

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

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, 36, 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.

PCO 3610

316960

Licensee

1. McDonnell Douglas Corporation
Wholly owned subsidiary of The Boeing Company
Radiation Safety Office
2. Mail Code S111-2491
P.O. Box 516
St. Louis, MO 63166

In accordance with letter dated **March 6, 2008**,

3. License number 24-02261-03 is amended in its entirety to read as follows:

4. Expiration date March 31, 2011

5. Docket No. 030-05081
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. Any byproduct material with Atomic Numbers 1 through 83, inclusive	A. Any	A. Not to exceed 1 millicurie per radionuclide; 100 millicuries total.
B. Any byproduct material with Atomic Numbers 1 through 83, inclusive	B. Sealed sources registered either with NRC under 10 CFR 32.210 or with an Agreement State.	B. No single source to exceed 10 millicurie; 1 curie total except as listed below: Hydrogen-3 No single source to exceed 250 millicuries
C. Cesium-137	C. Sealed source (J. L. Shepherd Model No. 6810)	C. 1.5 curies
D. Cesium-137	D. Sealed sources (Bucking Bars)	D. No single source to exceed 8 microcuries; 800 microcuries total
E. Americium-241	E. Sealed/foil sources (Amersham Corp. Models AMM and AMM 1001H and Isotope Products Laboratories Model AP Series)	E. No single source to exceed 10 microcuries; 300 microcuries total.

9. Authorized Use:

- A. To be used for research and development as defined in 10 CFR Part 30, Section 30.4.

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- B. To be used in fixed gauges or analytical devices that have been registered either with the NRC under 10 CFR 32.210 or with an Agreement State for the measurement and analysis of materials.
- C. To be used in a J. L. Shepherd Series 81-6 irradiator for calibration of instruments, including commercial calibration service for any person as defined in 10 CFR 30.4.
- D. For storage only, incident to disposal.
- E. To be used in testing of vendor supplied, sealed optical cavity systems for laser designator/targeting systems.

CONDITIONS

- 10. A. Licensed material (except material listed in Subitem C.) shall be used at McDonnell Douglas Corporation facilities designated by the Radiation Safety Committee, within the St. Louis region which includes Building 71, Tract 1 North and South, Tract II North, Tract II East and West, Tract III, Tract IV, Tract V North and South, ACF Complex, Smartl Field, and the Boeing Leadership Center identified in Figure 1 of letter dated September 26, 2000. Licensed material listed in Subitem C. may be used only at Building 102, Room Number 104E (located in the Tract II East and West complex) of the McDonnell Douglas Corporation.
- B. Licensed material listed in Subitem 6.E. may be used or stored at temporary job sites of the licensee anywhere in the United States where the U. S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.

If the jurisdiction status of a Federal facility within an Agreement State is unknown, the licensee should contact the Federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.
- 11. A. Licensed material shall be used by, or under the supervision of, individuals designated by the McDonnell Douglas Corporation Radiation Safety Committee, Daniel E. Driemeyer, Ph.D., Chairman.
- B. The Radiation Protection Officer for the activities authorized by this license is Rodney Cadanau.
- 12. 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 specified by the certificate of registration referred to in 10 CFR 32.210.
- 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.

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- C. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 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 need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; 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 transferred 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.
- F. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- G. 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.
13. Sealed sources containing licensed material shall not be opened.
14. Detector cells containing licensed material shall not be opened or the sources removed from the detector cell by the licensee.
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.

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16. 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.
17. In lieu of using the conventional radiation caution colors (magenta or purple on yellow background) as provided in Section 20.1901(a), of 10 CFR Part 20, the licensee is hereby authorized to label bucking bars containing licensed material with conspicuously etched or stamped radiation caution symbols without a color requirement.
18. 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 in accessible areas around, above and below the gauge with the shutter open. This survey shall be performed only by persons authorized to perform such services by the Commission or an Agreement State.
19. The licensee shall not perform repairs or alterations of the irradiator involving removal of shielding or access to the licensed material. Removal, replacement, and disposal of sealed sources in the irradiator shall be performed by a person specifically licensed by the Commission or an Agreement State to perform such services.
20. The licensee may transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
21. The licensee is authorized to hold radioactive material with a physical half-life of less than 120 days for decay-in-storage before disposal in ordinary trash provided:
 - A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as ordinary trash, byproduct material shall be surveyed at the container surface with the appropriate meter set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
 - C. A record of each disposal permitted under this License Condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
22. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of unsealed byproduct material to quantities less than 1×10^4 times the applicable values set forth in Appendix B to Title 10 Code of Federal Regulations, Part 30 per the provisions of 10 CFR 30.35(d).

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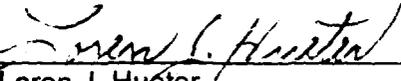
23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Letters dated September 26, 2000 (with attachments), December 23, 2004, September 1, 2005, February 9, 2007 and **March 6, 2008**.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date MAR 25 2008

By


Loren J. Hueter
Materials Licensing Branch
Region III