



# SPECTRA GASES

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Region One Office  
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MS16  
Q-5

29-30779-01  
03036136

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

August 27, 2007

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

2007 AUG 31 PM 12:32  
RECEIVED  
REGION 1

Dear Elizabeth:

This is our response to your email dated August 21, 2007 in regard to our original amendment request dated July 17, 2007.

1) "If I understand you application correctly, you are planning to receive tritiated water in order to recover the oxygen-18. I further understand that your processing will result in a useful product line of oxygen gas (O<sub>2</sub>) that is labeled with O-18, and a waste stream of tritiated hydrogen gas. If my understanding is incorrect, please let me know. Will the O-18 oxygen gas product also be included in your Item 9.A "distribution of gas products to persons exempt form licensing in accordance with 10 CFR 30.14" authorization? Please note that in Item 6 of your application, you have as the proposed use "use the de-tritiated O-18 water for commercial applications" so that it appears you will have a liquid product, not a gaseous product".

Response: Yes, your description is accurate. Our oxygen product (enriched O-18) will not contain tritium near or above the exempt concentration level defined under 10 CFR 30.14 and the corresponding table in section 10 CFR 30.70, "Schedule A – Exempt Concentrations." Please note that the licensing portion of this process will end when we successfully purify our <sup>18</sup>O<sub>2</sub> gas by removing tritium to a concentration below the required exempt threshold defined under 10 CFR 30.14 and 30.70. The purified de-tritiated <sup>18</sup>O<sub>2</sub> gas will then be transferred to one of our manufacturing sites for further processing.

2) "Briefly describe the handling and processing procedures for the tritiated water you wish to receive for removal of the tritium. Identify any areas in particular that may raise radiation safety concerns (potential for contamination from tritiated water or uptake from tritiated water/water

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NMSS/RGN1 MATERIALS-002

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vapor) that are different from those items already addressed by your handling of tritiated hydrogen gas”.

Response: Incoming water containers will be placed in quarantine and surveyed as per our procedure to assure no leaks occurred in transit. Upon successful test results, the product will be transferred to a monitored storage room and placed in a sealed secondary containment. The room is currently monitored by a highly sensitive ion chamber. At time of processing, the Spectra AU will transfer water containers from the storage room to the processing hood and be placed in a glove box which will be vented to a dedicated stack and monitored. Once in our glove box, it is extremely unlikely any detectable or material exposure will be realized (as is the case with our other de-tritiated process).

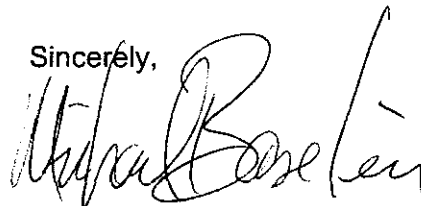
Additionally, the resulting hydrogen gas stream will be dried in a manner that will eliminate/remove tritiated water. The oxygen stream will also be dried and collected in cylinders eliminating any concern for room or atmospheric contamination.

3) “You committed to performing surveys in accordance with App R of Vol 12; however, App R deals with transportation. Confirm that you will correct this to Appendix P “Radiation Safety Survey Topics” and please let me know how frequently you expect to perform surveys of areas where tritiated water is used (App P provides categories and modifying factors but you have to determine what is applicable)”.

Response: Spectra will follow App P of NUREG Volume 12, “Radiation Safety Topics” for guidance to perform surveys. We will typically survey after processing product with tritium contamination.

Please contact me with questions or for more information @ 908-252-9300 ext. 6241 or via email @ [michaelb@spectragases.com](mailto:michaelb@spectragases.com).

Sincerely,



Michael Baselice  
RSO, Spectra Gases Inc.

cc: Alvin Dietz, CEO  
Jack Faught, Business Manager