

# 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, 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.

## Licensee

1. TechniScan, Inc.

2. 155 S. Madison Street, Suite 328  
Denver, Colorado 80209

3. License number 05-27559-01

4. Expiration date April 30, 2007

5. Docket or Reference No 030-34392

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 sources registered either with NRC under 10 CFR 32.210 or with an Agreement State and incorporated in a compatible gauging device as specified in Item 9 of this license

A. See Condition 9.A.

B. Americium-241

B. Sealed sources registered either with NRC under 10 CFR 32.210 or with an Agreement State and incorporated in a compatible gauging device as specified in Item 9 of this license

B. See Condition 9.B.

250013

## 9. Authorized use

A. and B. To be used, for measurement purposes, in compatible portable Boart Longyear Company (formerly Campbell Pacific Nuclear Company), Humboldt Scientific, Inc., Seaman Nuclear Corporation and/or Troxler Electronic Laboratories, Inc. gauging devices that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.



MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

05-27559-01

Docket or Reference Number

030-34392

CONDITIONS

10. Licensed material may be used at the licensee's facilities located at 45 South Forest Street, Denver, Colorado, and may be used 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. A. Licensed material shall only be used by, or under the supervision and in the physical presence of, the Radiation Safety Officer or individuals who have successfully completed the manufacturer's training program for gauge users, have received copies of, and training in, the licensee's operating and emergency procedures, and have been designated by the Radiation Safety Officer.  
B. The Radiation Safety Officer for this license is David G. Davis.
12. 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 or by an Agreement State.  
B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.  
C. 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.  
D. Sealed sources need not be leak tested if:
  - (i) they contain only hydrogen-3; or
  - (ii) they contain only a radioactive gas; or
  - (iii) the half-life of the isotope is 30 days or less; or
  - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or

License Number

3

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MATERIALS LICENSE  
SUPPLEMENTARY SHEETDocket or Reference Number  
05-27559-01

030-34392

## 12. (Continued)

- D. (v) 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.
- E. 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 IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken.
- F. The licensee is authorized to collect leak test samples for analysis by Boart Longyear Company. 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.
13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
14. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.
15. Each portable 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.
16. Except for maintaining labeling as required by 10 CFR Part 20 or 71, the licensee shall obtain authorization from NRC before making any changes in the sealed source, device, or source-device combination that would alter the description or specifications as indicated in the respective Certificates of Registration issued either by the Commission pursuant to 10 CFR 32.210 or by an Agreement State.

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License Number

05-27559-01

Docket or Reference Number

030-34392

17. Any cleaning, maintenance, or repair of the gauges 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.
18. 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."
19. The licensee shall not use sealed sources or probes containing sealed sources at depths exceeding 3 feet below the surface.
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. 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 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 January 30, 1997
  - B. Letter dated April 3, 1997

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Original Signed By  
Billie Gruszynski

Date APR 10 1997

By

Billie Gruszynski (Ms.)  
Nuclear Materials Licensing Branch  
Region IV  
Arlington, Texas 76011





UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

April 10, 1997

TechniScan, Inc.  
ATTN: David G. Davis  
Radiation Safety Officer  
155 S. Madison Street, Suite 328  
Denver, Colorado 80209

SUBJECT: NEW LICENSE

Please find enclosed License No. 05-27559-01. You should review this license carefully and be sure that you understand all conditions. If you have any questions, you may contact the reviewer who signed your license at (817)860-8120.

You should note that License Condition 20 has been added to your license relative to the maximum amount of material you may possess under the license. This licensing action was necessary to preclude you from exceeding possession limits of materials requiring that decommissioning financial assurance be provided. Should you determine that you require possession of material in excess of 10 CFR 30.35(d) amounts, please notify us regarding an amendment to your license.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public which can result from failure to comply with NRC requirements, you must conduct your program involving radioactive 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: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).
5. Request and obtain written NRC consent before transferring your license or any right thereunder, either voluntarily or involuntarily, directly or indirectly, through transfer of control of your license to any person or entity. A transfer of control of your license includes not only a total change of ownership, but also a change in the controlling interest in your company whether it is a corporation, partnership, or other entity. In addition, appropriate license amendments must be requested and

obtained for any other planned changes in your facility or program that are contrary to your license or contrary to representations made in your license application, as well as supplemental correspondence thereto, which are incorporated into your license. A license fee may be charged for the amendments if you are not in a fee-exempt category.

6. Maintain in a single document decommissioning records that have been certified for completeness and accuracy listing all the following items applicable to the license:
  - Onsite areas designated or formerly designated as restricted areas as defined in 10 CFR 20.3(a)(14) or 20.1003.
  - Onsite areas, other than restricted areas, where radioactive materials in quantities greater than amounts listed in Appendix C to 10 CFR 20.1001-20.2401 have been used, possessed, or stored.
  - Onsite areas, other than restricted areas, where spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment, or site have occurred that required reporting pursuant to 10 CFR 30.50(b)(1) or (b)(4), including areas where subsequent cleanup procedures have removed the contamination.
  - Specific locations and radionuclide contents of previous and current burial areas within the site, excluding radioactive material with half-lives of 10 days or less, depleted uranium used only for shielding or as penetrators in unused munitions, or sealed sources authorized for use at temporary job sites.
  - Location and description of all contaminated equipment involved in licensed operations that is to remain onsite after license termination.
7. Submit a complete renewal application with proper fee, or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
8. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

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; imposition of a civil penalty; or an order suspending,

TechniScan, Inc.

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modifying, or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), 60 FR 34381, June 30, 1995.

Thank you for your cooperation.

Sincerely,

Original Signed By  
Billie Gruszynski

Billie Gruszynski (Ms.)  
Nuclear Materials Licensing Branch

Docket: 030-34392  
License: 05-27559-01  
Control: 466316

Enclosures: As stated

APR 10 1997

DOCUMENT NAME: P:\TECHSCAN.CVR

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

RIV:NMLB	N						
BGruszynski	<i>Bg</i>						
4/10/97							

OFFICIAL RECORD COPY



# LEGAL IDENTITY QUESTIONNAIRE

The type of information requested by this form will be helpful to Region IV in performing its regulatory responsibilities and should be sought during initial licensing and subsequent routine inspection contacts with licensees. However, licensee provision of this information is not a requirement. If the licensee cannot supply all of the indicated information, obtain as much as possible, especially for smaller businesses. Information should be obtained informally by telephone or personal contact. This form shall be completed by Region IV personnel only. It should not be sent to an applicant or licensee nor should the information requests be part of any standard correspondence format. Place the completed copy of this form in the docket file.

Current Full Legal Name of Licensee: Techniscan

Previous Legal Name: None

License No. 05- 27559-01

Licensee Contact and Title: Dina Jones, Treasurer  
Telephone: \_\_\_\_\_

Form of business: June 1991 in Colorado

- ☐ Individual Person
- ☐ Sole Proprietorship  
List Owner's Name, Home Address, and Telephone No. below
- ☐ Partnership  
List Partners' Names, Home Addresses, and Tele Nos. below
- ☒ Corporation

Attach List of Names and Home Addresses for the following:

Corporate Officers David Davis, President  
Any Principal Stock Holder Jan Davis, Secy  
Members of Board of Directors Dina Jones, Treasurer

Other (Provide detailed information below)

Billie Guszynski  
NRC Staff Member

4/10/97  
Date

\*\*\*\*\*

**TechniScan, Inc.**

155 S. Madison  
Suite 328  
Denver, Colorado  
80209  
303-329-0535  
FAX 303-377-2740

April 3, 1997

Scan Technologies  
Roof & Building  
Diagnostics

Ms. Billie Gruszynski  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

RE: Control Number 466316  
Docket Number 03034392

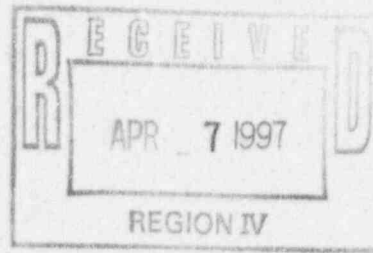
Dear Ms. Gruszynski:

In response to your letter of February 20 and your phone call of March 20, 1997, regarding our application for Materials License, following please find additional information as requested.

1. TechniScan will maintain records of the annual refresher training, including the date of the training, identity of the instructor, list of attendees and topics covered. These records will be kept for all attendees for at least three years whether or not they remain employed by TechniScan.
2. Only trained authorized users have access to the storage cabinet key and have access to the combination code to open the locked garage door.
3. Please strike the earlier response to question 10.2 in the original Materials License Application. Boart Longyear will only perform a factory inspection if the gauge is returned to them.

We have recently purchased a Monitor 4 Radiation Survey Meter, manufactured by S.E. international, Inc., and purchased from CPN Company. This meter will be at each job site for a timely evaluation of source integrity following an incident. This instrument is capable of measuring between .1 mrem per hour and 500 mrem per hour. The survey instrument will be calibrated by S.E. International at intervals not to exceed one year. Each time the moisture density gauge is removed from storage, we will check the response of the monitoring instrument by taking readings at the handle of the gauge, per CPN Company's recommendation. This measurement will always be taken in the same way for consistency purposes and to verify the monitoring instrument is working properly. 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.

*O.K.  
per J. Whitten*



466316

## TechniScan, Inc.

Ms. Billie Gruszynski

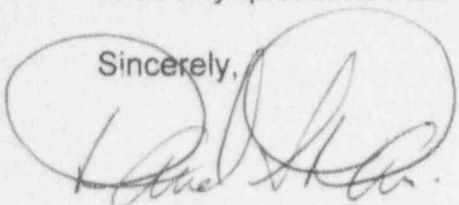
April 3, 1997

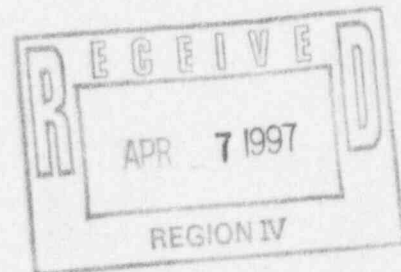
Page 2

4. TechniScan will conduct an inventory, at intervals not to exceed six months, to account for all sealed sources and devices received and possessed under the license. The inventory records will be maintained for at least three years from the date of the inventory and will include the radionuclide and amount of byproduct material in each sealed source; the manufacturer's name, model number and serial number of each device containing byproduct material; the location of each sealed source and device; and the date of the inventory.
5. David G. Davis, the RSO, will conduct the Annual Audit of the Radiation Safety Program (his qualifications have been listed in the original Application for Materials License). The audit will follow Appendix I of the Draft Regulatory Guide DG-0008 and will be maintained for at least three years after the record is made. As RSO, President and Owner of TechniScan, Dave Davis is committed to review the full results and take prompt action to correct deficiencies identified. He will inform all personnel of the deficiencies and set forth what actions authorized users must take to avoid this deficiency in the future. These actions will be reviewed in the yearly refresher course.

We are hopeful that our response to your request for additional information is appropriate and that our application will continue on its review process. If you should have any questions after looking over this letter, please call.

Sincerely,

  
David G. Davis, AIA, RCI  
President



466316

# CONVERSATION RECORD

TIME

DATE

3/20/97

TYPE

☐ VISIT

☐ CONFERENCE

☒ TELEPHONE

☐ INCOMING

☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

ORGANIZATION (Office, dept., bureau, etc.)

TELEPHONE NO.

David M. Davis

Techniscan

(303)  
329-0535

SUBJECT

New License

ROUTING

NAME/SYMBOL

INT

SUMMARY

- ✓ 1. your communication was neither dated nor signed. [will correct]
  - ✓ 2. you stated you would keep "annual refresher training" records for 3 yrs. Commitment needs to be for all trig records. [They will amend reply.]
  - ✓ 3. 10.2 of the guide is quite specific as to your choices concerning access to survey meters. The licensing authority is not one of those choices.
- 3/20/97 They did not understand question.  
Mr. Davis states they will amend their reply.

ACTION REQUIRED

await reply

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

ACTION TAKEN

SIGNATURE

TITLE

DATE



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-8064

February 20, 1997

TechniScan, Inc  
ATTN: David G. Davis  
President & RSO  
155 S. Madison Street, Suite 328  
Denver, Colorado 80209

SUBJECT: NEW APPLICATION DEFICIENCY

We have reviewed your application dated January 30, 1997, requesting a byproduct materials license for the use of radioactive material in nuclear gauging devices. Before further action can be taken, we will need the following additional information.

- ✓ 1. Your application does not commit to keeping training records for three years after termination of employment.

**Provide commitment to keep the training records for three years after individual terminates employment.**

Refer to Item 8.1 of Draft Regulatory Guide DG-0008 (hereinafter referred to as the Guide).

- ✓ 2. Your application states that the key to the locked storage cabinet is kept at the TechniScan office. Please note that this key should be available only to those individuals who are trained authorized users.

**Provide assurance that only trained authorized users have access to the locked storage.**

- ✓ 3. Your application states in Item 10.2 that you rely on Boart Longyear for a timely evaluation of source integrity following an incident.

*no. for 4/3/97*  
**Provide a description of how Boart Longyear will provide this evaluation, the type and range of survey instrument which they will use, and the length of time it will take them to be available at the site of an incident.**

Refer to Item 10.2 of the Guide.



- ✓ 4. Your application states that you will conduct an inventory each time the gauge is used. The NRC requires that you conduct inventories at intervals not to exceed 6 months. Since there is the possibility that you would not use a gauge during a 6 month period, it will be necessary to provide the following commitment.

**Provide commitment that an inventory will be conducted at intervals not to exceed 6 months and that you will maintain inventory records for 3 years from date of inventory.**

Refer to Item 10.4 of the Guide.

- ✓ 5. Your application states that you will conduct audits as described in Appendix 1 of the Guide. This will describe the scope and extent of the audits; however, Item 10.8 requests other information to be submitted in the next to last paragraph.

**Provide the information requested in 10.8 concerning the name and qualifications of the person conducting audits; commitment to conduct audits not to exceed 12 months intervals and to maintain records for at least 3 years; management's commitment to review the results promptly; and a commitment to take prompt action to correct deficiencies identified and to inform all personnel of the deficiencies and actions management expects personnel to take to avoid in the future.**

Refer to 10.8 of the Guide.

In order to continue review of your application, we request that you submit your response within 30 calendar days from the date of this letter. Please reply in duplicate and refer to the control number specified below. If you have questions or require clarification on any of the information requested above, we encourage you to contact us at (817)860-8120.

Sincerely,

Original Signed By  
Billie Gruszynski

Billie Gruszynski (Ms.)  
Nuclear Materials Licensing Branch

Enclosures:  
Draft Regulatory Guide DG-0008

Docket: 03034392  
Control: 466316

FEB 20 1997

TechniScan, Inc.

-3-

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	RIV:AO:NMLB	N					
NAME	BGruszynski	<i>Bg</i>					
DATE	2/20/97						

BETWEEN:

License Fee Management Branch, ARM  
and  
Regional Licensing Sections

(FOR LEMS USE)  
INFORMATION FROM LTS

Program Code: 03121  
Status Code: 3  
Fee Category: \_\_\_\_\_  
Exp. Date: 0  
Fee Comments: \_\_\_\_\_  
Decom Fin Assur Req'd: \_\_\_\_\_

LICENSE FEE TRANSMITTAL

A. REGION IV

1. APPLICATION ATTACHED  
Applicant/Licensee: TECHNISCAN, INC.  
Received Date: 970210  
Docket No.: 3034392  
Control No.: 466316  
License No.: \_\_\_\_\_  
Action Type: New Licensee

2. FEE ATTACHED \$550.00  
Amount: \_\_\_\_\_  
Check No.: 5981

3. COMMENTS

Signed Billie Muszynski  
Date 2/11/97

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

1. Fee Category and Amount: 3P \$550

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

Amendment \_\_\_\_\_  
Renewal \_\_\_\_\_  
License ✓

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

Signed Rita Mosquin  
Date 2/14/97

Log	<u>Feb 1 IV</u>
Remitter	_____
Check No.	<u>5981</u>
Amount	<u>\$550</u>
Fee Category	<u>3P</u>
Type of Fee	<u>Appl</u>
Date Check Rec'd.	_____
Date Completed	<u>2/14/97</u>
By:	<u>[Signature]</u>

(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: 8 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:

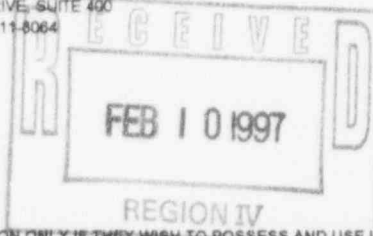
DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

## 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 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO  
RICO, SOUTH CAROLINA, TENNESSEE, TEXAS, VIRGIN ISLANDS, OR WEST VIRGINIA,  
SEND APPLICATIONS TO:NUCLEAR MATERIALS LICENSING SECTION  
U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
101 MARIETTA STREET, NW, SUITE 400  
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 60532-4351ALASKA, 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 76011-8064

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)

- ☒
- A. NEW LICENSE
- 
- ☐
- B. AMENDMENT TO LICENSE NUMBER \_\_\_\_\_
- 
- ☐
- C. RENEWAL OF LICENSE NUMBER \_\_\_\_\_

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

TechniScan, Inc.  
155 South Madison Street, Suite 328  
Denver, CO 80209

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

45 South Forest Street (storage)  
Denver, CO 80222temporary job sites in States subject to NRC regulatory  
authority.

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

David G. Davis

TELEPHONE NUMBER  
303-329-0535

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 \$ 550.00

## 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 82 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

David G. Davis, President

## SIGNATURE

## DATE

1/30/97

## FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	
					466316

5. **Radioactive Material**

<u>Element &amp; Mass No.</u>	<u>Chemical and/or Physical Form</u>	<u>Maximum Amount at One Time</u>
a. Cesium 137	Sealed Source CPN Model CPN-131	1 source, not to exceed 10 millicuries
b. Americium 241:Be	Sealed Source CPN Model CPN 131	2 sources, no single source to exceed 50 millicuries

6. **Purpose for Which Licensed Material Will Be Used**

The purpose for which this licensed material will be used is for measuring moisture and density of construction materials. The instrument will not be lowered into the ground more than one foot.

7. **Individual Responsible for Radiation Safety Program, Their Training/Experience**

7.1 The RSO for this license will be David G. Davis.

7.2 Mr. Davis earned his Bachelor of Architecture degree from Kent State University in 1967. Mr. Davis is a Registered Architect in Colorado B-793, Utah 94-278359-0301 and Texas 13740. His NCARB Certificate number is 37176. He successfully completed the RSO Training Seminar on March 4, 1992, and the R Safety and NEC Gauge Operation on March 13, 1992, both in Denver, Colorado. Certificates of Completion are kept in the office Radiation Safety Files. The course Mr. Davis took is a CPN certified training course approved by the NRC. The instructor, Mr. Stephen Thompson, is a certified instructor who attended a one-week instructor's seminar.

7.3 As the president of TechniScan, Dave Davis has full authority to stop unsafe operations of the nuclear gauge. When information/updates are received from the NRC, Colorado Department of Health, DOT or the gauge manufacturer, they are past on to Mr. Davis for his review and action, as appropriate. The RSO's duties and responsibilities will be those listed in Appendix C of this regulatory guide (Draft Regulatory Guide DG-0008). See Appendix A for an Organization Chart of TechniScan.



## **8 Training Provided to Other Users**

- 8.1 Before an individual is permitted to use the nuclear gauge, they must complete CPN's gauge course. The following individuals have successfully completed the Radiation Safety and Use of Nuclear Gauges course offered by CPN. These courses were again instructed by Stephen Thompson and the courses were NRC approved, certified CPN training courses. Certificates of Completion are kept in the office Radiation Safety Files. These courses were completed in Denver, Colorado

Greg Graves, February 17, 1995  
Dan Neuhaus, February 17, 1995  
Stan Suhaka, June 6, 1995  
Bob Lindsey, May 14, 1996

In addition to the completed courses, the RSO provides and reviews a copy of the operating and emergency procedures.

- 8.2 A refresher course is provided in January of each year. It is a group session for all previous attendees of the CPN Course. This refresher training includes emergency procedure "dry runs" as well as a review of the emergency procedures. DOT changes and requirements and regulation/license are also reviewed. If the audit concluded there were any deficiencies, these are addressed. Field stories that will help others in the group are also exchanged. Documentation to record the refresher course is kept in the office Radiation Safety Files.

## **9. Facilities and Equipment**

The storage location currently exists in the garage of a private residence. Storage of the gauge does not conflict with local codes or zoning laws. See Appendix B for a diagram of the storage facility.

The gauge, when not in use, is kept in a locked cabinet in a locked garage. The key to this cabinet is kept at the TechniScan office, 155 South Madison, Denver, Colorado. While in transport the gauge is cable-locked to the van and hidden from view while in a locked van. During periods of non-use such as lunch time, the gauge is again cable locked to the van and hidden from view while in a locked van. If there is a need to travel overnight with the gauge, the same procedure will be followed for overnight storage as is for transportation and non-use time.

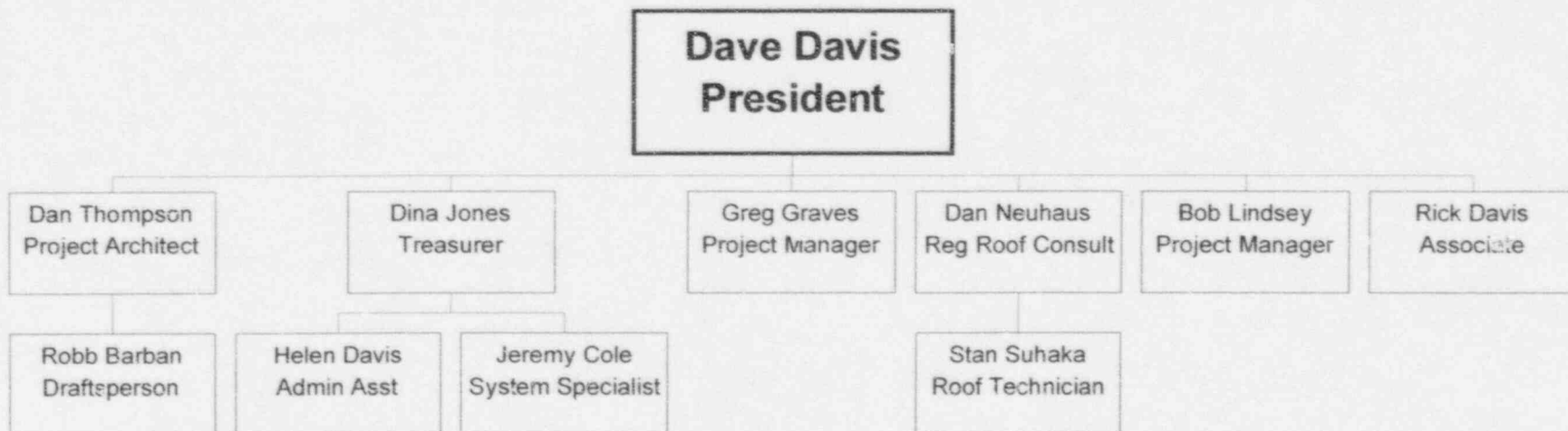
## **10. Radiation Safety Program**

- 10.1 We currently require all trained employees to wear a TLD film badge from Landauer, Inc. These badges are exchanged with Landauer every three months.

- 10.2 For a timely evaluation of source integrity following an incident, we rely on Boart Longyear for accurate instruments for checking the gauge.
- 10.3 We currently use a commercial leak test kit on an annual basis as required by the manufacturer. The kit supplier is Boart Longyear Company, 2830 Howe Road, Martinez, California 94553. Boart Longyear's license number is CA 1100-07. The kit we use is MS Sealed Source Leak Test Kit LT-1, model #401197. Refer to Appendix C for the supplier's procedure for collecting and analyzing samples. The leak test is performed each year by Dave Davis, the RSO.
- 10.4 An inventory is conducted each time the gauge is used. The instrument is logged in and out of storage and an inventory is conducted on the gauge as well as completeness of paperwork.
- 10.5 Any maintenance (e.g., 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 gauge manufacturer.
- 10.6 TechniScan has and will maintain current copies of applicable DOT regulations and will develop and implement procedures for complying with applicable DOT regulations.
- 10.7 All users of the gauge are provided with a copy of the Operating and Emergency Procedures document upon completion of their CPN training course. A copy of this document is also stored with the nuclear gauge. Refer to Appendix D for a copy of our Operating and Emergency Procedures document.
- 10.8 We will conduct audits as described in Appendix 1 of this regulatory guide (Draft Regulatory Guide DG-0008).
- 10.9 Not Applicable

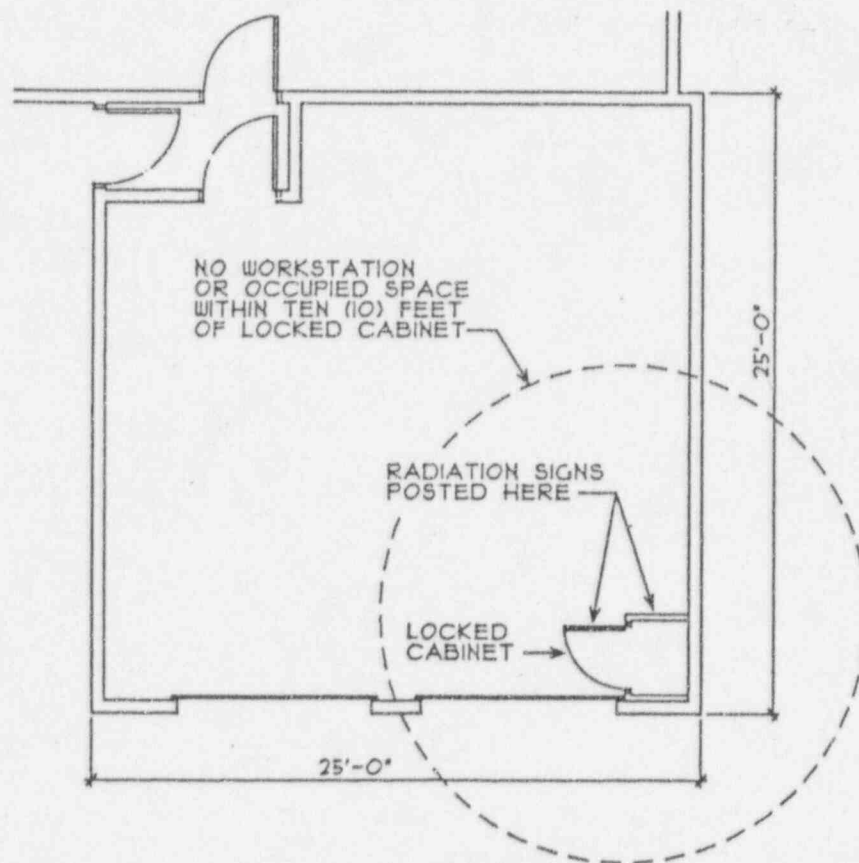
## 11. Waste Management

Disposal will be by transfer of the radioactive material to a person who is specifically licensed to receive and possess it.



9. Facilities and Equipment

Storage Diagram



Boart Longyear Company  
2830 Howe Road  
Martinez, California 94553 USA  
Telephone: (510) 228-9770  
Fax: (510) 228-3183



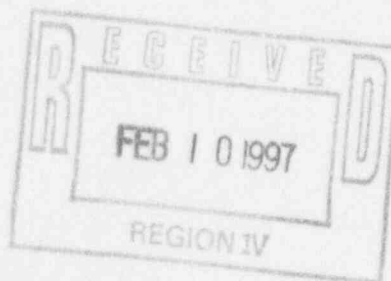
**BOART LONGYEAR  
CPN®**

Dear Customer:

The CPN® Leak Test Kit, Part No. 401197, is analyzed for .005 microcuries of removable contaminant in accordance with the conditions of California License No. 1100-07, issued to Boart Longyear/CPN®. Required test procedures are attached.

A handwritten signature in cursive script that reads "Doug Carter".

Doug Carter  
Radiation Safety Officer  
Boart Longyear Company/CPN®



DHC/jr

Enclosure



# SEALED SOURCE LEAK TESTING AS A CUSTOMER SERVICE AND FOR IN HOUSE COLLECTION AND ANALYSIS

To obtain authorization to perform leak testing as a customer service pursuant to 17 CCR 30275(e), supply the following information. For performing tests on sealed sources possessed in house, provide all applicable information from the list below. Substitute procedures for the "instructions" in item 3, provide a record keeping form for item 6, and ignore item 7.

1. Identify the types of nuclides to be considered for leak testing (beta, gamma, and/or alpha).
2. Provide a description of the kits to be mailed or used, including materials for collection of sample(s).
3. Submit a copy of the instructions for collection of samples which cover different types of sealed sources (ie. plated foils, thin window, standard sealed sources, and sources contained in devices or shielded containers). Include a statement regarding the reporting requirement, should any result exceed the regulatory limit.
4. List all instrumentation used to analyze samples and provide appropriate calibration procedures, taking into account nuclides of interest. List all sources (isotope, activity, and manufacturer) used for calibration and verify NIST traceability. Provide calculations showing the Minimum Detectable Activity\* (MDA) for representative nuclides. The MDA should be not greater than 10% of the 0.005 microcurie regulatory limit.
5. Submit protocols for counting samples to achieve adequate overall detection capability.
6. Provide a sample report issued to the customer upon analysis. The report should give the results in terms of microcuries.
7. State the desired possession limit for collected samples. Most service companies have between 1 and 10 microcuries total.

\* Use the following formula to calculate the MDA:

$$MDA = \frac{2.3 \sqrt{bkg \text{ counts}}}{t \times E} = \frac{dpm}{2.2 \times 10^6 \text{ dpm/}\mu Ci} = \mu Ci$$

t = counting time

E = efficiency (cpm/dpm)

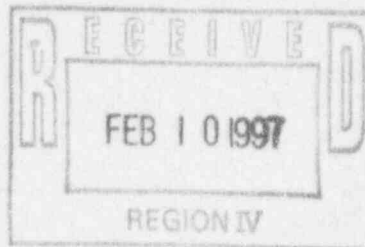
STANDARD OPERATING AND EMERGENCY PROCEDURES

Operating Procedures

1. Before removing the gauge from its place of storage, check to make sure that the gauge source rod is in the shielded, locked position, then lock the transport case if possible.
2. Sign the gauge out in a log book, stating the dates of use, names of the authorized users who will be responsible for the gauge, and the temporary jobsites where the gauge will be used.
3. Never leave the gauge unattended while in your custody.
4. Follow all applicable Department of Transportation (DOT) requirements when transporting the gauge.
5. Do not touch the source rod with your fingers, hands, or any part of your body, and always make sure the source rod is in the shielded position after each measurement is made.
6. Always wear your assigned thermoluminescent dosimeter (TLD) or film badge when using the gauge.
7. Never wear another person's TLD or film badge.
8. Never store your TLD or film badge near the gauge.
9. Always keep unauthorized persons away from the area where the gauge is to be used.
10. Always maintain constant surveillance and immediate control of the gauge when it is not in storage.
11. To make gauges more visible to operators of heavy equipment at construction sites, always "stake and flag" each gauge, being sure that the flags are tall enough to be seen by heavy equipment operators.<sup>1</sup>
12. Never look under the gauge when the source rod is being lowered into the ground.
13. After each measurement, always return the source to the shielded position and lock it there.
14. When the gauge is not in use at a temporary jobsite, place the gauge in a secured storage location (e.g., locked in the trunk of a car or locked in a storage shed).
15. Return the gauge to its proper storage location at the end of the work shift.
16. When the gauge is returned to storage, so indicate in the source log.

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<sup>1</sup> A fiberglass whip with a flag at the top (available as a bicycle accessory) can be attached to the gauge to make its location more obvious to heavy equipment operators.



Emergency Procedures

If the source fails to return to the shielded position (e.g., as a result of being damaged) or if any other emergency or unusual situation arises (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.
2. Prevent unauthorized personnel from entering the secured area.
3. If any heavy equipment is involved, detain the equipment until it is determined there is no contamination present.
4. Notify licensee management of the situation, calling company personnel in the order listed below.

NAME	WORK PHONE NUMBER	HOME PHONE NUMBER
David G. Davis	303-329-0535	303-388-6775
Gregory L. Graves	303-329-0535	303-695-0524
Daniel J. Neuhaus	303-329-0535	303-693-8976

5. Follow the directions provided by the person contacted in step 4.
6. LICENSEE MANAGEMENT MUST:
  - 6.1 Arrange for a survey to be conducted as soon as possible by a knowledgeable person using appropriate radiation detection instrumentation. (This person could be a licensee employee using a survey meter located at the jobsite or a consultant.)
  - 6.2 Make necessary notifications to local authorities; notify the NRC as required. (Even if not required to do so, you may report ANY incident to NRC by calling NRC's Emergency Operations Center at (301) 816-5100, which is staffed 24 hours a day and accepts collect calls. NRC notification is required when gauges containing licensed material are lost or stolen, and when gauges are damaged or involved in incidents that result in doses in excess of the dose limits in 10 CFR 20.2203.)
  - 6.3 Consider the timeliness of reports to the NRC.
  - 6.4 Review the reporting requirements, which are found in 10 CFR 20.2201-2203 and 10 CFR 30.50.