



BioTechnica International, Inc.

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April 9, 1985

License No. 20-20506-01
Docket No. 030-19347
Control No. 03494

MS 16
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U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Attention: Dr. John E. Glenn

Dear Dr. Glenn:

I am hereby providing the information you requested in your letter of March 27, 1985, as a supplement to our application for an amendment to Materials License #20-20506-01. Enclosed, in duplicate, are our greenhouse procedures for complying with 10 CFR 20.303, a description of our radioactive waste storage area, and confirmation of training for the Radiation Protection Officer. I have also included some additional information regarding our request for increasing the holding limit for Phosphorus-32.

I trust that this information will answer your questions and/or concerns and allow you to continue the review of our amendment application. Please contact me if you have further questions or require additional information. Thank you.

Sincerely,

Karen A. April

Karen A. April
Deputy Director
Laboratory Services

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1. Procedures to insure compliance with 10 CFR 20.303 in the greenhouse facility

- a) The primary radionuclides to be used in the greenhouse facility will be Carbon-14 and Sulfur-35. Maximum levels of activity to be used per experiment are as follows:

Carbon-14, 20 microcuries
Sulfur-35, 1 millicurie

- b) Each individual pot will be watered individually, by hand, using a 2-quart watering can. Automatic watering systems are not anticipated at this time.
- c) Run-off water from the watering of all pots containing radionuclides must be collected for sampling and proper disposal. This will be done by placing these pots into Nalgene (polypropylene) basins. The water will then be collected into waste containers and sampled for activity using liquid scintillation counting (Beckman LS1800 was previously described in the original 1981 application).

Run-off water that has been collected and sampled will be discharged into the sanitary sewerage system provided that the levels of activity do not exceed the amounts specified in 10 CFR 20.303, particularly in paragraph (b)(1), Appendix B.

Records will be kept by the Radiation Protection Officer, of the type and quantity of radioactive material that is disposed of via the sanitary sewage system. Run-off water with levels of activity greater than that specified above will be temporarily stored as low-level radioactive waste and shipped out with our commercial waste disposal service.

2. Radioactive Waste Storage Area

As stated in the amendment application, all radioactive compounds with half-lives of one hundred (100) days or less are held for ten (10) half-lives for on-site decay. The radioactive waste storage area is located on the first floor of the building in an abandoned elevator shaft that has been refurbished for this purpose (see Fig. PII-B, highlighted in yellow).

The room is composed of cinder block walls and is approximately 11 x 17 feet in size. A solid, sliding steel door provides access to the room, which is secured by a three-inch padlock/bolt system. Keys to the lock are registered with Karen A. April, Radiation Protection Officer and Bud Mahon, Building Superintendent.

This room is used exclusively for radioactive waste. It currently contains 6, 55-gallon drums and 4, 30-gallon drums. A number of these have been sealed for decay while others are used as collection drums.

Scientific staff members do not have access to the storage area; low-level radioactive waste from individual laboratories is collected weekly by the Radiation Protection Officer, who is then responsible for segregating, storing and cataloguing the waste. This system maintains the security of the area and insures that radioactive wastes are properly stored for decay. After decay, the waste is surveyed by the Radiation Protection Officer, who approves and supervises the disposal.

3. Confirmation of Training

Karen A. April has completed, in full, the training program given by the Harvard University School of Public Health entitled "Occupational and Environmental Radiation Protection."

Attached is a copy of the certificate and number of credits earned. This should serve as confirmation of attendance and completion of the above.

4. Request to increase P-32 storage limit

During a telephone conversation with Dr. Edwin Wurtz on March 11, 1985, he expressed some concern over our request for a 500 millicurie limit of Phosphorus-32 with regard to the training and experience of the Radiation Protection Officer. Although your letter did not ask for information on this matter, BioTechnica wishes to amend the following information:

- a) Karen A. April has completed intensive training (see #3 above) and has experience in all facets of radiation safety (see Amendment Application, February, 1985).
- b) Andrea Jeffrey, named as the second alternate who will directly supervise the use of licensed material in Section 6 of the amendment application (February, 1985), has had considerable experience handling Phosphorus-32. During her ten (10) years as a laboratory assistant at Harvard University, Ms. Jeffrey handled as much as 100 millicuries, 1-2 times per week.
- c) In order to comply with the NRC regulations and to be prudent in the development of its safety programs, BioTechnica has been working with Mr. Mitch Gallanet, an outside consultant. He has been involved with all of our amendment applications and periodically reviews our operating procedures and safety programs. Mr. Gallanet is a member of the Radiation Safety Office at the Massachusetts Institute of Technology.



HARVARD SCHOOL OF PUBLIC HEALTH

BOSTON, MASSACHUSETTS

THIS CONFIRMS THAT

KAREN A. APRIL

participated in the course entitled

OCCUPATIONAL & ENVIRONMENTAL RADIATION PROTECTION

conducted by

*the Department of Environmental Science and Physiology
and the Office of Continuing Education*

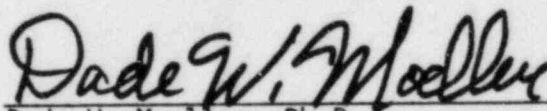
MARCH 25 to MARCH 29, 1985.

James Shapiro
Course Director

Dade W. Moeller
Director, Office of Continuing Education

This is to certify that the course, "Occupational and Environmental Radiation Protection," conducted March 25-29, 1985 at the Harvard School of Public Health has been awarded the following credits:

- 5.0 American Board of Industrial Hygiene
- 8.0 American Board of Health Physics
- 3.0 Continuing Education Units (CEUs)



Dade W. Moeller, Ph.D.

Associate Dean for Continuing Education

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