculations basic to the use and measurement of radioactivity. | 7. Procedures for nuclear gauge storage and transportation.                             |
| 4. Biological effects of radiation.  | 8. General safety precautions.  |

## Gauge Operation

- |                         |                      |
|-------------------------|----------------------|
| 1. Instrument theory    | 4. Field application |
| 2. Operating procedures | 5. Gauge calibration |
| 3. Maintenance          |                      |

CERTIFICATE #: 074461

FRANK D. JONES

INSTRUCTOR

8/13/96

DATE

WILLIAM F. TROXLER

PRESIDENT

THIS DOCUMENT MAY BE USED TO VERIFY TRAINING REQUIRED BY 49CFR172, SUBPART H.

JAMES WIMMENAUER

NAME

8/13/96

TRAINING DATE

Training materials used are part of the Troxler Electronic Laboratories, Inc. Nuclear Gauge Safety Training Program. Topics covered apply to recognition, labeling, preparation for transport, transportation, regulatory compliance, emergency response, personal protection, and accident avoidance only as they apply to radioactive White I and Yellow II portable gauging devices.

TROXLER ELECTRONIC LABORATORIES, INC.

3008 CORNWALLIS ROAD

P.O. BOX 12057

RESEARCH TRIANGLE PARK, NC 27709

FRANK D. JONES

INSTRUCTOR

I hereby certify that the above named employee has been properly trained and tested in accordance with the requirements of 49CFR172, subpart H.

\_\_\_\_\_  
COMPANY OFFICIAL

8/13/98

EXPIRATION DATE

\_\_\_\_\_  
\_\_\_\_\_  
COMPANY AND ADDRESS



## LICENSE FEE REQUIREMENTS

LICENSE FEE AND DEBT COLLECTION BRANCH  
DIVISION OF ACCOUNTING AND FINANCE  
OFFICE OF THE CONTROLLER  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001VS ENGINEERING, INC.  
ATTN: BHAGWAN C. PATER  
PRESIDENT  
4275 NORTH HIGH SCHOOL ROAD  
INDIANAPOLIS, INDIANA 46254

## TYPE OF ACTION

- ☒ NEW LICENSE  
☐ RENEWAL OF LICENSE  
☐ AMENDMENT TO LICENSE

REQUESTED DATE

9-25-96

LICENSE NUMBER

CONTROL NUMBER

301894

## I. APPLICATION FEE DUE

Your request for a licensing action is subject to the fee(s) in the category(ies) noted below in accordance with Section 170.31 of the enclosed Federal Register notice. Payment of the fee is required prior to the issuance of the license, renewal, or amendment.

FEE CATEGORY	APPLICATION	RENEWAL	AMENDMENT
3P	\$ 550.00	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$

FEE(s) DUE	\$	550.00
PAYMENT RECEIVED	\$	530.00
AMOUNT DUE	\$	20.00

☐ Your request was received without the prescribed application fee.

☒ We received your Check No. 9334 in the amount of \$ 530.00. Payment of the additional fee noted above is required.

☐ Your request will increase the scope of your license program. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(d)(2).

☐ Your license expired prior to the receipt of your application for renewal. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(a).

MAKE PAYMENT OF THE FEE(S) TO THE U.S. NUCLEAR REGULATORY COMMISSION AND MAIL THE PAYMENT TO THE ADDRESS LISTED AT THE TOP OF THIS FORM. IF WE DO NOT RECEIVE A REPLY FROM YOU WITHIN 30 CALENDAR DAYS FROM THE DATE LISTED BELOW, WE SHALL ASSUME THAT YOU DO NOT WISH TO PURSUE YOUR APPLICATION AND WILL VOID THIS ACTION.

SIGNATURE -- LICENSE FEE ANALYST

LFDCB

LFDCB

SHIRLEY CRUTCHFIELD

10/7/96

## II. FEE NOT REQUIRED

☐ Enclosed is Check No. \_\_\_\_\_ which accompanied your request. The fee is not required because:

☐ We received your Check No. \_\_\_\_\_ in payment of the fee.

☐ The Licensing staff has informed us that your request is to be considered as a continuation of your request dated \_\_\_\_\_, Control No. \_\_\_\_\_.

☐ Your request was combined, prior to review, with your \_\_\_\_\_ request, Control No. \_\_\_\_\_.

## III. CHECK RETURNED

☐ Enclosed is Check No. \_\_\_\_\_ which was returned to us by the bank for:

- ☐ INSUFFICIENT FUNDS  
☐ ACCOUNT CLOSED  
☐ OTHER

MAIL THE REPLACEMENT CHECK TO THE ADDRESS LISTED AT THE TOP OF THIS FORM AND REFERENCE THE ABOVE CONTROL NUMBER.

## IV. LICENSE ISSUED WITHOUT THE REQUIRED FEE

☐ License No. \_\_\_\_\_, Amendment No. \_\_\_\_\_, issued on \_\_\_\_\_ was issued without the required fee being collected. The fee required is noted in Section I of this form.

☐ The scope of your licensed program was increased. Therefore, your request is subject to the application fee(s) noted in Section I of this form. Refer to Section 170.31 and Footnote 1(d)(2).

☐ Because of the urgency of your request, the license was issued without remittance of the prescribed fee noted in Section I of this form.

Distribution:

Pending Fee File

LFARB R/F (2)

OC/DAF/RP  
OC/DAF/SF(LF-3 2.7)  
Region 3

DATE

Oct. 9, 1996

NOV 27 1996

Bhagwan C. Patel  
President  
VS Engineering Incorporated  
4275 North High School Road  
Indianapolis, IN 46254

Dear Mr. Patel:

Enclosed is your NRC Material License Number 13-26759-01 in accordance with your request.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Unless your license has been terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Not possess and use materials authorized in Items 6, 7, and 8, on the license until:
  - a. You have constructed the facilities and obtained the equipment described in the license application and supporting documentation; and
  - b. You have notified the U. S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Nuclear Materials Safety Branch, in writing, that activities authorized by the license will be initiated.
3. Notify NRC, in writing, within 30 days:
  - a. When an authorized user or Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
  - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).

301894



4. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
  - a. When you decide to terminate all activities involving materials authorized under the license; or
  - b. If you decide not to complete the facility, acquire equipment, or possess and use authorized material.
5. Request and obtain a license amendment before you:
  - a. Receive or use byproduct material for a clinical procedure permitted under Part 35 but not permitted by your license issued pursuant to this Part;
  - b. Permit anyone, except a visiting authorized user described in 10 CFR 35.27, to work as an authorized user under the license;
  - c. Change Radiation Safety Officers;
  - d. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
  - e. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
  - f. Change ownership of your organization.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.



B. Patel

-3-

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,

Original Signed By  
James R. Mullauer, M.H.S.  
Health Physicist  
Nuclear Materials Licensing Branch

License No. 13-26759-01  
Docket No. 030-34255

Enclosures:

1. License No. 13-26759-01
2. New License Package

DOCUMENT NAME: M:\13-26759.01

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	DNMS/BII									
NAME	MULLAUER/sjd									
DATE	11/23/96									

OFFICIAL RECORD COPY



# VS ENGINEERING, INC.

4275 North High School Road, Indianapolis, Indiana 46254

Phone: (317) 293-3542

FAX (317) 293-4737

NOVEMBER 1, 1996

Dear Mr. Mullaver:

I apologize for the delay on the following letter. I had originally sent it to your old address at 799 Roosevelt Rd. and the forwarding process had expired.

If you have any questions please contact me.

Sincerely,

Bhagwan C. Patel

RECEIVED

NOV 12 1996

REGION III

pm: 11-8-96

NOV 12 1996



# VS ENGINEERING, INC.

4275 North High School Road, Indianapolis, Indiana 46254

Phone: (317) 293-3542

FAX (317) 293-4737

October 23, 1996

Mr. James Mullauer  
Materials Licensing Section  
799 Roosevelt Rd.  
Glen Ellyn, IL 60137

Re: Additional Information and Revisions for  
VS ENGINEERING, INC.'s Application  
for Material License

Dear Mr. Mullauer:

The additional information that you requested on October 18, 1996 is as follows:

## Item 9 - Facilities

The following additional information is provided on the barn in which the nuclear gauges will be stored:

- One (1) 8'x8' wood frame structure with a shingled roof and interior wood floor.
- Structure will not have any windows or openings of that nature.
- Structure will be anchored and locked at all times.
- Structure will be built on 4"x4" wood foundation with modifications to establish a method of securing the nuclear gauge inside.
- Structure will have appropriate signage indicating radiation.
- Inside of structure will be protected from weather such as rain, snow and ice.
- Structure will be erect and ready for use on or before November 8, 1996.

## VS ENGINEERING, INC.'s Standard Operating and Emergency Procedures for Nuclear Gauges

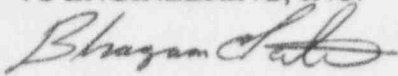
Revise second sentence of Item 5 on page #1 of the Operating Procedures as follows:

"The operator will not touch the source rod with his/her fingers, hands or any part of the body."

If you have any questions or need additional information, please call me at (317) 293-3542 or fax (317) 293-4737.

Very truly yours,

VS ENGINEERING, INC.

A handwritten signature in dark ink, appearing to read "Bhagwan C. Patel", with a stylized flourish at the end.

Bhagwan C. Patel  
President

NJP/sbp



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION III  
801 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4351

October 8, 1996

Narendra J. Patel  
Radiation Safety Officer  
VS Engineering Incorporated  
4275 North High School Road  
Indianapolis, IN 46254

SUBJECT: ACKNOWLEDGEMENT OF CORRESPONDENCE  
(Letter & Application Dated 09/25/96)

Dear Licensee:

In response to your request, we have completed the initial processing, which is an administrative review of your application for a(n):

☒ New License                      ☐ Amendment                      ☐ Renewal  
☐ Termination                      ☐ Auth User (Amendment not required)  
☐ Other \_\_\_\_\_

No administrative deficiencies were identified during this initial review. However, it should be noted that a technical review may identify omissions in the submitted information.

It appears that your request is nonroutine and has been assigned to Gidget Watson for an expedited review. If you should have any questions please contact Ms. Watson at (630) 829-9887.

1. New and amendment actions are normally processed within 90 days, unless we find major deficiencies, or policy issues requiring central program office assistance.
2. Renewal actions are normally processed within 180 days, however, under timely filing (before expiration), you may continue to operate under your existing license.
3. Termination actions are normally processed within 90 days, unless confirmatory surveys following decontamination/decommissioning activities are involved.

A copy of your correspondence has been forwarded to our Licensing Fee and Debt Collection Branch (301/415-6097) for approval of the fee category and amount, if required.

If you have a compelling safety or business-related reason for requesting expedited review, please contact the Materials Licensing Branch at (630) 829-9887. We will try to complete your request as soon as practicable. Any correspondence about this request should reference the control number.

Nuclear Materials Support Branch

Mail Control No. 301894  
License No. 13-26759-01