252959

NRC FORM 313
(1-88)
10 CFR 30, 32, 33, 34, 35 and 40

APPLICATION FOR MATERIAL LICENSE

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires: 5-31-87

-31288

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

FEDERAL AGENCIES FILE APPLICATIONS WITH:

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

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

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

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

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

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

IF YOU ARE LOCATED IN:

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

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

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

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

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

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MAYERIAL 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)*

- [XX] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [ ] C. RENEWAL OF LICENSE NUMBER _____

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

TERRADYNAMICS CORPORATION
Route 1
Aldie, virginia 22001

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

Storage: TERRADYNAMICS CORPORATION
Route 1
Aldie, Virginia 22001

Use: At temporary job sites within a 10-20 mile radius of headquarters

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Ned Mamula

TELEPHONE NUMBER: (703) 327-6500

SUBMIT ITEMS 5 THROUGH 11 ON 8½ 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: 3P
AMOUNT ENCLOSED: $ 230

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 OF CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Ned Mamula	Ned Mamula	Sr. Geologist/President	8/12/89

14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS
- [XX] <$250K
- [ ] $250K–500K
- [ ] $500K–750K
- [ ] $750K–1M
- [ ] $1M–3.5M
- [ ] $3.5M–7M
- [ ] $7M–10M
- [ ] >$10M

b. NUMBER OF EMPLOYEES *(Total for entire facility excluding outside contractors)*: 6

c. NUMBER OF BEDS: N/A

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)*
- [XX] YES
- [ ] NO

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
App	Aug-4-II	3P	9001250374 890907 REG2 LIC30 45-25065-01 PDR	M. Mussina
AMOUNT RECEIVED	**CHECK NUMBER**			**DATE**
$230	1319			8/22/89

PRIVACY ACT STATEMENT ON THE REVERSE

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

ADDENDUM TO APPLICATION FOR MATERIAL LICENCE

TERRADYNAMICS CORPORATION
Route 1
Aldie, Virginia 22001
(703) 327-6500

Item 5 - Radioactive Material

	A. Radioisotope	B. Form	C. Troxler Drawing #	D. Maximum Amount
A.	Cs-137	Special Form	A-102112	Not to exceed 9 mCi per source
B.	Am241:Be	Special Form	A-102451	Not to exceed 44 mCi per source

Item 6 - Material Use

A. For use in a Troxler model 3400 series, or 4640, or 4545, or 3565 portable measuring gauge.

B. For use in a Troxler model 3400 series, or 3216, or 3218 portable measuring gauge.

Item 7 - Radiation Safety Officer

Ned Mamula has been designated as the company Radiation Safety Officer. A copy of his Troxler Nuclear Gauge Training Certificate is attached for your review. The duties of the Radiation Safety Officer are specified in item 10 of this addendum.

Item 8 - Training of Gauge Users

Each individual that will operate the nuclear gauge will complete the Troxler nuclear gauge training course, read and understand our radiation safety procedures; and, be approved by our Radiation Safety Officer. Copies of each individual's training certificate will be maintained on file.

Item 9 - Gauge Storage Area

Attached is a sketch of the area where gauges will be stored when not in use.

Item 10 - Radiation Safety Program

1. **Radiation Safety Officer**

   A. **Ned Mamula** has been designated as the Radiation Safety Officer for TERRADYNAMICS. His duties and responsibilities shall include the following:

      1. 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.

      2. To ensure that the equipment has been leak tested in the required timely manner and that the leak test is performed in the manner prescribed by the equipment manufacturer.

3. To ensure that the use of the equipment is only by individuals that have been authorized by the Radiation Safety Officer and that all users wear personnel monitoring equipment when utilizing the equipment.

4. To maintain the records as required by the license and the regulations. These records shall include personnel exposure records, leak test records and training certificates for all users of the equipment.

5. To ensure that the equipment is properly secured against unauthorized removal at all times when it is not in use.

6. To serve as a point of contact and give assistance in case of emergency such as equipment damaged in the field or theft, and to notify the proper authorities in case of emergency.

7. To ensure that all users have read and understand the radiation safety operating and emergency procedures.

2. Operating Procedures

A. Transportation of Equipment

1. All possible means shall be provided to ensure that the equipment is fully secured in the transporting vehicle and the equipment is away from the passenger compartment. When transporting in an enclosed vehicle (car or van), the vehicle shall be locked. When transporting in an open bed vehicle, the gauge shall be securely fastened and locked to the truck bed.

2. The gauge shall be transported in the TROXLER transportation case. The U.S. Department of Transportation requires that the gauge be transported in a properly labeled carrying case.

3. At all times during transport, the operator shall have a properly completed Bill of Lading for each gauge.

B. Utilization Procedures

1. When the gauge is in the field, the authorized user shall maintain control over the gauge at all times. The gauge shall never be left unattended.

2. When not making measurements, the gauge shall be placed in the transportation case and returned to its permanent storage area as soon as possible. The gauge is to be used for its intended purpose only, i.e., field density and moisture content tests of soils. These procedures will keep radiation exposure to the absolute minimum possible.

3. When using the equipment, the operator shall wear the personnel monitoring device that has been assigned. When not using the equipment, the monitoring device is to be stored in the radiation free area that has been designated in the office.

C. Maintenance and Leak Test Procedure

1. Periodic maintenance will include cleaning the gauge. During any maintenance, the operator must wear the assigned personnel monitoring device.

2. Under NO circumstances will maintenance will be performed in which the radioactive source is removed from the gauge. For this type of maintenance, the gauge shall be returned to the manufacturer.

3. The leak test will be performed using the TROXLER Model 3880 Leak Test Kit. The leak test will be performed using the manufacture's instructions. Again, the personnel monitoring device shall be employed. Gauges will be leak tested at intervals not to exceed 6 months.

3. Emergency Procedures

A. In the event of physical damage to a gauge, the following steps shall be immediately taken:

1. Cordon off an area of 15 foot radius around the gauge.

2. If a vehicle is involved, it shall be stopped until the extent of contamination, if any, can be established.

3. A visual inspection of the gauge shall be made to determine if the source housing and/or shielding has been damaged.

4. At the earliest possible time, when the incident is under control, contact **Ned Mamula** at **(703) 327-6500**. Describe the present situation and follow the instructions of the Radiation Safety Officer.

B. In the event the gauge is lost or stolen, immediately notify the Radiation Safety Officer at (703) 327-6500

Item 11 - Waste Management

Disposal of the gauge will be by transfer to another facility specifically licensed for the material; or returned to the gauge manufacturer. Records of transfer will be maintained on file.

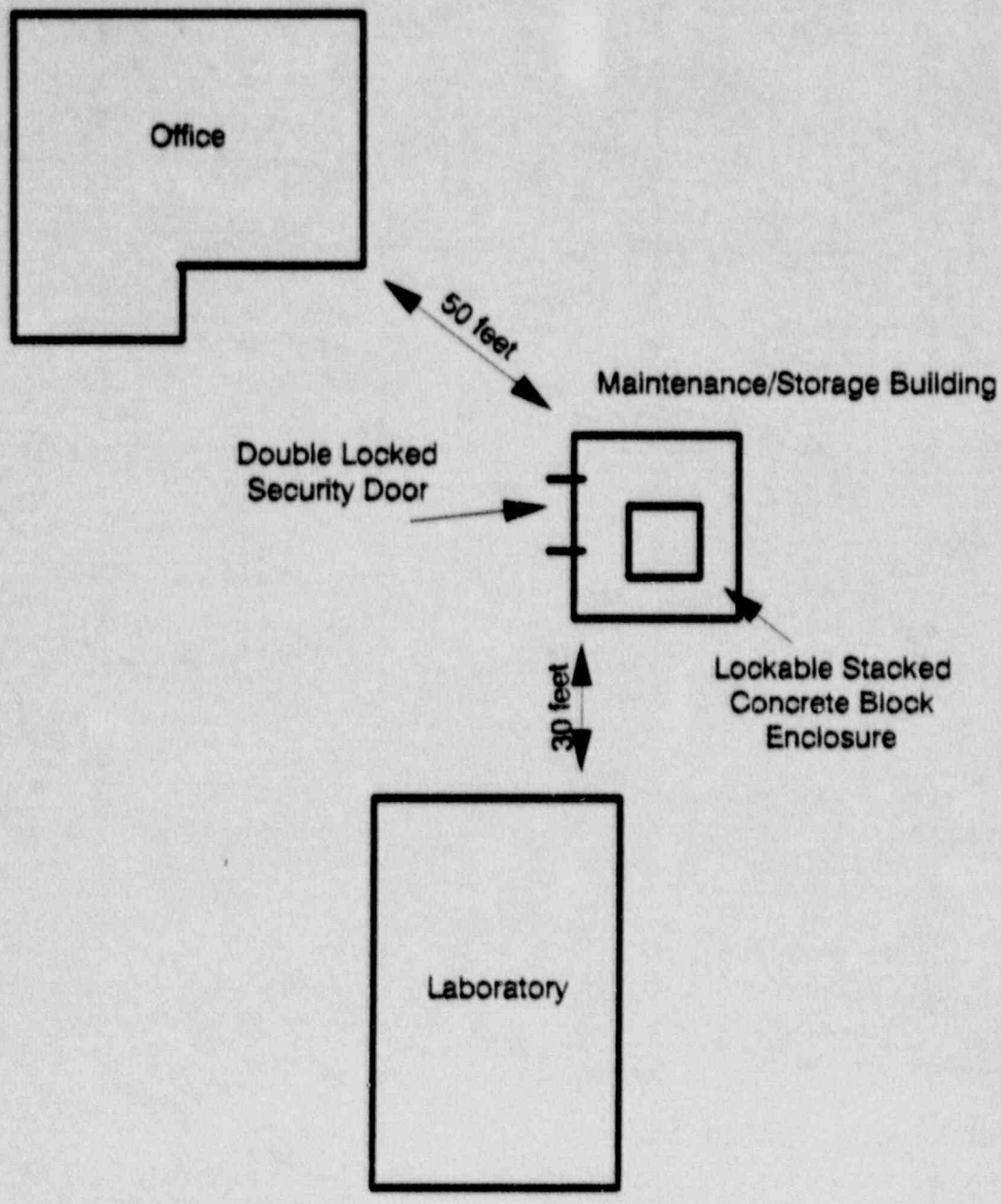

Diagram not to scale.

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

NED MAMULA

of

TERRADYNAMICS CORPORATION

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

08-25-87
DATE

W. F. Troxler
PRESIDENT

Nº 19514