MATERIALS LICENSE

Amendment No. 23

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. Methodist Hospital of Indiana, Inc.	In accordance with letter dated July 31, 1985 3. License number 13-02063-02 is amended in its entirety to read as follows:
2. 1604 North Capitol Avenue Indianapolis, IN 46202	4. Expiration date: December 31, 1990
	5. Docket or Reference No.: 030-00195

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. Cobalt-60	A. Sealed teletherapy sources (AECL Model C-146 or C-151)	A. 14,320 curies (2 sources of not more than 7,160 curies each)

9. Authorized Use

A. One source to be used in a AECL Theratron 780 teletherapy unit for treatment of humans. One source in its shipping container to be in possession of the licensee as necessary to the replacement of the source in the teletherapy unit only.

CONDITIONS

10. Licensed material shall be used only at Methodist Hospital of Indiana, Inc., 1604 North Capitol Avenue, Indianapolis, Indiana.

11. Licensed material shall be used by, or under the supervision of, Newell O. Pugh, Jr., M.D., David B. Ross, M.D. or Peter Garrett, M.D.

12. A. Teletherapy sources shall be tested for leakage at intervals not to exceed 6 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 6 months before the transfer, a source received from another person shall not be used until tested for leakage.

B. The tests shall be sufficiently sensitive to detect 0.05 microcurie of contamination on the test sample.

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C. The test sample shall be taken from selected accessible surfaces of the teletherapy head. The selected accessible surfaces should be those surfaces on which one might expect contamination (if these were to be leakage) to accumulate and shall include the inner surface of the most frequently used treatment cones or beam collimating device. 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 immediately withdraw the source from use and take action to prevent spread of contamination. 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, Materials Licensing Section. The report shall specify the source involved, the test results, and corrective action taken.

13. Before initiation of a treatment program, each teletherapy unit shall be equipped with electrical or mechanical stops limiting use of the primary beam of radiation so as to ensure compliance with Section 20.105(b) of 10 CFR Part 20 as evidenced by a radiation survey. Necessary use restrictions shall be fully described in radiation survey reports submitted in accordance with Condition 16. of this license.

14. A set of written emergency instructions shall be posted at the teletherapy machine control. These instructions shall inform the machine operator of the procedures to be followed should he be unable to turn the machine's primary beam of radiation "off" with the controls outside the treatment room.

15. A. Access to the teletherapy room shall be controlled by a door at each entrance. Such doors shall be normally closed.

B. Each entrance to the teletherapy room shall be equipped with an electrical interlock system that will turn the teletherapy machine's primary beam of radiation "off" immediately upon opening of any entrance door. The interlock system shall be connected in such a manner that the teletherapy machine's primary beam of radiation cannot be turned "on" until all treatment room entrance doors are closed and the beam "on-off" control is reset at the control panel.

C. Electrical interlocks on entrance doors to the teletherapy room shall be tested for proper operation at least once every 6 months. Records of test results shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

D. In the event of malfunction of any door interlock, the teletherapy 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.

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16. Before initiation of a treatment program, and subsequent to each installation of a teletherapy source, radiation surveys and tests shall be performed in accordance with the following:

A. A radiation survey shall be made of:

(i) The teletherapy source housing, with the teletherapy source in the "off" position. The maximum and average radiation levels at 1 meter from the teletherapy source in the "off" position shall not exceed 10 milliroentgens per hour and 2 milliroentgens per hour, respectively.

(ii) All areas adjacent to the treatment room with the teletherapy source in the "on" position. The survey, except Item (c), 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 20.191 of 10 CFR Part 20.

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

(c) The intensity of the primary beam of radiation at a specified distance from the teletherapy source.

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

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

(ii) The teletherapy source "on-off" indicators, both at the source housing and on the teletherapy 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.

(iv) The teletherapy treatment timing device.

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

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17. A. Any changes made in the treatment room shielding, location of the unit within the treatment room, or use of the teletherapy unit that could result in increased radiation levels in areas outside the teletherapy treatment room shall be evaluated by a radiation survey made in accordance with Condition 16. and reported to the Commission within 30 days following completion of the change(s).

    B. Relocation of the teletherapy unit to the 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 16. and reported to the Commission within 30 days after completion of the move.

18. Pursuant to 10 CFR Part 40, "Domestic Licensing of Source Material", the licensee is authorized to possess, use, transfer, and import up to 999 kilograms of uranium contained as shielding material in the teletherapy units authorized by this license.

19. For a period not to exceed 60 days in any calendar year, a visiting physician is authorized to use licensed material for human use under the terms of this license, provided the visiting physician:

    A. Has the prior written permission of the hospital's Administrator and Radiation Safety Committee, and

    B. Is specifically named as a user on a Nuclear Regulatory Commission license authorizing human use, and

    C. Performs only those procedures which the physician is specifically authorized to perform pursuant to a license issued by the Nuclear Regulatory Commission.

    The licensee shall maintain for inspection by the Commission copies of the written permission specified in A. above and of the license(s) specified in B. and C. above for a period of 5 years from the date permission is granted under A. above.

20. The following shall be performed only by persons specifically licensed by the Commission or an Agreement State to perform such services:

    A. Installation, relocation, or removal of teletherapy units containing sources.

    B. Source exchange.

    C. Any maintenance or repair operations on a teletherapy unit 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.

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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. Letter dated January 5, 1965 with attached facility drawing dated December 3, 1964;

B. Letter dated August 28, 1978;

C. Letters with enclosures dated June 23, 1980 and November 4, 1982; and

D. Letters dated January 4, 1983, July 31, 1985, and December 9, 1985.

For the U.S. Nuclear Regulatory Commission

DEC 31 1985

Date _____

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

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