

FEB 20 1985

Docket No. 030-22101  
Control No. 03344

Air Products and Chemicals, Inc.  
ATTN: Eugene I. Handwerk, Coordinator  
Toxicology & Regulatory Compliance  
Box 538  
Allentown, Pennsylvania 18105

Gentlemen:

This is in reference to your application dated December 11, 1984 for a byproduct material license. In order to continue our review, we need the following additional information:

1. In your application, you provide a resume for Mr. Handwerk, your Radiation Protection Officer (RPO). It appears that Mr. Handwerk has only had limited training (lecture of seven hours) and limited experience (less than 25 microcuries of both carbon 14 and hydrogen 3). Please provide any additional information which demonstrates that Mr. Handwerk has the expertise to direct your radiation safety program. Moreover, your consultant does not appear to have experience with the type of activity that you have requested on your application. Please provide additional information regarding Dr. Vicent's experience in directing a radiation safety program. Individuals that you have listed to be authorized users do not appear to be experienced with the quantity of isotope that you have requested and information provided for three users is not very specific. Please provide additional information concerning the topics covered and the length of time to cover each topic for formal training and the isotopes, activity and the length of time spent in gaining the on-the-job training. It appears that the training is not commensurate with the type of use.
2. In your application, you state that the tritium foil will be stored in glass jars and maintained in a locked storage cabinet. Please confirm that the jars will only be opened inside your ventilated hood. In addition, please specify the minimal face velocity on the fume hood and the frequency that it will be tested. Also, provide the name of the manufacturer of the instrument used to test the face velocities.
3. In your application, you state that you will count filter paper wipes in a liquid scintillation counter. Please specify the manufacturer, model number and sensitivity range of your radiation detection instrument.
4. In your application, you state that monitoring of the laboratories will be done from time to time by authorized users. Please explain what is meant by the expression "from time to time".

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5. In your application, you state "counts above 40 cpm will indicate the need for additional." Please complete this sentence. Please indicate if 40 cpm is gross counts or net counts after background has been subtracted. Normally, removable contamination is measured in disintegration per minute (dpm). Please specify the efficiency for this instrument and indicate that the results to be calculated for dpm.
6. In your application, you state all radioactive materials will be stored with appropriate shielding and ventilation. Please describe the shielding and ventilation that you are going to use.
7. In your application, you state that air monitoring and urinalyses will be performed as appropriate. You do not indicate when you will take air samples in the restricted area (inside the room containing the fume hood) or in the unrestricted area (the effluent air being released to the environment). Please provide the instrumentation that you will use to measure tritium in the air. In addition, you state you could use one curie of tritium per assembly period. The guide specifies one curie as the activity where urine analysis should be considered while working with tritium in a fume hood. It appears that a bioassay is necessary during an assembly period when working with approximately one curie of tritium.

If you believe that your circumstances warrant not performing bioassays, then, provide a written justification for not performing bioassays. If you believe bioassays are required, then, provide the frequency, and action levels when positive results are obtained or indicate you will comply with the frequency and action levels. If your criteria, frequency or action differs, please specify each in your application.

8. In the Emergency Procedures of your application, you indicate various emergency situations. Please explain how a user will know that there is a release of tritium to the air. Your procedures do not provide for any airborne monitoring. In addition, please explain how a user will know if a person has contamination on parts of his body or clothing. Your procedures do not provide for monitoring the individual's body or clothing.
9. In the Appendix to your application, you provide an ALARA philosophy; however, you only state the maximum external exposures as specified in 10 CFR 20. Since you are only working with tritium, a low energy beta emitter, why do you think it is necessary to provide these external levels without considering the internal hazard and methods used to prevent inhalation or absorption through the skin and methods used to monitor the airborne activity and removable contamination on the individual's body or clothing.
10. In the Operating and Maintenance Manual of the Argon Purity Analyzer, it is noted that this unit has a 100 watt heater. Since the release of tritium increases with the amount of heat applied, please describe how you will not release all the tritium on the foil. You should consider using a temperature limiting device on the analyzer that will not allow the temperature to exceed 225°C.

11. In the Operating and Maintenance Manual of the Argon Purity Analyzer, you do not specify if the exhaust ports on this device will be vented to the outside. Please specify if the analyzer will be vented to the outside.
12. In your application, you do not specify if you will be pre-conditioning the tritium foils before installing them on the analyzer. Please indicate that pre-conditioning will or will not be performed. If pre-conditioning will performed, please specify the airborne monitoring on the effluent air to insure that the concentrations released are in compliance with 10 CFR 20.106.
13. In your application, you did not describe your procedure for monitoring incoming shipments of radioactive materials (10 CFR 20.205(d)). Please specify your procedures for surveying the radiation and contamination levels on these packages. In addition, who will assume the responsibility for monitoring these packages.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 03344.

Sincerely,

Original Signed By:  
Jack Davis

Jack Davis, Radiation Specialist  
Nuclear Materials Safety Section A  
Division of Radiation Safety  
and Safeguards

Enclosures:

10 CFR Part 20

Regulatory Guide: Application of Bioassay for Tritium

RI:DRSS  
Davis/cjm  
2/20/85

~~RI:DRSS  
Kinneman  
2/ /85~~

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02/19/85



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

January 28, 1985

SOURCE AND DEVICE EVALUATION  
TECHNICAL ASSISTANCE REQUEST

*red 3-15-85*  
**EXPEDITE**

Date: January 28, 1985

To: Material Certification and Procedures Branch  
7915 Eastern Avenue  
Willste Building  
Silver Spring, MD 20910

From: John Glenn/Jack Davis  
Region I  
Phone number 1-488-1250

*John E. Glenn*

License Control Number: 03344

License Number (if applicable): new license

Letter/Application dated: December 11, 1984

Air Products and Chemicals, Inc.  
P. O. Box 538  
Allentown, PA 18105

Assistance Requested:

- ☐ Custom Source Review  
☒ Custom Device Review  
☐ New Source Review  
☐ New Device Review  
☐ Amendment to Registr, Sheet No. \_\_\_\_\_  
☐ Other (see remarks below)

remarks: Please make a FAST determination  
if Air Products needs a custom review?  
Return package to Region I for license review  
if not.

- 0 Catalog has been checked. No information is available on the source/device,  
0 Source will be imported,  
0 Device will be imported,  
0 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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BETWEEN: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION 1

1. APPLICATION ATTACHED

Applicant/Licensee: Air Products and Chemicals, Inc.

Application Dated: 12/11/84

Control No.:

03222 VO1D  
~~3122~~ 03344

License No.:

New

2. FEE ATTACHED

Amount: \$230.00

Check No.: 485785

3. COMMENTS

Signed Brenda Platchek

Date 12/17/84

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount:

3P \$230

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

Amendment \_\_\_\_\_

Renewal \_\_\_\_\_

License ✓

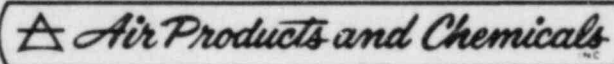
Signed Frances Brown

Date 12/24/84

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ALLENTOWN, PENNSYLVANIA

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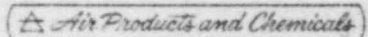
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VENDOR CODE

PAY \*\*\*\*\*\$230.00\*\*

PAY TO THE  
ORDER OF

U S NUCLEAR REGULATORY COMM  
REG. 1 NUCLEAR MAT'L  
SECTION B  
631 PARK AVE.  
KING OF PRUSSIA, PA.  
19406



THE CITIZENS & SOUTHERN NATIONAL BANK  
ATLANTA, DEKALB COUNTY, GEORGIA

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AUTHORIZED SIGNATURE

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