

MATERIALS LICENSE

Amendment No. 21

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, 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 November 26, 1986,	
1. Mallinckrodt Medical Inc. NMA Medical Physics Consultation		3. License number 34-16272-01 is amended in its entirety to read as follows:	
2. 9457 Midwest Avenue Cleveland, Ohio 44125		4. Expiration date	September 30, 1994
		5. Docket or Reference No.	030-10703
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. 3-83, inclusive	A. Leak test samples	A. See Item 9.A. below	
B. Cesium-137	B. Sealed sources (New England Nuclear Model Nos. NES-356, NES-360, or NES-367)	B. No single source to exceed 250 microcuries. Total possession limit not to exceed 2.0 millicuries.	
C. Barium-133	C. Sealed sources (New England Nuclear Model Nos. NES-358 or NES-367)	C. No single source to exceed 250 microcuries. Total possession limit not to exceed 2.0 millicuries.	
D. Cobalt-60	D. Sealed sources (New England Nuclear Model Nos. NES-354, NES-360, or NES-367)	D. No single source to exceed 50 microcuries. Total possession limit not to exceed 1.0 millicurie.	
E. Technetium-99m	E. Any	E. 500 millicuries.	
F. Any byproduct material with Atomic Nos. 3-83, inclusive	F. Sealed sources (which have been evaluated and approved by the Commission in accordance with Section 32.10 of 10 CFR Part 32 or equivalent Agreement State requirements).	F. No single source to exceed 1.0 millicurie. Total possession limit not to exceed 20 millicuries.	

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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

G. Cesium-137

G. Sealed sources (Tech/
Ops Model 77302)

G. Two sources not
to exceed 165
millicuries each.

9. Authorized Use:

A. Possession incident to the performance of tests for leakage and/or contamination on sealed sources containing licensed material specified in Item 6 of application dated November 25, 1986.

B. through F. To be used for instrument calibration and testing.

G. To be used in Tech/Ops Model 773 instrument calibrator for commercial survey instrument calibrations.

10. A. Tests for leakage and/or contamination shall be performed only at temporary job sites of the licensee anywhere in the United States where the Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material. Analysis of leak test samples may be performed at the licensee's facilities at 9457 Midwest Avenue, Cleveland, Ohio 44125. Licensed material in Subitems 6.B through 6.G shall be used only at the licensee's facilities at 9457 Midwest Avenue, Cleveland, Ohio 44125, and at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of the licensed material.

B. Licensed material listed in Subitems 6.B, 6.C, 6.D, 6.E. and 6.G may be used and/or stored at the licensee's facilities located at 9455 Midwest Avenue, Garfield Heights, Ohio.

11. Licensed material shall be used by, or under the supervision of:

Paul J. Farly

William H. Miller

David W. Close

Steve A. Spinosi

W. Chris Wagner

Frank T. Bloer

Samuel A. Pontillo

Ronald Scala

Margaret M. Reilly

Mark Beanblossom

Daniel Patrick

Amy Sakaluk

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11. (Continued)

Colleen Rose Brady

Thomas W. Dickinson

Andrew Williams

Robert K. Carlson

Danny H. Harris

Edward Johnston

Daniel F. Kane

Scott Surovi

Anthony Montagnese

Rebecca Louise Watson-Kirchner

12. The Radiation Protection Officer for the activities authorized by this license is Paul J. Early.

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 transferor 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.

(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.

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.

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11. (Continued)

- 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. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 2 years from the date of each inventory.
15. Sealed sources containing licensed material shall not be opened or removed from their respective source holders by the licensee.
16. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material".
17. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
 - C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

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18. 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 November 25, 1986 and February 16, 1989; and
- B. Letter dated December 1, 1986.



For the U.S. Nuclear Regulatory Commission

Original Signed

By Patricia J. Pelke

Materials Licensing Section, Region III

COPY

Date: August 2, 1989