

MATERIALS LICENSE

Amendment No. 13

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

1. University of Illinois at Chicago
Radiation Safety Office
339 CSN, m/c 932
2. Box 6998
Chicago, IL 60680

In accordance with application dated
October 18, 1985

3. License number 12-00088-08 is amended in
its entirety to read as follows:

4. Expiration date November 30, 1990

5. Docket or
Reference No. 030-00133

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

A. Cobalt-60

7. Chemical and/or physical
form

A. Teletherapy sealed sources
(AECL Model C-146 or
C-151)

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

A. 16,000 curies
(2 sources of not
more than 8,000
curies each)

9. Authorized Use

- A. One source to be used in an AECL Theratron 80 teletherapy unit for irradiation studies, as described in the licensee's application dated October 18, 1985, excluding irradiation of human beings and explosives. One source in its shipping container to be in possession of the licensee as necessary for replacement of the source in the teletherapy unit only.

CONDITIONS

10. Licensed material shall be used only at The University of Illinois at Chicago, Building 917, Room B2, Chicago, Illinois.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by, or under the supervision of, Raymond C. Barrall or Edwin J. Liebner, M.D.
13. A. Each sealed source shall be tested for leakage at intervals not to exceed six months. Records of test results shall be kept in units of microcuries and maintained for inspection by the Commission. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a source received from another person shall not be used until tested for leakage.

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- B. The tests shall be sufficiently sensitive to detect 0.05 microcurie of contamination on the test sample.
 - C. The test sample shall be taken from selected accessible surfaces of the source head. The selected accessible surfaces should be those surfaces on which one might expect contamination (if there were to be leakage) to accumulate and shall include the inner surface of the most frequently used beam collimating devices. The test sample shall be taken with the source in the "off" position.
 - D. If the test reveals the presence of 0.05 microcurie or more of removable contamination, the licensee shall promptly take action to prevent spread of contamination and shall file a report within five (5) days of the test with the Material Licensing Branch, Division of Fuel Cycle and Material Safety, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, describing the test results and the corrective action taken. A copy of such report shall also be sent to the U. S. Nuclear Regulatory Commission, Region III, 790 Roosevelt Road, Glen Ellyn, Illinois 60137.
14. A. Whenever the irradiator is in operation, an authorized user or other persons proved by the licensee as having fulfilled the requirements for irradiator operators shall be on duty and immediately available in the irradiator facility.
B. A set of written emergency instructions shall be posted at the irradiator machine control. These instructions shall inform the operator of the procedure to be followed should he or she be unable to turn the machine's primary beam of radiation "off" with the controls outside the irradiator room.
 15. A. Electrical interlocks on entrance doors to the irradiator room shall be tested for proper operation at least once every six months. Records of test results shall be maintained for inspection by the Commission.
B. In the event of malfunction of any door interlock, the machine control shall be locked in the "off" condition and not used, except as may be necessary for repair or replacement of the interlock system, until the interlock system is shown to be functioning properly.
 16. Subsequent to each installation of a sealed source, radiation surveys and tests shall be performed in accordance with the following:
A. A radiation survey shall be made of:
(i) The source housing, with the source in the "off" position.

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(ii) All areas adjacent to the irradiator room with the source in the "on" position. The survey shall be performed with a phantom in the primary beam of radiation and shall clearly establish:

(a) That radiation levels in restricted areas are not likely to cause personnel exposure in excess of the limits specified in Section 20.101, Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards for Protection Against Radiation" (10 CFR 20).

(b) That quantities of radiation in unrestricted areas do not exceed the limits specified in Section 20.105(b), 10 CFR 20.

B. Tests shall be made to determine proper operation of:

(i) Electrical interlocks on entrance doors to the irradiator room.

(ii) The source "on-off" indicators, both at the source housing and on the irradiator machine control panel.

(iii) Electrical or mechanical stops installed for the purpose of limiting use of the primary beam of radiation (restriction of source housing angulation or elevation, carriage or stand travel and operation of the beam "on-off" mechanism).

C. A report of the results of the above surveys and tests shall be sent to the U. S. Nuclear Regulatory Commission, Region III, Materials Licensing Section, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, not more than 30 days after each installation of a source.

17. A. Any changes made in the irradiator room shielding, location of the unit within the irradiator room, or use of the irradiator unit that could result in increased radiation levels in areas outside the irradiator room shall be evaluated by a radiation survey made in accordance with Condition No. 16., and reported to the Commission within thirty (30) days following completion of the change(s).

B. Relocation of the irradiator to a new facility is not permitted without prior approval of the plans and details by the Commission. Following such approval and relocation, a radiation survey shall be made in accordance with Condition No. 16., and reported to the Commission within thirty (30) days after completion of the move.

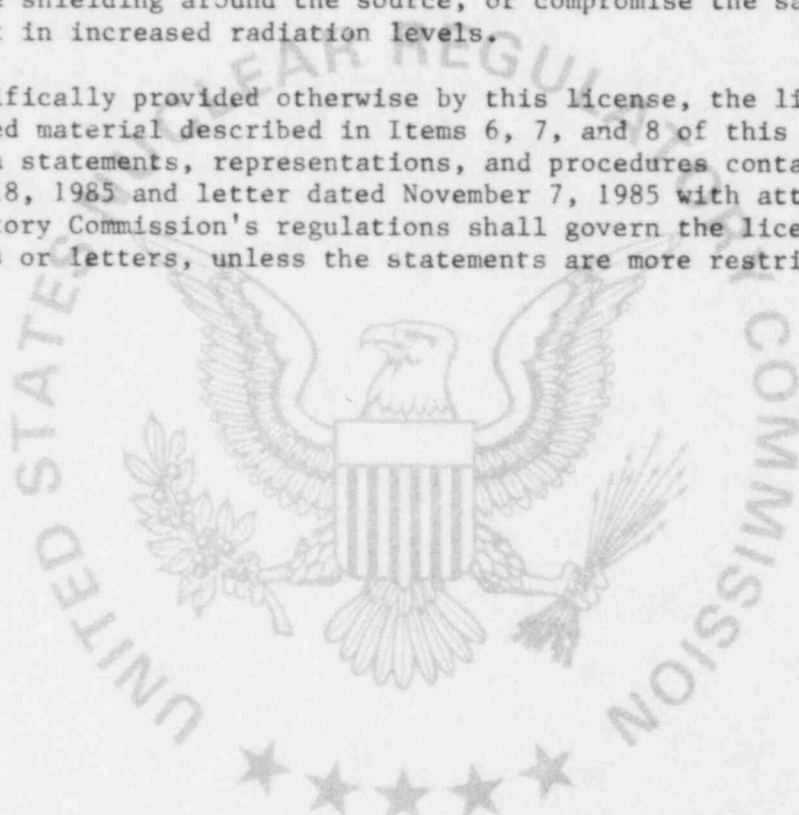
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18. The following shall be performed only by persons specifically authorized by the Commission or an Agreement State to perform such services:
- A. Installation, relocation, or removal of the irradiator.
 - B. Source exchange.
 - C. Any maintenance or repair operations on the irradiator involving work on the source drawer, the shutter, or other mechanism that could expose the source, reduce the shielding around the source, or compromise the safety of the unit and result in increased radiation levels.
19. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated October 18, 1985 and letter dated November 7, 1985 with attachments. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.



For the U.S. Nuclear Regulatory Commission

NOV 25 1985

Date _____

Original Signed
By B. J. Holt
Materials Licensing Section, Region III

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