

BYPRODUCT MATERIAL LICENSE No. 12-140-4 Amendment No. 6  
(G63)

Pursuant to the Atomic Energy Act of 1954 and Title 10, Code of Federal Regulations, Chapter 1, Part 30, Licensing of Byproduct Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess, transfer and import byproduct material listed below; and to use such byproduct material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, and is subject to all applicable rules, regulations, and orders of the Atomic Energy Commission now or hereafter in effect and to any conditions specified below.

<b>Licensee</b>		<b>In accordance with application dated June 20, 1961</b>	
1. Name	<b>Sinclair Research Laboratories, Inc. 400 East Sibley Boulevard Harvey, Illinois</b>	3. License number	<b>12-140-4 is amended in its entirety to read as follows:</b>
2. Address		4. Expiration date	<b>July 31, 1963</b>
		5. Reference No.	
6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time	
<b>A. Hydrogen-3  (See page 2)</b>	<b>A. Any</b>	<b>A. 100 curies</b>	
9. Authorized use			
<b>A. &amp; B. Research and Development as defined in Section 30.4(k) of Title 10, Code of Federal Regulations, Part 30, "Licensing of Byproduct Material".</b>			

**CONDITIONS**

10. Unless otherwise specified, the authorized place of use is the licensee's address stated in Item 2 above.
11. The authorized place of use includes facilities owned or leased by subsidiaries of Sinclair Oil Corporation in all 50 states.
12. The licensee shall comply with the provisions of Title 10, Part 20, Code of Federal Regulations, Chapter 1, "Standards For Protection Against Radiation".
13. Byproduct material shall be used by, or under the direct supervision of, individuals approved by the local isotope committee, Dr. Adolph I. Snow, Chairman.
14. Byproduct material shall not be used in or on human beings, in products distributed to the public nor in field applications where such activity is released.

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FOR DIV. OF COMPLIANCE

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6. Byproduct material (element and mass number)	7. Chemical and/or physical form	8. Maximum amount of radioactivity which licensee may possess at any one time
B. Any byproduct material between Atomic Nos. 3 and 83, inclusive	B. Any	B. 1,000 millicuries of any byproduct material between Atomic Nos. 3 and 83, inclusive, except:  Cobalt-60            25 curies Iridium-192        25 curies Strontium-90      100 milli- curies  Total - 130 curies

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CONDITIONS

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15. Each sealed source of licensed material to be used outside of a shielded exposure device shall be acquired from the supplier with a durable, legible and visible tag permanently attached. The tag shall be at least 1 inch square, shall bear a conventional radiation symbol and a minimum of the following instructions: "Danger - Radioactive Material, Do Not Handle, Notify Civil Authorities If Found". Repair or replacement of tags shall be accomplished by returning the source to the manufacturer.
16. Except as provided otherwise by this license, the licensee shall possess and use byproduct material described in Items 6, 7 and 8 of this license in accordance with statements, representations, and procedures contained in his applications and attachments dated May 16, 1957; June 22, 1959; September 18, 1959 and June 20, 1961 and in related documents and amendments as follows:
- A. "Radioisotope Committee Control Over Radioisotope Procurement and Record Keeping".
  - B. "Radiation Laboratory Building".
  - C. Letter dated August 5, 1959 from A. I. Snow.
  - D. Letter dated July 5, 1960 from A. I. Snow.
  - E. Letter dated September 8, 1960.
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17. Pursuant to Section 20.302 of Title 10, Code of Federal Regulations, Part 20, the licensee may incinerate the following amounts and types of byproduct material wastes per year, provided the concentrations in the incinerator effluent do not exceed the limits specified for air in Appendix B, Table II of 10 CFR 20: 500 millicuries of Hydrogen 3, 5 millicuries of Carbon 14, 2 millicuries of Cobalt 60, 12 millicuries of Iron 55 and 4 microcuries of Iron 59.
18. Notwithstanding Condition 14 and pursuant to Section 30.24(h) of Title 10, Code of Federal Regulations, Part 30, the licensee is authorized to transfer possession and control of gasoline containing Carbon 14 at a concentration not to exceed  $3.3 \times 10^{-7}$  microcuries per milliliter as a product containing an exempt concentration of byproduct material. The concentration of byproduct material in the product shall be controlled in accordance with application dated September 18, 1959. The licensee shall report such transfers in accordance with Section 30.24(h)(2), 10 CFR 30.
19. Notwithstanding Condition 14 and pursuant to Section 30.24(h) of Title 10, Code of Federal Regulations, Part 30, the licensee is authorized to transfer possession and control of gasoline containing Hydrogen 3 at a concentration not to exceed  $8 \times 10^{-5}$  microcuries per milliliter as a product containing an exempt concentration of byproduct material. The concentration of byproduct material in the product shall be controlled in accordance with letter from Dr. A. I. Snow dated July 5, 1960. The licensee shall report such transfers in accordance with Section 30.24(h)(2), 10 CFR 30.
20. A. Each sealed source acquired from another person and containing byproduct material with a half-life greater than 30 days and in any form other than gas, shall be tested for leakage and/or contamination prior to use. In the absence of a certificate from a transferor indicating that a test has been made within 6 months prior to the transfer, the sealed source shall not be put into use until tested.
- B. Each sealed source fabricated by the licensee shall be tested for leakage and/or contamination immediately after fabrication. If the test reveals the presence of 0.005 microcuries or more of removable contamination, the licensee shall repair and/or decontaminate and retest the source.
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20. (continued)

- C. Each sealed source containing byproduct material with a half-life greater than 30 days and in any form other than gas, shall be tested for leakage and/or contamination at intervals not to exceed 6 months.
- D. The test shall be capable of detecting the presence of 0.005 microcuries of contamination on the test sample. The test sample shall be taken from the sealed source or 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.
- E. If the test reveals the presence of 0.005 microcuries 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 Director, Division of Licensing and Regulation, U. S. Atomic Energy Commission, Washington 25, D. C., describing the equipment involved, the test results and the corrective action taken. A copy of such report shall be sent to the manager of the nearest AEC operations office listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.

Date July 31, 1961For the U. S. Atomic Energy Commission  
Original Signed By  
James R. Mason  
by Chief, Isotopes BranchDivision of Licensing and Regulation  
Washington 25, D. C.

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