

**MATERIALS LICENSE**

Amendment No. 11

CORRECTED COPY

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.

**"OFFICIAL RECORD COPY"**

Licensee

In accordance with application dated  
January 15, 1985

3. License number 54-00300-12 is amended in its

entirety to read as follows:

4. Expiration date December 31, 1990

5. Docket or  
Reference No. 030-10623

1. Atomic Energy of Canada Limited

2. 413 March Road  
P.O. Box 13500  
Kanata, Ontario, Canada K2K 1X8

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. Cesium 137  
B. Cobalt 60

A. Sealed sources (AECL)  
B. Sealed sources (AECL)

A. See Condition 10  
B. See Condition 10

9. Authorized use

A. and B. For storage and/or possession in U.S. Department of Transportation approved shipping containers, AECL source drawers or AECL irradiators incident to the performance of the activities specified below involving AECL irradiator units specified in Condition 10 of this license.

- (1) Distribution to persons authorized to receive the licensed material pursuant to terms and conditions of specific licenses issued by the U.S. Nuclear Regulatory Commission or any Agreement State.
- (2) Installation into and/or removal from AECL Irradiator units and package for shipment.
- (3) Radiation surveys of irradiator units and facilities.
- (4) Leak testing of sealed sources.
- (5) Installation, relocation, removal, repair, maintenance, and operation testing of irradiator units.
- (6) Instruction of personnel in the operation of AECL Irradiator units.

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## CONDITIONS

10. The activities authorized by this license are applicable to the following AECL irradiator units and specifications:

| <u>AECL Irradiator<br/>Unit Model Numbers</u> | <u>Isotope</u> | <u>Sealed Source<br/>Model Number</u> | <u>Maximum Permissible<br/>Activity Per Unit<br/>(curies)</u> |
|---|----------------|---------------------------------------|---|
| Gammabeam 100A,<br>100B or 100C               | Cobalt 60      | C-230                                 | 1,570   |
| Gammabeam 150A,<br>150B or 150C               | Cobalt 60      | C-174A or C-174B                      | 6,000   |
| Gammabeam 650                                 | Cobalt 60      | C-252                                 | 50,000  |
| Gammacell 20                                  | Cesium 137     | C-161, Type 4                         | 2,300   |
| Gammacell 40                                  | Cesium 137     | C-161, Type 8                         | 4,200   |
| Gammacell 100                                 | Cobalt 60      | C-170 or C-171                        | 1,000   |
| Gammacell 200                                 | Cobalt 60      | C-170, C-171,<br>C-199 or 200         | 10,000  |
| Gammacell 220                                 | Cobalt 60      | C-166, C-167,<br>C-185, or C-198      | 26,400  |

11. Licensed material shall be used 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.
12. 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."
13. Licensed material shall be used by, or under the supervision and in the physical presence of, Roderick Dit Hing Chu, Eric K. Curnow, Francis (Frank) Dowd, Robert George Duncan, F. M. Fraser, Stefan A. Jaeger, Jiri Kotler, Leonard Garry Leeson, Richard G. McKinnon, Peter H. Moloughney, D. A. Russell, Pasquale J. Stefanelli, Albert N. Thurley, H. M. F. Warland, or Barrie John Jackson (Radiation Safety Officer).
14. Sealed sources containing licensed material shall not be opened.

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15. A. Each sealed source containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.05 microcurie of contamination on the test sample. The test samples shall be taken from appropriate accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.05 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 test with the U.S. Nuclear Regulatory Commission, Region I, 631 Park Avenue, King of Prussia, Pennsylvania 19406, describing the equipment involved, the test results, and the corrective action taken.
- D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.
16. Written instructions contained in application and attachments dated January 15, 1985 shall be followed and a copy of these instructions shall be made available to each individual using or having responsibility for use of licensed material. Any changes in these instructions shall have the prior approval of the U.S. Nuclear Regulatory Commission, Region I, Nuclear Materials Section, 631 Park Avenue, King of Prussia, Pennsylvania 19406.
17. After installation of the irradiator and Cobalt 60 or Cesium 137 source and prior to initiation of the irradiation program, a radiation survey shall be conducted to determine the maximum radiation levels in each area adjoining the irradiation room. A detailed report in duplicate of the results of the surveys shall be sent to the U. S. Nuclear Regulatory Commission, Region I, Nuclear Materials Section, 631 Park Avenue, King of Prussia, Pennsylvania 19406, not later than thirty (30) days following installation of the source.
18. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."

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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 letter dated January 10, 1985 and application with attachments dated January 15, 1985 and the following instruction manuals:

- (1) Gammacell 20 dated February 1970.
- (2) Gammacell 40 dated January 1976.
- (3) Gammacell 100 and 100 dated June 1, 1962.
- (4) Gammacell 200 dated March 1970.
- (5) Gammacell 220 dated October 1975.
- (6) Gammabeam 100 dated December 1970.
- (7) Gammabeam 150 dated November 1979.
- (8) Gammabeam 650 dated December 1970

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

Original Signed By:

Jenny M. Johansen

Date JAN 21 1986

By

Nuclear Materials Safety and  
Safeguards Branch, Region I  
King of Prussia, Pennsylvania 19406