



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

Standard Oil Company (Indiana)  
Amoco Research Center  
ATTN: Terry W. Liaboe  
Radiation Safety Office, F-5  
P.O. Box 400  
Naperville, Illinois 60566

Gentlemen:

Enclosed is Amendment No. 25 renewing your NRC License No. 12-13837-01 in accordance with your request.

Please note that based on telephone conversations August 24, 1990 September 18, 1990, and September 20, 1990 with Mr. Terry W. Liaboe, and in accordance with the present scope of your program, possession limits for use in research and development and instrument calibration have been substantially reduced. However, possession limits for specific radionuclides which may be used in studies described in application dated December 13, 1990 have not been changed.

Also, on June 27, 1988, the Commission established regulations for decommissioning licensed nuclear facilities. The regulations address decommissioning planning needs, timing, funding methods, etc. The intent of the regulations is to ensure that the decommissioning of all licensed facilities will be accomplished in a safe and timely manner, and that licensees will provide adequate funds to cover all costs associated with decommissioning. According to 10 CFR 30.35 (enclosed), financial assurance requirements for a Part 30 licensee are based upon the type, form, and quantity of material authorized on the license. A license which authorizes a fixed amount for atomic Nos. 1 through 83 may require that a licensee develop a complete decommissioning funding plan, depending upon the amount authorized. In order to relieve you of this responsibility, at your request we have added License Condition 29. to your license which states that you must restrict your possession of licensed material below the minimum limits specified in 10 CFR 30.35(d) for establishing decommissioning financial assurance.

However, you should note that all licensees, regardless of possession limits, are required to keep records relative to information which the Commission considers important to decommissioning. Therefore, we have added license Condition 30. requiring that you maintain such records as set forth in Section 30.35(g).

Please review the enclosed document carefully and be sure that you understand all conditions. You must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity and form indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address.
5. Request and obtain appropriate amendment if you plan to change ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. Any amendment request should be accompanied by the appropriate fee specified in 10 CFR Part 170.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.
7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material prior to your expiration date.

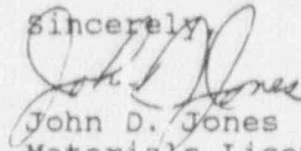
You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations in your license application will result in enforcement action against you in accordance with the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

Standard Oil Company

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If you have any questions or require clarification of any of the above stated information, contact us at (708)790-5625.

Sincerely,



John D. Jones  
Materials Licensing Section

Enclosures:

1. License No. 12-13837-01 (Renewal)
2. 10 CFR Part 30
3. Guidelines For Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use

MATERIALS LICENSE

Amendment No. 25

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 purposes(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		In accordance with letter dated December 13, 1989	
1. Standard Oil Company (Indiana) Amoco Research Center Radiation Safety Office, F-5 P. O. Box 400 Naperville, IL 60566		3. License number 12-13837-01 is renewed in its entirety to read as follows:	
		4. Expiration date	August 31, 1995
		5. Docket or Reference No	030-04308
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. Byproduct material Atomic Number Nos. 1-83; inclusive	A. Any	A. Not to exceed 10 millicuries per radionuclide. Total possession not to exceed 100 millicuries	
B. Hydrogen-3	B. Any	B. 15 curies	
C. Carbon-14	C. Any	C. 0.5 curies	
D. Lanthanum-140	D. Any	D. 1 curie	
E. Any byproduct material Atomic Number Nos. 3-83 inclusive	E. Sealed sources/ devices (which have been registered with the Commission pursuant to Section 32.210, 10 CFR Part 32 or an Agreement State)	E. No single source or device to exceed 1 curie, not to exceed 20 curies total	

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6., 7., and 8 (Continued)

F. Americium-241

F. Sealed and/or foil sources (which have been registered with the Commission pursuant to Section 32.210, 10 CFR Part 32 or an Agreement State)

F. No single source or device to exceed 100 millicuries, not to exceed 20 curies total

G. Plutonium-238

G. Sealed sources/devices (which have been registered with the Commission pursuant to Section 32.210, 10 CFR Part 32 or an Agreement State)

G. No single source to exceed 30 millicuries not to exceed 300 millicuries, total

H. Cadmium-109

H. Sealed sources/devices (which have been registered with the Commission pursuant to Section 32.210, 10 CFR Part 32 or an Agreement State)

H. No single source to exceed 3 millicuries not to exceed 30 millicuries, total

9. Authorized Use

- A. For use in research and development as defined in Section 30.4, Title 10, Code of Federal Regulations, Part 30 and instrument calibration.
- B. through D. Carbon-14, Hydrogen-3, and Lanthanum-140 may be used in studies described in application dated December 13, 1990, and transferred to persons exempt pursuant to 10 CFR 30.14, in accordance with the provisions of 10 CFR 32.11 and 32.12.
- E. through F. For use in NRC or Agreement State approved devices which have been evaluated for licensing purposes to be used for density, level, thickness, moisture or other measurement or analysis when used in accordance with the device manufacturers instructions. For possession incident to the performance of tests for leakage/contamination on specifically and/or generally licensed sources and devices possessed by the licensee.

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CONDITIONS

10. The provisions of this license pertain only to those activities conducted at Amoco Corporation owned facilities and subsidiaries anywhere in the United States where the U. S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed materials.
11. A. Licensed material shall be used by, or under the supervision of, individuals designated by the Amoco Corporation Radiation Safety Committee, David C. Thomas, Chairman.  
B. The Radiation Protection Officer for the activities authorized by this license is Terry W. Liaboe.
12. A. (1) Each sealed source acquired from another person and containing licensed material, other than hydrogen-3, with a half-life greater than 30 days and in any form other than gas shall be tested for contamination and/or leakage before use. In the absence of a certificate from a transferor indicating that a test has been made within 6 months before 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 materials or 10 microcuries or less of alpha emitting material.  
B. Except for sources designed to emit alpha particles, any source in storage and not being used need not be tested. When the source is removed from storage for use or transfer to another person, it shall be tested before use or transfer.  
C. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. A report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, ATTN: Chief, Nuclear Materials Safety Branch. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.  
D. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to perform such services.

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13. No plutonium, regardless of form, shall be delivered to a carrier for shipment by air transport or transported in an aircraft by the licensee except in packages the design of which the NRC has specifically approved for transport of plutonium by air.
14. 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 2 years from the date of each inventory.
15. A. 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.  
B. Detector cells containing scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents foil temperatures from exceeding 325 degrees Centigrade.
16. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.203(a)(1), of 10 CFR Part 20, the licensee is hereby authorized to label detector cells and cell baths, containing licensed material and used in gas chromatography devices, with conspicuously etched or stamped radiation caution symbols without a color requirement.
17. Detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.
18. Except as otherwise specified in this license, the licensee shall have available and follow the instructions contained in the manufacturer's instruction manual for the chromatography device.
19. Licensed material shall not be used in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.
20. This license does not authorize commercial distribution of licensed material.
21. Installation, initial radiation survey, relocation, removal from service, maintenance, and repair of devices containing sealed sources shall be performed by the Radiation Safety Officer or by persons specifically licensed by the Commission or an Agreement State to perform such services. 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.

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22. When performing tests at temporary job sites, the authorized user shall not leave the moisture/density gauge unattended. Upon completion of tests the device shall be locked in the licensee's vehicle or a secure building to prevent unauthorized use, loss or theft.
23. The installation and removal of generally licensed devices by the licensee shall be in accordance with the manufacturers instructions and procedures (a copy of which shall be kept on file for review by the Commission). No generally licensed device shall be installed by the licensee in such a manner or such a location that any person could receive more than 0.5 rem in a calendar year under ordinary circumstances of use.
24. After installation by the licensee of each device distributed to persons generally licensed pursuant to Section 31.5 of 10 CFR, Part 31, the licensee shall conduct a radiation survey and shall assure that the levels of radiation do not exceed those specified in the license authorizing the manufacture or distribution of the installed gauge. The licensee shall furnish the general licensee a copy of the radiation survey report.
25. The licensee shall test each generally licensed device for leakage or contamination of radioactive material and proper operation of the "on-off" mechanism and indicator, if any, at the time of installation of the device.
26. Licensed material listed under Items 6.A., 7.A., 8.A., and 9.A., shall be used pursuant to:
- A. Prior approval by the Amoco Corporation Radiation Safety Committee in accordance with procedures currently referenced in this license; and,
  - B. Prior notification of the appropriate NRC Regional Inspection and Enforcement Office of use of licensed material at a job-site. The notice shall include:
    - 1. The location and address of the job-site;
    - 2. A time estimate for the duration of the job-site;
    - 3. The name and telephone number of a individual at the job-site for inspection purposes.
27. The licensee shall not release the job-site facility until a close-out survey has been performed by the Amoco Radiation Safety Officer and/or a qualified health physics person approved by the Radiation Safety Officer. Release of the job-site shall be in conformance with the Guidelines For Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use or Termination of Licenses For Byproduct, Source or Special Nuclear Material, June, 1980.



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- 28. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
- 29. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(a) for establishing decommissioning financial assurance.
- 30. The licensee shall maintain records of information important to safe and effective decommissioning, at Amoco Research Center, Naperville, Illinois, per the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
- 31. 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 December 13, 1989; and,
  - B. Letters dated May 10, 1990 and May 30, 1990.

For the U.S. Nuclear Regulatory Commission

Date:

October 10, 1990

By

John Jones

Materials Licensing Section, Region III