MATERIALS LICENSE

Amendment No. 45

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	
1. Aluminum Company of America ALCOA Technical Center 2. P.O. Box 2970 Alcoa Center, Pennsylvania 15069	In accordance with application dated August 29, 1990, 3. License number 37-07653-02 is amended in its entirety to read as follows: 4. Expiration date August 31, 1994 5. Docket or Reference No. 030-06172

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	A. Sealed sources	A. Not to exceed 8 curies total
B. Nickel 63	B. Foil contained in Hewlett-Packard Model 18713-60520 or Perkin-Elmer Model 330-0119 detector cells	B. Not to exceed 15 millicuries per foil and 150 millicuries total
C. Hydrogen 3	C. Foil contained in AID Model 510-6007 detector cells	C. Not to exceed 200 millicuries per foil and 2 curies total
D. Promethium 147	D. Sealed sources (Amersham Model PHC.C1)	D. Not to exceed 500 millicuries per source or 1500 millicuries total
E. Strantium 90	E. Sealed sources (Accuray Model S-18)	E. Not to exceed 300 millicuries per source and 900 millicuries total

9. Authorized use

A. For possession and use in Kay Ray, Accuray, Ohmart, LFE, or Texas Nuclear devices which have been evaluated and approved for licensing purposes and authorized for distribution under a license issued by the Nuclear Regulatory Commission or an Agreement State.

B. and C. For use in gas chromatographs for sample analysis.

D. For use in FAG Bearing Corporation Series FH46 gauge source holder series 9850 to measure material density.

E. For possession and use in Accuray Model U-6 beta thickness gauge.

CONDITIONS

10. Licensed material shall be used only at ALCOA Technical Center, ALCOA Center, and ALCOA Research Laboratory, New Kensignton, Pennsylvania.

11. A. Licensed material shall be used by, or under the supervision of, Haig G. Sakoian or Mark Jackson.

B. The Radiation Safety Officer for this license is Mark Jackson.

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(Continued) CONDITIONS

12. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders or detector cells by the licensee.

13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed 3 years.

B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.

C. 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 or detector cell received from another person shall not be put into use until tested.

D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.

E. Sealed sources and detector cells need not be leak tested if:

(i) they contain only hydrogen 3; or

(ii) they contain only krypton 85; or

(iii) the half-life of the isotope is 30 days or less; or

(iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or

(v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

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(13. continued) CONDITIONS

F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken.

G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

14. Each gauge shall be tested for the proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at such longer intervals as specified by the manufacturer, not to exceed 3 years.

15. Installation, initial radiation survey, relocation, or removal from service of devices containing sealed sources shall be performed by Mark Jackson or Haig G. Sakbian or by persons specifically licensed by the Commission or an Agreement State to perform such services. Maintenance and repair of devices and installation, replacement, and disposal of sealed sources shall be performed only by persons specifically licensed by the Commission or an Agreement State to perform such services.

16. Prior to initial use and after installation, relocation, dismantling, alignment, or any other activity involving the source or removal of the shielding, the licensee shall assure that a radiological survey is performed to determine radiation levels around, above and below the gauge with the shutter open. This survey shall be performed only by persons specifically licensed by the Commission or an Agreement State to install gauges. A record of the results of this survey shall be maintained.

17. 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 5 years from the date of each inventory.

18. 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.

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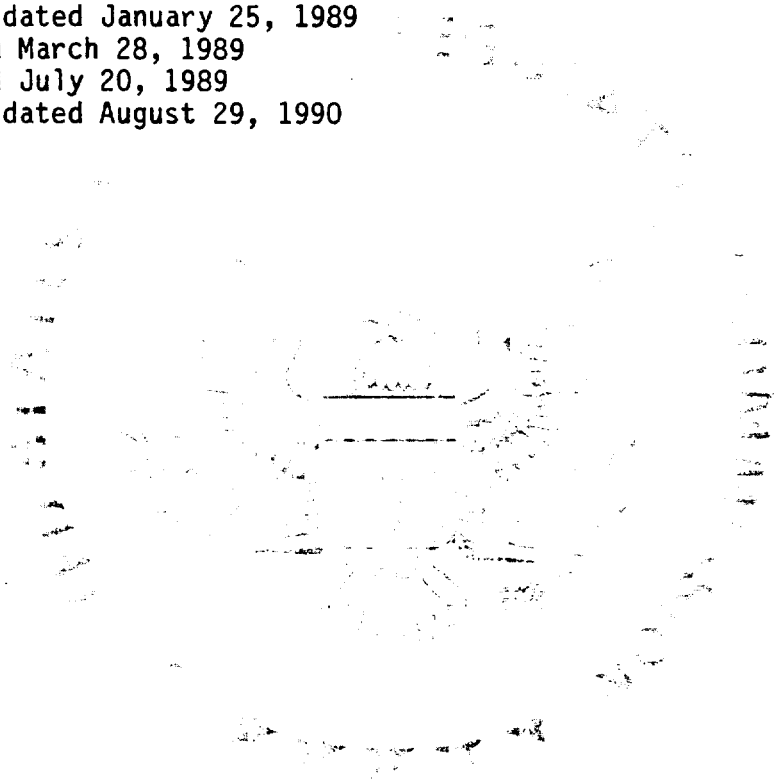
(Continued) CONDITIONS

19. 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. Application dated January 25, 1989
B. Letter dated March 28, 1989
C. Letter dated July 20, 1989
D. Application dated August 29, 1990



For the U.S. Nuclear Regulatory Commission

Date NOV 21 1990

By Original Signed By:
Glenn E. Roberts

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