

The University of Toledo



8005190204

April 8, 1980

2801 W. Bancroft Street
Toledo, Ohio 43606

College of Arts and Sciences
Department of Biology
(419) 537-2065

Mr. A. B. Davis, Chief
Fuel Facility and Materials Safety Branch
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

RE: License No. 34-10247-06
License No. SUD-815
License No. SNM-915

Dear Mr. Davis:

We hereby acknowledge receipt on March 26, 1980, of a communication from your office dated March 24, 1980, which details for us the results of a recent NRC inspection of our facilities by Mr. Donald J. Sreniawski. We understand from this report that no items of non-compliance with NRC requirements were identified for our license No. SUD-815. We do understand, however, that certain of our activities for our NRC By-product Materials License No. 34-10247-06 and our Special Nuclear Materials License No. SNM-915 are in non-compliance and that we have not provided a complete response to IE Bulletin No. 79-19. Please note that specific responses to your notice of violation are contained in Appendix A which is attached to this letter. Responses to IE Bulletin No. 79-19 for our License No. 34-10247-06 are contained in Appendix B. If additional information is necessary for any of the above items please feel free to contact me. Thanking you in advance for your attention to this matter and for the assistance you have rendered for the development of our radiation safety program, I am

Sincerely yours,

A handwritten signature in cursive script that reads "William L. Bischoff".

William L. Bischoff, Ph.D.
Associate Professor of Biology
Radiation Safety Officer

WLB:sw

cc: Dr. Robert Sullivant
Mr. Donald Sreniawski

APR 16 1980

APPENDIX A

Responses to Notice of Violation

University of Toledo
Toledo, Ohio 43606

License No. 34-10247-06
License No. SNM-915

A. License No. 34-10247-06 - Infraction

NRC Inspection Report dated March 24, 1980: Condition 15 of your license requires that licensed material be possessed and used in accordance with statements, representations and procedures contained in your Radiation Safety Manual dated March, 1975. Section III E2. of that manual, entitled "Personal Hygiene and Practice", states "No smoking, drinking or foods in Performance Area".

Contrary to the above, on the day of inspection, it was noted that food was being consumed and stored in room 256 of the Health Education Department and beverages stored in a refrigerator in room 2003 of the Biology Department. Radioactive isotopes were used in both rooms and the rooms and refrigerators were posted "Caution - Radioactive Materials".

Response

(1) Corrective action taken and results achieved:

- (a) An inspection of all approved isotope utilization facilities at the University of Toledo was conducted on March 28, 1980, by the Radiation Safety Officer. This inspection revealed that all working areas and isotope storage facilities were free of food and beverages. Food preparation utensils were removed from room 256 of the Health Education Department and from room 2003 of the Biology Department.

(2) Corrective Action to be Taken to Avoid Further Non-compliance:

- (a) All approved isotope users at the University of Toledo as well as their students have been notified of this infraction and have been informed in writing as to specific regulations prohibiting the storage and consumption of food materials in areas where radioactive materials are used as outlined in "The University of Toledo Radiation Safety Manual".
- (b) Signs prohibiting the consumption of food and beverages have been ordered and will be posted at the entrance doors to all approved isotope usage areas within 30 days of the date of this letter.
- (c) Unannounced spot inspections of approved isotope usage areas will be conducted at monthly intervals (or as deemed necessary) by the Radiation Safety Officer to enforce the "No eating or drinking regulation". Violators will be subject to disciplinary action (i.e.: revocation of isotope purchase privileges for some specified period of time) as determined by the radiation safety committee.

(3) Date When Full Compliance Will be Achieved:

- (a) We are presently in compliance with this regulation.

B. License No. SNM-915 - Infraction

NRC Inspection Report dated March 24, 1980: Condition 15 of your license requires that licensed material be possessed and used in accordance with statements, representations and procedures contained in your application dated March 27, 1957. Item 7 in the Appendix to that application states an instrument similar to the fast-slow neutron survey meter RCL Model 2806 will be available for radiation monitoring.

Contrary to the above, on the day of inspection, no neutron survey meter was available.

Response

(1) Corrective action taken and results achieved:

No neutron survey equipment is presently available at the University of Toledo with the exception of film badges (Searle Diagnostics) which are used for personnel monitoring in our sub-critical reactor facility. In the absence of specific instrumentation for measuring neutron levels three neutron-sensitive film badges will be placed at strategic locations in the hallway outside of our reactor facility (room 1002 in the Engineering Sciences building). Three badges will also be placed in critical positions inside of room 1002. These badges will be developed at bi-weekly intervals beginning approximately 30 days from the date of this letter. It should be noted that our sub-critical reactor is used by faculty in the Department of Physics only for a four to five week period during the spring academic quarter each year.

(2) Corrective Action to be Taken to Avoid Further Non-Compliance:

- (a) A new neutron survey instrument with capabilities which equal or exceed those of the specified RCL model 2806 will be chosen by the Physics Department and purchased by the University of Toledo for use in the sub-critical reactor area. It is anticipated that this instrument will be delivered to the University within 60 days from the date of this letter.
- (b) The new neutron survey instrument will be calibrated by the manufacturer at yearly intervals.

(3) Date When Full Compliance Will be Achieved:

- (a) It is anticipated that full compliance will be achieved no later than June 15, 1980.

C. License No. SNM-915 - Deficiency

NRC Inspection Report dated March 24, 1980: Condition 13B of your license requires, in part, that records of leak test results be maintained for inspection by the Commission.

Contrary to the above, no leak test records were available for the year 1978 and it was stated that leak tests were made of five Pu-Be neutron sources in the spring of that year.

Response

(1) Corrective Action Taken and Results Achieved:

The 1978 leak test records were misplaced as a result of personnel changes which have taken place in the Physics Department during the 1978 academic year. Leak test records for 1977 and 1979 are available for inspection. Such tests are presently being conducted by Dr. Richard Schectman, Professor of Physics, prior to and shortly after use of the sub-critical reactor during the spring academic quarter each year. Even after an exhaustive search by several members of the Physics Department, the 1978 records have not been recovered.

(2) Corrective Action to be Taken to Avoid Further Non-compliance:

- (a) Beginning with the current spring academic quarter leak tests will be conducted as usual by Dr. Schectman or an authorized colleague from the Physics Department along with the University Radiation Safety Officer. The RSO will maintain records of all leak test results for future NRC inspections. This procedural change should prevent essential records from being inadvertently misplaced in departmental files.
- (b) In addition to the leak tests which are performed on the five Pu-Be neutron sources prior to and following use of the sub-critical reactor, these sources will in the future be checked regularly at three-month intervals.

(3) Date When Full Compliance Will be Achieved:

- (a) Full compliance is achieved as of the date of this letter.

APPENDIX B

Response to IE Bulletin 79-19

University of Toledo
Toledo, Ohio 43606

License No. 34-10247-06

Action to be Taken by Licensees:

To assure the safe transfer, packaging, and transport of low-level radioactive waste, each licensee is expected to:

1. Maintain a current set of DOT and NRC regulations concerning the transfer, packaging and transport of low-level radioactive waste material.

Complete copies of DOT 49 CFR Parts 100-199 with all recent revisions and NRC 10 CFR with all parts and recent revisions are kept on file in the office of the University of Toledo Radiation Safety Officer.

2. Maintain a current set of requirements (license) placed on the waste burial firm by the Agreement State of Nevada, South Carolina, or Washington before packaging low-level radioactive waste material for transfer and shipment to the Agreement State licensee. If a waste collection contractor is used, obtain the appropriate requirements from the contractor.

The University of Toledo is presently under contract with the Nuclear Engineering Company, Inc., P.O. Box 7246, Louisville, Ky. 40207, for the removal of low-level radioactive waste materials. This company presently ships these waste materials to the Richland, Washington, burial site. A copy of the State of Washington Radioactive Materials License No. WN-1019-2 issued to the Nuclear Engineering Co., Inc., along with all recent amendments and revisions is presently filed in the office of the University of Toledo Radiation Safety Officer.

3. Designate, in writing, people in your organization who are responsible for the safe transfer, packaging and transport of low-level radioactive material.

Radioactive isotopes are currently being used in twelve laboratories at the University of Toledo but the total amount of low level radioactive waste generated by approved users is small. Therefore, the transfer, packaging, and transport of low-level radioactive material for the University is currently handled on a part-time basis by one faculty member who has been designated contractually by the administration as "Radiation Safety Officer". Currently this position is maintained by Dr. William L. Bischoff, Associate Professor of Biology.

4. Provide management-approved, detailed instructions and operating procedures to all personnel involved in the transfer, packaging and transport of low-level radioactive material. Special attention should be given to controls on the chemical and physical form of the low-level radioactive material and on the containment integrity of the packaging.

Detailed instructions for transfer and packaging of low-level radioactive wastes have been compiled and are contained in the University of Toledo Radiation Safety Manual. Preparation of materials for transport to the Washington disposal site is carried out following specific written instructions provided by the Nuclear Engineering Co., Inc. All materials are packed for transport under direct supervision of the Radiation Safety Officer.

5. Provide training and periodic retraining in the DOT and NRC regulatory requirements, the waste burial license requirements, and in your instructions and operating procedures for all personnel involved in the transfer, packaging and transport of radioactive material. Maintain a record of training dates, attendees, and subject material for future inspections by NRC personnel.

Instructional seminars for approved isotope users and staff are currently held at yearly intervals under direction of the Radiation Safety Officer. Copies of revised DOT and NRC requirements are circulated to approved isotope users as they are received.

6. Provide training and periodic retraining to those employees who operate the processes which generate waste to assure that the volume of low-level radioactive waste is minimized and that such waste is processed into acceptable chemical and physical form for transfer and shipment to a low-level radioactive waste burial facility.

This requirement is currently being fulfilled under #5 above.

7. Establish and implement a management-controlled audit function of all transfer, packaging and transport activities to provide assurance that personnel, instructions and procedures, and process and transport equipment are functioning to ensure safety and compliance with regulatory requirements.

All transfer, packaging, and transport activities are the responsibility of the Radiation Safety Officer. These activities are presently audited at approximately three month intervals by a five member Radiation Safety Committee, members of which are designated yearly by the President.

8. Perform, within 60 days of the date of this bulletin, a management-controlled audit of your activities associated with the transfer, packaging and transport of low-level radioactive waste. Maintain a record of all audits for future inspections by NRC or DOT inspectors. (Note: If you have an established audit function and have performed such an audit of all activities in Items 1-6 within the past six months, this audit requirement is satisfied.)

The University of Toledo presently has an established audit function (see #7 above) which satisfies this requirement.

9. Report, in writing within 45 days, your plan of action and schedule with regard to the above items. In addition, provide response to the three questions below. Reports should be submitted to the Director of the appropriate NRC Regional Office and a copy should be forwarded to the NRC Office of Inspection and Enforcement, Division of Fuel Facility and Materials Safety Inspection, Washington, D.C. 20555.

The above requirements are currently being satisfied by procedures which are already being implemented at the University of Toledo.

Provide answers for 1978 and for the first six months of 1979 to the following questions:

1. How many low-level radioactive waste shipments did you make? What was the volume of low-level radioactive waste shipped?

1978: One shipment of low-level radioactive waste was made to the Nuclear Engineering Co., Inc.:

- (a) December 15, 1978 - 15 cubic feet of dispersed solid waste.

1979: Two shipments of low-level radioactive waste were made to the Nuclear Engineering Co., Inc.:

- (a) May 1, 1979 - 15 cubic feet of dispersed solid waste.
- (b) December 18, 1979 - 37 cubic feet of dispersed solid waste and 90 gallons of liquid.

2. What was the quantity (curies) of low-level radioactive waste shipped? What were the major isotopes in the low-level radioactive waste?

1978: (a) December 15, 1978
~ 9 mCi

1. 4 mCi ^3H
2. 4 mCi ^{14}C
3. 1 mCi ^{32}P

1979: (a) May 1, 1979
~ 5.7 mCi

1. 2.5 mCi each ^3H and ^{14}C
2. 0.7 mCi ^{125}I

(b) December 18, 1979
~ 20.045 Curies

1. 10 mCi each ^3H and ^{14}C
2. 20 Ci ^3H targets
3. 15 mCi ^{60}Co .

3. Did you generate liquid low-level radioactive waste? If the answer is 'yes,' what process was used to solidify the liquid waste?

Yes - by absorption on Perlite (Medium Grade).