U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 22

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.

Licensee	In accordance with the administrative amendment request dated January 29, 2009,
1. MACTEC Engineering and Consulting, Inc.	3. License number 45-21498-01 is amended in its entirety to read as follows:
2. 21740 Beaumeade Circle Ashburn, Virginia 20147	4. Expiration date January 31, 2014
	5. Docket No. 030-20867 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. Cesium 137	A. Sealed Sources (QSA Model CDCW556: Isotope Product Laboratories Models HEG-137 and HEG-137-8M; Humboldt Dwg. 2200064)	A. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State
B. Americium 241	B. Sealed Sources (QSA Models AMNV.997, AMNV.339, AMNV.340; Isotope Product Laboratories Models 3021, 3027, Am1.NO2; Humboldt Dwg. 2200067)	B. No single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission or an Agreement State

9. Authorized use:

A. and B. In Troxler Electronic Laboratories Model Nos. 3216, 3241C, 3400 Series, 3411, 3411B and 4640 and Humboldt Scientific, Inc. Model 5001 portable gauging devices for measuring physical properties of materials.

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CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities located at 21740 Beaumeade Circle, Ashburn, Virginia; 22010 Commerce Drive, Abingdon, Virginia; 1606 Ownby Lane, Richmond, Virginia, and may be used at temporary job sites of the licensee anywhere in the Commonwealth of Virginia where the Commonwealth maintains jurisdiction for regulating the use of licensed material. Authorization for use of radioactive materials at job sites in Agreement States or under exclusive Federal jurisdiction shall be obtained from the appropriate regulatory agency.

11. Licensed material shall be used by, or under the supervision and in the physical presence of, individuals who have received the training described in the application dated October 30, 2003.

12. The Radiation Safety Officer for this license is Farouk Azad.

13. 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(d) for establishing decommissioning financial assurance.

14. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.

    B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.

    C. Sealed sources need not be tested if they 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 shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.

    D. 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.

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E. Tests for leakage and/or contamination, limited to leak test sample collection, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. The licensee is not authorized to perform the analysis; analysis of leak test samples must be performed by persons specifically licensed by U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

F. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.

15. Sealed sources or source rods containing licensed material shall not be opened or sources removed or detached from source rods or gauges by the licensee, except as specifically authorized.

16. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.

17. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport or storage, or when not under the direct surveillance of an authorized user.

18. Any cleaning, maintenance, or repair of the gauges that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

19. A. If the licensee uses unshielded sealed sources extended more than 3 feet below the surface, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or probe becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface, the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.

B. If a sealed source or a probe containing sealed sources becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U.S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent.

20. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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21. 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 U.S. 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 October 30, 2003 (ML033110173)
B. Letter dated March 11, 2004 (ML040840361)
C. Letter dated April 13, 2005 (ML051370093)

For the U.S. Nuclear Regulatory Commission

Date March 31, 2009

By ***Original signed by Craig Z. Gordon***

Craig Z. Gordon
Materials Security and Industrial Branch
Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406