

U.S. NUCLEAR REGULATORY COMMISSION
MATERIALS LICENSE

Amendment No. 19

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 1, Parts 30, 31, 32, 33, 34, 35, 36, 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); and to import such byproduct and source material. 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 June 24, 1977
1. Atlantic Richfield Company	3. License number 12-00140-04 is amended in its entirety to read as follows:
2. 400 East Sibley Boulevard Harvey, Illinois 60426	
	4. Expiration date July 31, 1982
	5. Docket or Reference No. 12-00140-06

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. Hydrogen 3	A. Any	A. 100 curies
B. Any byproduct material with Atomic Nos. between 3 and 83, inclusive	B. Any	B. 1 curie of each byproduct material with Atomic Nos. between 3 and 83, inclusive except as below:

- Cobalt 60 25 curies
- Iridium 192 25 curies
- Krypton 85 50 curies
- Strontium 90 100 millicuries
- Promethium 147 10 curies

Total Possession Limit - 150 curies

C. Americium 241

C. Foil source
(Nuclear Radiation
Development Model
A001)

C. 600 microcuries

A186

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9. Authorized use

- A. and B. To be used for research and development as defined in Section 30.4(q) of Title 10, Code of Federal Regulations, Part 30.
- C. To be used in a Mine Safety Appliances Billion-Aire analytical instrument.

CONDITIONS

- 10. Licensed material shall only be used at facilities owned or leased by subsidiaries of the licensee throughout non-Agreement States.
- 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, Dr. A. I. Snow, L. A. Baillie, G. A. Uhl, or J. D. Phelps, Jr.
- 13. A. (1) Each sealed source acquired from another person and containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for contamination and/or leakage prior to use. 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.
 - (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 material or 10 microcuries or less of alpha emitting material.
 - (3) 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 prior to any use or transfer to another person unless they have been leak tested within six months prior to the date of use or transfer.
- B. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to use or transfer as a sealed source. If the inspection or test reveals any construction defects or 0.005 microcurie or greater of contamination, the source shall not be used or transferred as a sealed source until it has been repaired, decontaminated and retested.

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13. continued

C. Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three 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.

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 test with the U.S. Nuclear Regulatory Commission, Region III, Office of Inspection and Enforcement, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, describing the equipment involved, the test results, and the corrective action taken.

X 14. Pursuant to Section 20.302, 10 CFR 20, the licensee may incinerate 500 millicuries of Hydrogen 3 and 5 millicuries Carbon 14 wastes per year in accordance with the statements, representations and procedures contained in Item 15.A., of the licensee's application dated June 24, 1977.

* 15. Pursuant to Section 32.11, 10 CFR 32, the licensee is authorized to produce for transfer asphalt, heavy fuel oil, No. 6 fuel, Bunker "C" fuel or petroleum coke containing Cobalt 60, Gold 198 or Scandium 46 at concentrations not exceeding those listed in Section 30.70, 10 CFR 30, as products containing an exempt concentration of byproduct material. Concentrations shall be controlled in accordance with the licensee's application dated June 24, 1977. The licensee shall report such transfers in accordance with Section 32.12, 10 CFR 32.

* 16. Pursuant to Section 32.11, 10 CFR 32, the licensee is authorized to produce for transfer hydrocarbon gasses containing Hydrogen 3, Carbon 14 or Krypton 85 at concentrations not exceeding those listed in Section 30.70, 10 CFR 30, as products containing an exempt concentration of byproduct material. Concentrations shall be controlled in accordance with the licensee's application dated June 24, 1977. The licensee shall report such transfers in accordance with Section 32.12, 10 CFR 32.

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17. Pursuant to Section 32.11, 10 CFR 32, the licensee is authorized to produce for transfer gasoline and heating oil, including jet fuel, diesel fuel, No. 1 heating oil, No. 2 heating oil and No. 6 heating oil, containing Hydrogen 3 and Carbon 14 at concentrations not exceeding those listed in Section 30.70, 10 CFR 30, as products containing an exempt concentration of byproduct material. Concentrations shall be controlled in accordance with the licensee's application dated June 24, 1977. The licensee shall report such transfers in accordance with Section 32.12, 10 CFR 32.

18. 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 June 24, 1977.

* 3K per ASC
NOV 11 1977

Date _____

For the U. S. Nuclear Regulatory Commission
Original Signed By
JOSEPH M. BROWN, JR.
by Radioisotopes Licensing Branch

Division of Materials and Fuel Cycle
Facility Licensing
Washington, D. C. 20555

JNA 1/20/77