



3434 Route 22 West, Branchburg NJ 08876 USA. tel: 908.252.9300 or 800.932.0624 fax: 908.252.0811

Licensing Assist Team
United States Nuclear Regulatory Commission
Region One Office
(Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety)
475 Allendale Road
King of Prussia, PA 19406-1415

N1582

2007 JUL 23 PM 2:17

RECEIVED
REGION 1

SUBJECT: SPECTRA GASES, INC., REQUEST FOR AMENDMENT CONCERNING
CURRENT LICENSE, CONTROL NO. ~~132182~~ ¹⁴⁰⁸⁴⁹

July 17, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

03036136

This is to request an amendment to our current NRC license number 29-30779-01. We wish to amend our current status by adding another process for the removal of tritium in solution. This will not affect the overall maximum threshold (75 curies of tritium) currently defined in our license.

I have attached additional information regarding the changes to our radiation safety program with this amendment request needed for your review.

Please contact me with questions or for more information @ 908-252-9300 ext. 6241 or via email @ michaelb@spectragases.com.

Sincerely,

Michael Baseline
RSO, Spectra Gases Inc.

cc: Alvin Dietz, CEO

140849

NMSS/RGN1 MATERIALS-002

NRC FORM 313

(10-2005)
10 CFR 30, 32, 33,
34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIAL LICENSE

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 10/31/2008

Estimated burden per response to comply with this mandatory collection request: 4.4 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. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

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:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

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 BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-4005

030 36136

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

29-30779-01

☐

C. RENEWAL OF LICENSE NUMBER

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

SPECTRA GASES, INC
3434 rte 22 W
BRANETBURG, NJ 08876

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

SPECTRA GASES
320 Mt. PLEASANT AVE.
NEWARK, NJ 07104

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

MICHAEL BASELICE

TELEPHONE NUMBER

908-252-9300

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. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY AMOUNT ENCLOSED \$

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

MICHAEL BASELICE, RSO

SIGNATURE

Michael Baslice

DATE

7/29/07

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		

APPROVED BY

DATE

NRC License Addendum to Application 313 Items 5-11 Amendment to add new process for removing tritium (H-3) from O-18 water

5. **Tritium (H-3)** is an isotope of hydrogen with a mass of three. Tritium in solution is a very minor contaminant in the purchased source material with the primary product, O-18 water, and is in solution in very low concentrations (~ 8 uCi/ml). It is typically contained in one liter bottles.

- a. Manufacturer's Name: Various Positron Emission Topography (PET) diagnostic centers throughout the world.
- b. Activity per source material (one bottle with ~ one liter of product) is likely to contain eight mCi in 1000 ml total product. Maximum activity is estimated to be 20 mCi for total of 1000 liters O-18 water. It is unlikely that we will receive a liter of product that exceeds 50 mCi per one liter bottle of O-18 water.

Total activity for all tritium in solution and gaseous form will not exceed 75 Curies. This includes all carbon steel or stainless steel containers and bottled tritiated O-18 water on-site whether in inventory, returned material, waste or in process.

6. Use of each radioisotope

Radioisotope	Chemical/Physical Form	Maximum Possession Limit	Proposed Use
Tritium (H-3)	Solution and Gaseous Form	75 Curies	<p>Solution, O-18 water: Removal of H-3 contaminant from inert gas and O-18 water sources; use the detritiated O-18 water for commercial applications.</p> <p>Gaseous, Inert product: Same as previously submitted; removal of H-3 contaminant from inert source for commercial applications.</p>
Kr-85	Gaseous Form only – unbound	100 Curies	Same as previously submitted

7. Individuals responsible for program: Radiation Safety Officer (RSO), Authorized Users (AU's), and Frequent Restricted Area Employees.

- a. The executive committee fully supports the Radioactive Team and provides all the necessary resources to fulfill this project in a manner that fulfills all regulatory requirements. It is committed to assuring every reasonable precaution is considered and implemented so as to protect company workers and the public.
- b. Org Chart.

The organization has not changed from the previous submission for a new license.

Radiation Safety Officer (RSO): Michael Baselice (same as in new license application) – in addition to the previously submitted information and additional experience, Michael has attended two 40 hr comprehensive courses for RSO's and annual on site trainings conducted by the Radiation Safety Academy in Gaithersburg, Maryland.

Authorized Users: Jorge Silva (same as in new license application) – in addition to the previously submitted information and additional experience, Jorge has attended two 40 hr comprehensive courses for RSO's and annual on site trainings conducted by the Radiation Safety Academy in Gaithersburg, Maryland.

Bill Novak (same as in new license application) – in addition to the previously submitted information and additional experience, Bill has attended a 40 hr comprehensive course for RSO's and annual on site trainings conducted by the Radiation Safety Academy in Gaithersburg, Maryland.

8. Training

This information has previously been submitted and has not changed.

9. Describe facilities and equipment.

Facility, equipment and general process description diagrams are attached in Appendix A.

Tritium rooms for both storage and process, already under the auspices of the NRC, are dedicated to tritium (contaminant) source product storage and processing. These rooms will be restricted to those trained in the radiation safety program. Along with time and distance, shielding will be used with the intent of minimizing exposure to meet ALARA limits. Tritiated O-18 water containers (source) will be properly received and placed in the storage room (or immediately in the dedicated O-18 hood area) in preparation of processing. Tritium specific monitors will be used; one in each room to monitor /assure tritium is not airborne during time of use, if desired. The detectors will be set to alarm at or below 10% of the DAC given in 10CFR 20 Appendix B.

Facilities and Equipment, con't.

Tritium specific monitor(s) will be used to monitor H-3 through the stack. The detectors will be set to alarm below the acceptable threshold for ventilation through the stack.

Dispersion model information is not applicable.

The building is protected two fold: 1) by physical barriers at all windows/doors and 2) alarm trips throughout that will signal the local police department immediately.

10. Radiation Safety Program

a. Audit Program

This information has previously been submitted and the scope has not changed.

b. Radiation Monitoring

We will continue to use instruments that meet the radiation monitoring instruments specifications published in Appendix K to NUREG-1556, Volume-12. We reserve the right to upgrade our survey instruments as necessary.

c. Material Receipt and Accountability

Spectra Gases Inc. intends to use the guidance found in section 8.10.3 of NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution' which includes material accountability procedures based on Appendix L.

In addition, physical inventories will be conducted at intervals not to exceed two months, to account for all source material received and possessed under the license.

d. Occupational Dose

We have done a prospective evaluation and determined that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will monitor individuals in accordance with the criteria in the section entitled 'Radiation Safety Program - Occupational Dose' in NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

e. Public Dose

Though no response is necessary, Spectra Gases Inc. may incorporate or use, as applicable, the guidance provided in NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

Radiation Safety Program, Con't.

f. Safe Use of Radio Nuclides and Emergency Procedures

Procedures for safe use, including security of materials, and emergencies will be developed and/or modified before receipt of licensed material. Procedures may be revised only if 1) the changes are reviewed and approved by the licensee management and the RSO in writing; 2) the licensee staff is provided training in the revised procedures prior to implementation; 3) the changes are in compliance with the NRC regulations and the license; and 4) the changes do not degrade the effectiveness of the program.

g. Survey and Leak Tests

We will survey our facility and maintain contamination levels in accordance with the survey frequencies and contamination levels published in Appendix R to NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

h. Maintenance

Though no response is necessary as per NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

i. Transportation

Though no response is necessary as per NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

j. Minimization of Contamination

Though no response is necessary as per NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.

k. Waste Management

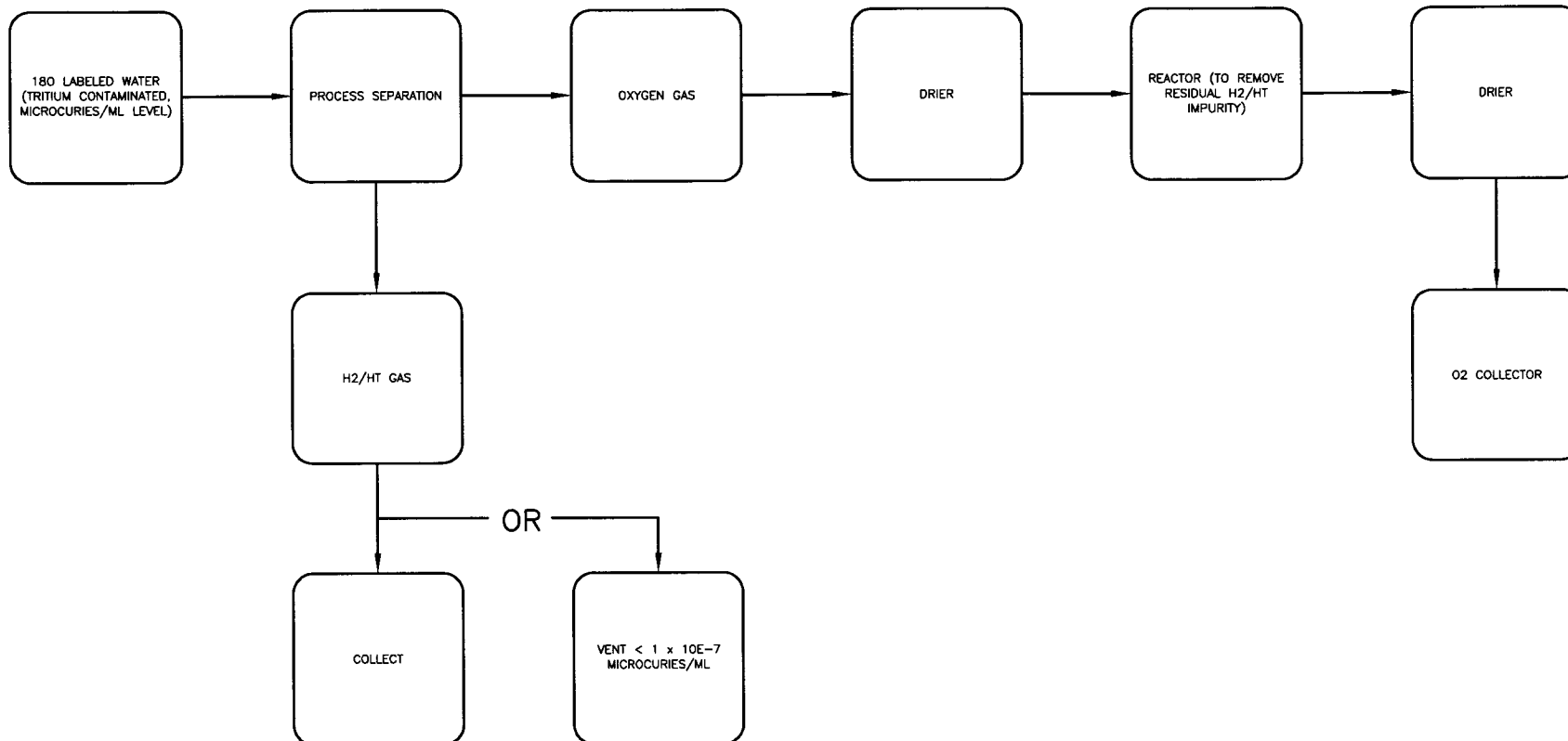
We will continue to use a reputable waste disposal service to handle containers or equipment for transfer to an authorized radioactive waste disposal site on a as needed basis, following our current procedures to store and prepare containers for transfer. Spectra Gases Inc. may incorporate or use, as applicable to modify current procedures, the guidance provided in NUREG - 1556, Vol. 12, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Possession Licenses for Manufacturing and Distribution'.



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Appendix A



SG ISO 9001	EQUIPMENT DIVISION SPECTRA GASES INC. 1224 SO. MAIN STREET POHATCONG, NJ 08865 (908) 387-0300	REV. LETTER	DATE	REV. BY	DRR #	REVISION DESCRIPTION	
		TITLE: 0-18 WATER PURIFICATION					
TOLERANCES: UNLESS OTHERWISE SPECIFIED DIMS ARE IN INCHES FRACTIONAL $\pm 1/64$ ANGULAR $\pm .5^\circ$ 2 PLC DEC. .XX $\pm .01$ 3 PLC DEC. .XXX $\pm .005$		ALL DESIGNS, PLANS, SPECIFICATIONS, OR IDEAS IN THIS MATERIAL REMAIN THE ENTIRE PROPERTY OF SPECTRA GASES, INC. AND MAY NOT BE REPRODUCED OR USED IN ANY MANNER WITHOUT ITS WRITTEN CONSENT.		SIZE: \textcircled{B} SCALE: NONE	DRAWN BY: WDM DATE: 6-26-07	APPROVED BY:	DRAWING NO.: 004208 SHEET 1 OF 1

This is to acknowledge the receipt of your letter/application dated

7/17/2007, and to inform you that the initial processing which includes an administrative review has been performed.

☒ AMEND. 29-36779-01
There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 140849.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.