

NRC FORM 313

(7-86)
10 CFR 30.22, 33, 34
35 and 40U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Exclres. 5-21-87

APPLICATION FOR MATERIAL LICENSE

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

APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS 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 HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA,
RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TOU.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIALS SAFETY SECTION B
601 PARK AVENUE
KING OF PRUSSIA, PA 19406ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA,
PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR
WEST VIRGINIA, SEND APPLICATIONS TOU.S. NUCLEAR REGULATORY COMMISSION, REGION II
NUCLEAR MATERIALS SAFETY SECTION
101 MARIETTA STREET, SUITE 2300
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
790 ROOSEVELT ROAD
GLEN ELLYN, IL 60137ARKANSAS, 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
811 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011ALASKA, 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
NUCLEAR MATERIALS SAFETY SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

FEB 13 1989

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)

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

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

Western Water Consultants, Inc.
611 Skyline Road
Laramie, WY 82070

3 ADDRESSES WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

611 Skyline Road, Laramie, WY and at temporary jobsites of the Licensee

4 NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Paul A. Rechard

TELEPHONE NUMBER

(307) 742-0031

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5 RADIOACTIVE MATERIAL a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time	6 PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED
7 INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE	8 TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS
9 FACILITIES AND EQUIPMENT	10 RADIATION SAFETY PROGRAM
11 WASTE MANAGEMENT	12 LICENSEE FEES (See 10 CFR 170 and Section 170.31) FEE CATEGORY Section 170.3(p) AMOUNT ENCLOSED \$ 230.00
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, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF. WARNING: 18 USC SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.	

SIGNATURE-CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

Paul A. Rechard

President

2-10-89

14 VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS		b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)	c. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Copies 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.)
< \$250K	\$1M - 2.5M	d. NUMBER OF BEDS	
\$250K - 500K	\$3.5M - 7M		
\$500K - 750K	\$7M - 10M		
\$750K - 1M	> \$10M		

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED
HAP	Feb 14-89	3P	8903200484 890306 REG4 LIC30 49-26979-01 PNU	462420
AMOUNT RECEIVED	CHECK NUMBER			DATE
230	230			2/14/89

Question 5.

- A. H-3
- B. Titanium Tritide Foil (Model 508-3)
- C. 150 Millicuries or less per foil

Question 6.

For use in the gas chromatograph manufactured by Sentex Sensing Technology, Inc., Model: Scentograph, for air analysis.

Question 7.

The following individual will supervise the operation of the gas chromatograph:

Dale J. Tischmak

All individuals will receive training from the vendor, Sentex Sensing Technology, Inc. The training will include instruction in the components and the operation of the device, and the principles of radiation safety, with a discussion of the source and its level of radioactivity. Illustrated diagrams showing the sealed source and its metal enclosures (see below) will be used. No maintenance or repair of the gas chromatograph will be performed.

Mr. Tischmak has more than 2.5 years of experience with radioactive chromatographic detectors. He is knowledgeable as to their proper use, maintenance and safety considerations.

Question 8.

Any individuals who will use the gas chromatograph will be trained by Dale J. Tischmak in its proper use.

Question 9.

The instrument will be used at the plant site at 611 Skyline Road, Laramie, WY. A sketch of the building's floor plan is attached. The building is locked when not being used, and the instrument will be locked away when an authorized person is not present.

The radioactive material is a sealed source. It is contained within a sealed stainless steel cylinder which is further enclosed in an additional cylinder of copper with a 1/4" thickness. The entire package is further encased within an aluminum box ("oven assembly"), which is bolted to the chassis of the device. No radiation survey or measuring instruments will be used. The

operator will, however, visually inspect the oven assembly on a regular basis to insure its integrity. If any damage is noted, the instrument will be removed and returned to the manufacturer, Sentex Sensing Technology, Inc.

Question 10.

A warning label identifying the source, strength and amount of radiation is permanently affixed to the gas chromatograph. In addition, the instruction manual which accompanies the instrument specifically forbids tampering with the oven assembly. It also specifically directs the user to return the device to the manufacturer if damage to the oven assembly is noted or if removal of the radioactive source is required.

No personal monitoring devices will be used and no repair or maintenance of the gas chromatograph will be performed.

Question 11.

The device will be returned to the manufacturer, Sentex Sensing Technology, Inc. for disposal of the radioactive material.

WESTERN WATER CONSULTANTS, INC.

DALE J. TISCHMAK - WATER QUALITY SCIENTIST

Dale J. Tischmak is a water quality scientist on projects involving ground-water and surface water quality studies. He has experience in water quality sample collection and management, data analysis, studies involving organic chemical bioconcentration in and lethal toxicity to freshwater animals, analysis for organic chemicals in water and animal tissues, and water resource planning.

EDUCATION M.S., Chemistry, Montana State University, 1984
B.A., Combined Sciences: Biology and Chemistry,
Carroll College, 1981

EXPERIENCE	1984-Present	Water Quality Scientist, Western Water Consultants, Inc.
	1982-1984	Graduate Research Assistant, Fisheries Bioassay Laboratory
	1982	Research Assistant - Chemistry Fisheries Bioassay Laboratory
	1980-1981	Microbiology Laboratory Assistant, Montana Department of Health and Environmental Sciences

PROFESSIONAL American Chemical Society - Environmental Division
MEMBERSHIP

REPRESENTATIVE PROJECTS

- Ground-water sampling, data analysis, and report preparation for RCRA hazardous waste sites at several refineries and Superfund sites
- Evaluation of ground-water quality at underground storage tank sites
- Separate and simultaneous bioconcentration in fathead minnows of five organic chemicals, Fisheries Bioassay Laboratory, Bozeman, Montana
- Ground-water quality and methane generation monitoring at municipal landfills
- Nitrogen contribution and distribution from waste water treatment facilities and stock yards, East Gallatin River, Montana
- Lethal concentrations of ten organic chemicals to ten aquatic animals, Fisheries Bioassay Laboratory, Bozeman, Montana
- Toxicity of surface water runoff to Daphnia magna, Homestake Mining Co., Lead, South Dakota
- Isolation of Campylobacter fetus ss. jejuni from water and milk, Montana Department of Health and Environmental Sciences, Helena, Montana

SENTEX SENSING TECHNOLOGY, INC.

February 7, 1989

Mr. Dale Tischmak
Western Water Consultants
611 Skyline Road
Laramie, Wyoming 82070

Dear Mr. Tischmak:

Pursuant to your order for the SCENTOGRAPH, this letter shall confirm the following information about the radioactive source contained in the automated gas chromatograph manufactured by our company:

The radioactive source is Hydrogen 3 in the physical form of a titanium tritide foil. The manufacturer is Safety Light Corporation and the Model No. is 508-3. The maximum amount of radioactivity is 150 millicuries.

It is a sealed source. The radioactive foil is encased in a sealed, stainless steel cylinder of 1/4" thickness. This cylinder is further enclosed within an additional cylinder of copper with thickness of 1/16". The copper cylinder is contained within the oven assembly of the instrument. The oven assembly is enclosed within a three-sided aluminum box which is bolted to the electronic module. The electronic module is constructed of aluminum of 1 3/32" thickness.

The following questions/answers may also be helpful to you.

QUESTION

- 1) Is it a sealed source?
- 2) What is the nature and access to the source?

ANSWER

Yes. (see above)

There is no direct access to the source. In order to enter the source, the oven assembly must be unbolted from the instrument chassis and the copper container contained therein be broken. In addition, the sealed stainless steel cylinder which houses the radioactive foil must be cut. It is, therefore, extremely unlikely this can be done under normal circumstances.

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3) Who cleans the source?

Pursuant to the instructions contained within the instruction manual, the oven is not to be opened by anyone other than Sentex personnel. If, for whatever reason, the source must be replaced, the assembly must be returned to the manufacturer. Wipe testing of the source is not required pursuant to the information we have received from the Nuclear Regulatory Commission.

4) What are the procedures for maintaining the source?

Because of its sealed character and the nature of the radioactive source (Hydrogen 3) we know of no procedures which are required for the source's maintenance. Here again, pursuant to NRC's advice, a wipe test is not required.

5) What are the temperature limitations of the source?

The radioactive source is safe until the oven temperature of 210 C is achieved. The unit, however, is equipped with an automatic switch-off device. This device will automatically disconnect the oven assembly if the heat therein exceeds 180 C.

6) Should there be periodic inspection of the source?

Pursuant to Sentex's instruction, the oven assembly should not be tampered with. Periodic visual inspection of the oven assembly can be performed on a monthly basis; the source itself, however, because of its sealed character, cannot, and should not be inspected.

7) Calibration of source?

Not required.

8) Replacement of the source?

Safety Light Corporation (manufacturer of the radioactive source) gives an estimated 1/2 life of the source as 11 years. It is, therefore, unlikely that the source should need replacement prior to that time. If, however, for whatever reason, replacement is required, the assembly should be returned to Sentex. A normal, usual shipping container (double wall thickness cardboard box) may be used. Special packing or notice requirements are not necessary pursuant to 49 CFR 173.22 (excepted quantity) under Section UN2911.

9) What are the venting requirements?

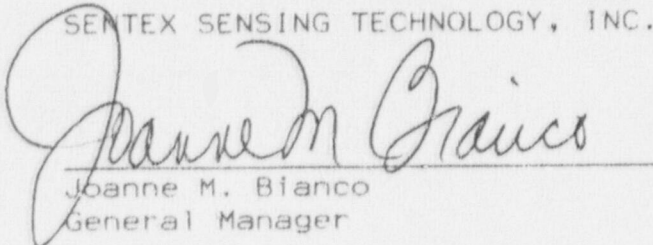
The instrument may be maintained under normal conditions. Normal air circulation (windows), fan system, or air conditioning) is sufficient. If the instrument is used outdoors no problems should arise.

I have enclosed a copy of our Nuclear Regulatory Commission's License #29-20512-01, which verifies the information herein.

I hope this information is sufficient for you to license this source or amend your present license. If you have authorization for this source, as do many of our users, please send me a copy of your license or ask your radiation safety department to contact me. Best Regards.

Sincerely yours,

SENTEX SENSING TECHNOLOGY, INC.



Joanne M. Bianco
General Manager

JMB/e
Enclosure

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 1 OF 2 PAGES

MATERIALS LICENSE

Amendment No. 06

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, 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. Sentex Sensing Technology, Inc.

2. 553 Broad Avenue
Ridgefield, New Jersey 07657In accordance with letter dated
June 4, 1987.3. License number 29-20512-01 is amended in
its entirety to read as follows:

4. Expiration date February 29, 1992

5. Docket or
Reference No. 030-193536. Byproduct, source, and/or
special nuclear material7. Chemical and/or physical
form8. Maximum amount that licensee
may possess at any one time
under this license

A. Hydrogen 3

A. Titanium tritide foils
(Safety Light Corporation
Model 508-3)A. Not to exceed 150 milli-
curies per foil or 6,000
millicuries total

9. Authorized use

A. For use in research and development of electron capture detector cells and for the manufacture, service and distribution of Scentor and Scentor Jr., and Scentograph, gas chromatographs, and Scanex-1, Model T-54 (Scanex Jr.), explosive detectors, to persons authorized to receive the licensed material pursuant to the terms and conditions of a specific license issued by the Nuclear Regulatory Commission or an Agreement State.

CONDITIONS

10. Licensed material may be used at licensee's facilities, 553 Broad Avenue, Ridgefield, New Jersey 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. Licensed material shall be used by, or under the supervision of, Amos Linenberg or S. Bianco.
12. This license does not authorize commercial distribution to person's generally licensed or persons exempt from licensing.
13. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.

4/pp.

NRC Form 374A
(8-82)

U.S. NUCLEAR REGULATORY COMMISSION

PAGE 2 OF 2

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

29-20512-01

Docket of Reference number

030-19353

Amendment No. 06

(continued)

CONDITIONS

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. Records of inventories shall be maintained for 2 years from the date of each inventory.
15. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material".
16. 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 August 31, 1981
- B. Letter dated October 28, 1981
- C. Letter dated May 10, 1983
- D. Letter dated August 9, 1983
- E. Letter dated September 6, 1983
- F. Letter dated October 15, 1983
- G. Letter dated May 31, 1984
- H. Letter dated January 10, 1985
- I. Letter dated January 16, 1986
- J. Letter dated February 20, 1986
- K. Letter dated September 18, 1986
- L. Letter dated June 4, 1987

For the U.S. Nuclear Regulatory Commission

Original Signed By

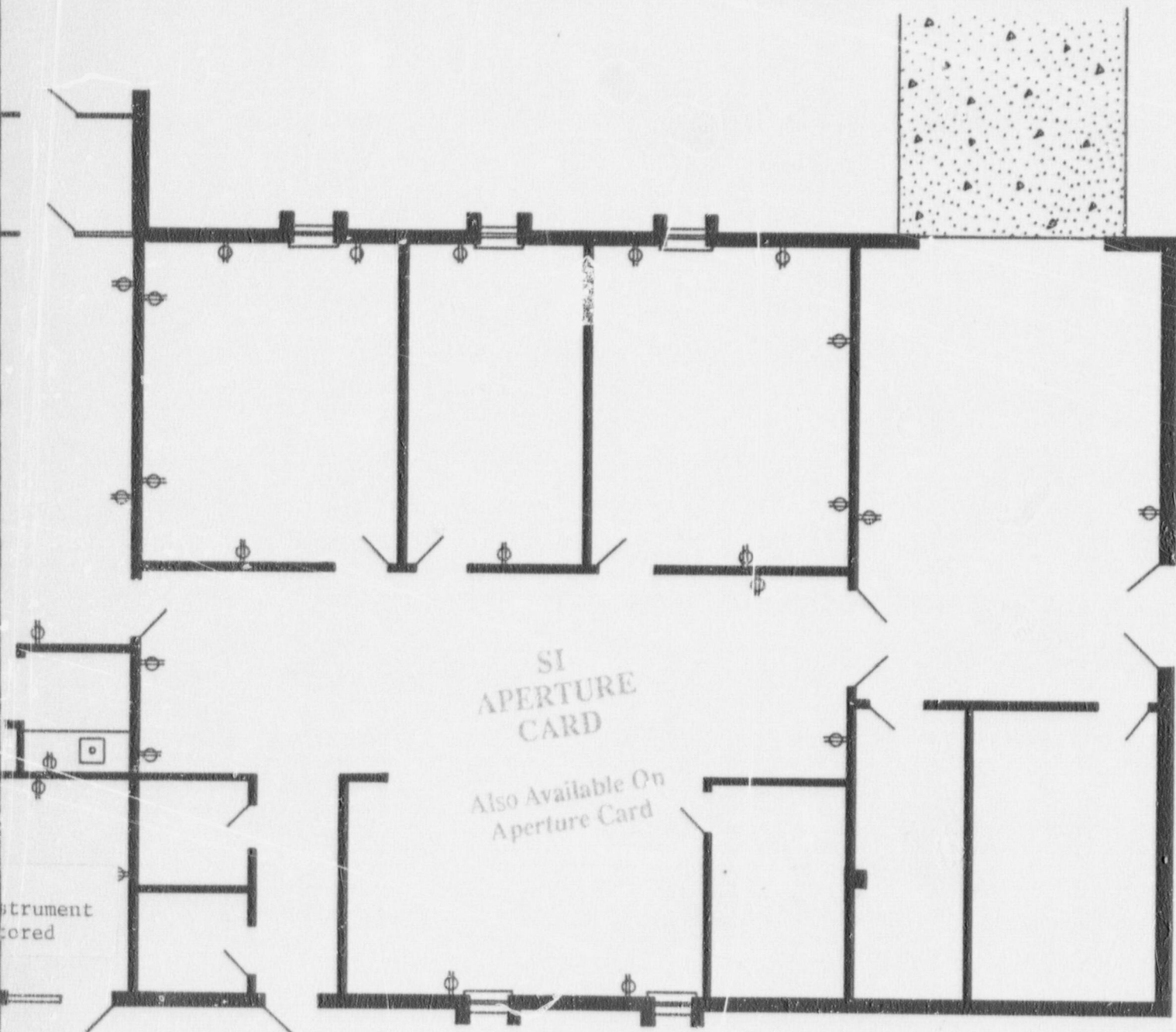
By

Jack Davis

Date 20 AUG 1987

Nuclear Materials Safety and
Safeguards Branch, Region I
King of Prussia, Pennsylvania 19406





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