



The University of Dayton

November 30, 1990

Mr. A. Bert Davis
Regional Administrator
U. S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Subject: Demand for Information
Docket No. 03018666
License No. 34-07958-05

Dear Mr. Davis,

Prior to receipt of your letter, dated November 2, 1990, I was in contact with Mr. John Madera, Region III, U.S. Nuclear Regulator Commission, regarding our application for License renewal. Mr. Madera indicated that we would be receiving your letter to which this is a response.

Following discussions with Mr. Madera and reviewing the program for use of radioactive byproduct materials at the University of Dayton, it was mutually agreed that the most prudent approach was to include in our license renewal, as condition No. 11 of the renewal, that the University of Dayton control possession of radioactive byproducts subject to the conditions specified under 10CFR30.35 below those levels requiring filing of decommissioning plans and financial certification for such. In the past week, we have received our license renewal and Condition 11 specifies that limitation.

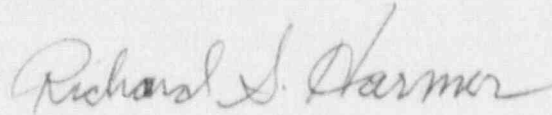
A review of our current inventory of radioactive materials subject to the requirements of 10CFR30.35 shows that the University of Dayton currently possesses approximately one-quarter of the material required of filing decommissioning plans and financial support for such. This value, based upon past history, is typical of our holdings.

RESEARCH INSTITUTE
Metals and Ceramics Division
300 College Park Dayton, Ohio 45469-0170
(513) 229-3527 FAX 229-3493

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REQ LIC30
34-07958-05 PDR

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I assume this response is appropriate to your request. If additional information is necessary, please contact me at your earliest convenience.

A handwritten signature in cursive script that reads "Richard S. Harmer".

Richard S. Harmer, Ph.D.
Radiation Protection Officer
University of Dayton
Dayton, Ohio 45469-0170

Encl: U.S. NRC License 34-07958-05, Amendment 01

cc: Director,
Division of Low-Level Waste
Management and Decommissioning
Office of Nuclear Material Safety and Safeguards
Washington, D.C. 20555

MATERIALS LICENSE

Amendment No. 01

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with application dated July 26, 1990	
1. University of Dayton Metals and Ceramics Division		3. License number 34-07958-05 is renewed in its entirety to read as follows:	
2. 300 College Park Dayton, OH 45469-0170		4. Expiration date	December 31, 1995
		5. Docket or Reference No	030-18666
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	
A. Any byproduct material with Atomic Nos. 3 to 83, inclusive	A. Any	A. 25 millicuries of each byproduct material with Atomic Nos. 3 to 83 inclusive, with a total of 250 millicuries except as listed specifically below:	
B. Hydrogen-3	B. Any	B. 50 millicuries	
C. Carbon-14	C. Any	C. 50 millicuries	
D. Calcium-45	D. Any	D. 5 millicuries	
E. Iron-55	E. Any	E. 5 millicuries	
F. Strontium-90	F. Any	F. 1 millicurie	
G. Bismuth-207	G. Any	G. 1 millicurie	
H. Americium-241	H. Any	H. 2 millicuries	
I. Promethium-147	I. Sealed source (Radio Chemical Centre Model No. PHX.31)	I. 10 curies	
J. Hydrogen-3	J. Foil source (Varian Aerograph Electron Capture Detector Cell Model No. 02-1681-01)	J. 1 curie	

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6. Byproduct, source, and/or special nuclear material

7. Chemical and/or physical form

8. Maximum amount that licensee may possess at any one time under this license

K. Nickel-63

K. Foil source
(Varian Associates
Electron Capture
Detector Cell Model
No. 02-1976-00)

K. 8 millicuries

9. Authorized Use

A. through I. To be used for laboratory research as described in letter dated November 1, 1990 and student instruction.

J. and K. To be used in gas chromatographs for sample analysis.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 300 College Park Avenue, Dayton, Ohio.

11. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.

12. A. Licensed material shall be used by, or under the supervision of, individuals designated by the Radiation Safety Committee, Richard S. Harmer, Ph.D., Chairman.

B. Individuals designated to use licensed material shall meet the training and experience criteria specified in 10 CFR Part 33, Section 33.15(b)(1) and (2).

C. The Radiation Protection Officer for the activities authorized by this license is Richard S. Harmer, Ph.D.

13. A. (1) Each sealed source acquired from another person and containing licensed material, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas shall be tested for contamination and/or leakage before use. In the absence of a certificate from a transfer or indicating that a test has been made within 6 months before the transfer, a sealed source received from another person shall not be put into use until tested.

(2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting materials or 10 microcuries or less of alpha emitting material.

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- (3) Except for alpha sources, the periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage before any use or transfer to another person unless they have been leak tested within 6 months before the date of use or transfer.
- B. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to use or transfer as a sealed source. If the inspection or test reveals any construction defects or 0.005 microcurie or greater of contamination, the source shall not be used or transferred as a sealed source until it has been repaired, decontaminated and retested.
- C. Each sealed source containing licensed material, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed 6 months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed 3 months.
- D. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission. Records may be disposed of following Commission inspection.
- E. If the test required by Subsection A. or C. of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, ATTN: Chief, Nuclear Materials Safety Branch, describing the equipment involved, the test results, and the corrective action taken.
14. Sealed sources containing licensed material shall not be opened.
15. Detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.
16. A. Detector cells containing titanium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 225 degrees Centigrade.
- B. Detector cells containing scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 325 degrees Centigrade.

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17. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
18. Licensed material shall not be used in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
19. The Radiation Safety Officer shall have the authority to immediately halt any activity he judges to be a threat to health, safety, property, the environment or a violation of the conditions of this license or the regulations.
20. The licensee shall maintain records of information important to safe and effective decommissioning at the location listed in item 2 of this license per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
21. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
 - A. Applications dated July 26, 1990 (with attachments); and
 - B. Letter dated November 1, 1990 (with attachment).

For the U.S. Nuclear Regulatory Commission

Date: November 15, 1990Original Signed
By John R. Madera
Materials Licensing Section, Region III
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