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April 12, 1985

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John E. Glenn, Ph.D., Chief
Nuclear Materials Safety Section B
Div. of Radiation Safety and Safeguards
U.S. Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

RE: License No. 06-11703-02
Docket No. 030-03829
Control No. 17480

Dear Sir:

In response to your letter dated March 25, 1985, the following information addresses items 2, 3, and 4, respectively, which are enumerated in that correspondence.

Item 2

The only ancillary personnel whose duties would require entrance into the "restricted area" would be maintenance and security personnel. No clerical or house-keeping personnel is permitted to enter the "restricted area".

All typing, etc. is handled outside the radio-isotope laboratory and all house-cleaning is done by the radio-isotope laboratory personnel (see enclosure addressed to L. Spizzirro).

The maintenance personnel and the security personnel who may be involved in entry into the "restricted area" will be given initial instructions as per 10 CFR, Ch. I, Pt. 19, §19.12. These instructions will be repeated on an annual basis hereafter (see enclosures addressed to L. Spizzirro and J. Cornelius). Mr. Spizzirro, Manager Technology Administration, and Mr. Cornelius, Manager of Security will be given similar instructions.

Item 3: Tritium Bioassay Program

I. Bioassays (urinanalyses) will be required whenever work using tritium or tritium-labeled compounds is being carried out.

II. All laboratory personnel involved in the work using tritium or tritium-labeled compounds or personnel sufficiently close to the work that intake of tritium is possible will participate in the Bioassay Program.

III. The following types of bioassays will be performed:

A. Baseline - Not more than one month prior to beginning work with tritium or tritium-labeled compounds.

B. Routine -

C. Post-operational - Within one month of last exposure to tritium or tritium-labeled compounds.

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D. Diagnostic - Within one week of any sample exceeding levels given as Action Points.

IV. Routine bioassays will be made within 48 hours whenever the activity level of the tritium or tritium-labeled compound being used at any one time is 25 mCi or more. Bioassays will be made within 48 hours whenever the cumulative activity level of the tritium or tritium-labeled compound exceeds 25 mCi within a period of one week or less. Bioassays will be made monthly when the activity level being used is less than 25 mCi per week.

V. New England Nuclear, 59 Albany Street, Boston, MA 02118 will be the commercial bioassay service used.

VI. The following are Action Points and corresponding Actions:

A. If urinary excretion rates exceed 5 μCi/l. but are less than 50 μCi/l., the following course of action will be taken:

1. A survey of the operations involved, including air and area monitoring, will be carried out to determine the cause of exposure and evaluate potential for further larger exposures.

2. Implement corrective actions which will lower the potential for further exposures.

3. A repeat urine sample will be taken within one week of the previous sample and evaluated within a week after collection.

4. Any evidence from (1) and (2) indicating that further work in the area might result in an employee receiving a dose commitment in excess of the limits established in §20.101 of 10 CFR Part 20 will make it mandatory that the employee will be removed from the work until the source of exposure is discovered and corrected.

B. If urinary excretion rates exceed 50 μCi/l., the following course of action will be taken:

1. Carry out all steps in A(1) to (4) above.

2. If the projected dose commitment exceeds 5 rems, report the incident to the NRC in accordance with §20.403 of 10 CFR Part 20.

3. Refer the case to an appropriate medical/health physics consultant for recommendations regarding therapeutic procedures to be carried out to accelerate removal of tritium from the body and reduce the dose as low as reasonably achievable.

4. Carry out repeated sampling (voidings of at least 100 ml. each) at weekly intervals until samples show excretion rates less than 5 uCi/l.

Item 4

In confirmation thereof please delete from our Application for Material License (dated 2/26/85) - Item 10 - C.1.b. "All 'clean-ups' attempt to bring any offending area down to a count of < 100 CPM." and replace by "Any area which shows removable contamination greater than 200 DPM/100 cm^2 will cause that area to be decontaminated".

We are hopeful that the above information fulfills your requirements regarding the items enumerated in your letter of March 25, 1985.

Upon re-reading our application, we find an omission and subsequent error was made in Item 8 - "Training for Individuals Working in or Frequenting Restricted Areas":

Item 8 - A.5 following "exposure", please insert -

Maintain a safe distance between your body and the radionuclide, i.e. a distance well exceeding the maximum range in air of the nuclide:

Maximum range in air:	H-3 (tritium)	6 mm
	C-14	24 cm
	S-35	30 cm

Then delete A.6 and A.7 as such and insert the following:

6. The amount of material, at times of use and/or disposal must be given to the supervisor to ensure maintenance of accurate records and inventory.

7. Always label your solutions and samples with the date of preparation, the radionuclide and the level of radioactivity present.

8. All radioactive waste is to be discarded in containers specifically marked and set aside for that purpose. These containers are kept in cupboards which are pad-locked at all times when not in use. See specific instructions for "The Handling of Radioactive Waste" posted on the inside of these cabinet doors.

9. Any case of radioactive spillage or contamination must be reported at once to the supervisor in charge.

10. Eating, drinking, smoking and the application of cosmetics are prohibited in areas where unsealed radioactive materials or poisons are in use.

11. All personnel working in restricted areas shall wear film badges.

12. All laboratory personnel involved in the work using tritium or tritium-labeled compounds or personnel sufficiently close to the work that intake of tritium is possible must submit urine samples for analysis within 48 hours whenever the cumulative activity level of the tritium or tritium-labeled compound exceeds 25 mCi within a period of one week or less. Bioassays will be made monthly when the activity level being used is less than 25 mCi per week and at completion of the project.

13. Radiation exposure reports of the worker are kept on file in the isotope lab and may be examined at any time upon request.

Again, we thank you for the helpful enclosure and wish to express our appreciation for your interest.

Hopefully, the above information and enclosures will expedite the renewal of our license.

Sincerely,

Catherine Morris
Supervisor, Radioisotope Lab.
Radiation Safety Officer

CM:jr
Enclosures

inter-office correspondence

TO L. Spizzirro

FROM C. Morris

DATE April 12, 1985

cc: M. Garcia
L. Wolfram

SUBJECT: Instructions to Ancillary Personnel re Radioactive Hazards

The Nuclear Regulatory Commission requires assurance that all ancillary personnel (clerical, maintenance - including house-keeping, etc.) whose duties require them to work in the vicinity of radio-active materials (whether escorted or not) be informed about radiation hazards and appropriate precautions. In order to simplify and assure compliance with this requirement, I ask that you:

1. instruct the house-cleaning personnel not to enter rooms 2S-47 and 2S-48 (the "restricted area") at any time. The house-cleaning, including the floors, will be done by the Isotope Laboratory personnel.

2. as a precautionary measure, bring to the attention of the clerical personnel that entry into the "restricted area" is prohibited to them - (this presents no problem since all typing, etc. is done outside the Isotope Laboratory).

3. make arrangements for any maintenance personnel whose work may require him to enter the "restricted area" (e.g. change lights, test hood ventilation, etc.) to receive initial and annual refresher instructions from the Radiation Safety Officer (at present C. Morris, Ext. 5014) re radiation hazards and appropriate precautions.

Thank you for your cooperation in this matter.

C. Morris

CM:jr

inter-office correspondence

TO John J. Cornelius

cc: M. Garcia
L. Wolfram

FROM C. Morris

DATE April 12, 1985

SUBJECT:

Instructions to Ancillary
Personnel re Radiation Hazards

The Nuclear Regulatory Commisssion requires assurance that all ancillary personnel (clerical, security, etc.) whose duties require them to work in the vicinity of radio-active materials (whether escorted or not) be informed about radiation hazards and appropriate precautions. This requirement includes any Security personnel who may be involved in the acceptance and secure deposition of packages containing radio-active material during "off hours".

To conform with this requirement and in the interest of safety, I ask that you make arrangements for any such personnel to receive initial and annual refresher instructions from our Radiation Safety Officer (presently C. Morris, Ext. 5014) regarding radiation hazards and any appropriate precautions.

Thank you for your cooperation in this matter.

C. Morris

CM:jr