

## MATERIALS LICENSE

Amendment No. 21

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); 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 9, 1982
1. Atlantic Richfield Company  400 East Sibley Boulevard Harvey, Illinois 60426		3. License number 12-00140-04 is amended in its entirety to read as follows:
		4. Expiration date July 31, 1988
		5. Docket or Reference No.
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. Not to exceed 100 curies
B. Any byproduct material with Atomic Numbers 3 through 83, inclusive	B. Any	B. Not to exceed 1 curie per radionuclide and 150 curies total except: Cobalt 60 - 25 curies total Iridium 192 - 25 curies total Krypton 85 - 50 curies total Strontium 90 - 100 millicuries total Promethium 147 - 10 curies total
C. Americium 241	C. Foil (Nuclear Radiation Development Model A001)	C. Not to exceed 600 microcuries
9. Authorized use		
A. and B. For use in research and development as defined in Section 30.4(q) 10 CFR Part 30.		
C. For storage only.		

## CONDITIONS

10. Licensed material shall be used only at 400 E. Sibley Boulevard, Harvey, Illinois and facilities owned or leased by subsidiaries of Atlantic Richfield Company anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
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."
- A1104

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## CONDITIONS

12. Licensed material shall be used by, or under the supervision of, Lloyd A. Baillie or John D. Phelps, Jr.
13. A. (1) 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. 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) Except for alpha sources, 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. 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 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.
- C. If the test 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.
- 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.
- E. The licensee is authorized to collect leak test samples in accordance with the procedures described in the licensee's application dated June 9, 1982 and letter dated March 8, 1983 for analysis by the licensee.

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14. 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, or No. 6 heating oil, containing Hydrogen 3 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 9, 1982. The licensee shall report such transfers in accordance with Section 32.12, 10 CFR 32.
15. Pursuant to Section 32.11, 10 CFR 32, the licensee is authorized to produce for transfer asphalt, heavy fuel oil, No. 6 fuel oil, Bunker "C" 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 9, 1982. 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 fuel gases 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 9, 1982. The licensee shall report such transfers in accordance with Section 32.12, 10 CFR 32.
17. Sealed sources containing licensed material shall not be opened or removed from their respective source holders by the licensee.
18. The licensee shall conduct a physical inventory every six (6) months to account for all sealed sources received and possessed under the license. The records of the inventories shall be maintained for two (2) years from the date of the inventory for inspection by the Commission, and shall include the quantities and kinds of byproduct material, location of sealed sources, and the date of the inventory.
19. 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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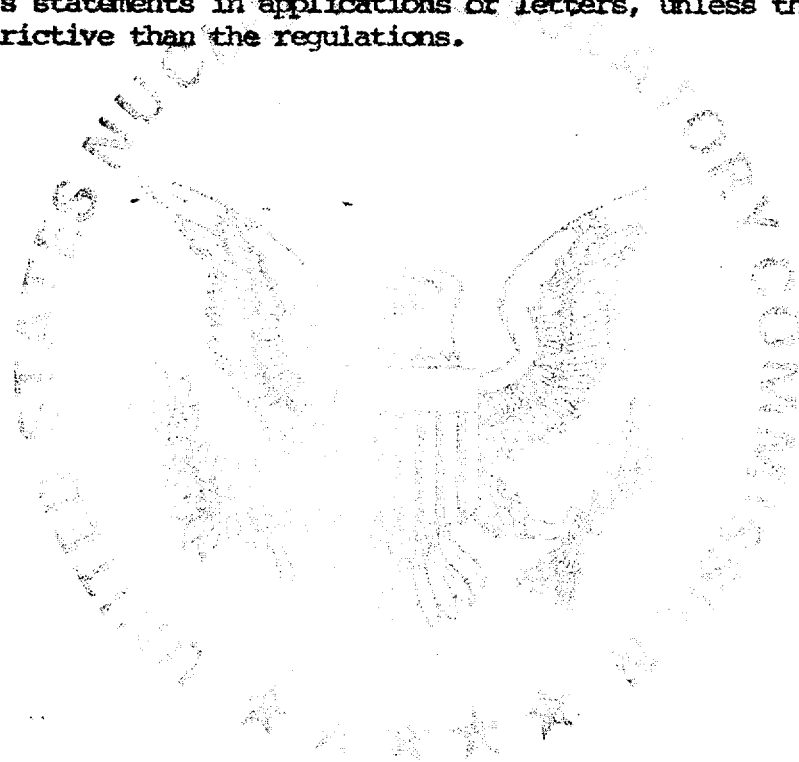
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20. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated June 9, 1982; and letters dated March 8, 1983 and June 2, 1983. 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.

Date AUG 08 1983

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Original signed by

DONNA-BETH HOWE, Ph.D.

By

Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D. C. 20555

DBH  
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