

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.

<p style="text-align: center;">Licensee</p> <p>1. Princeton Technology Center Division of Schlumberger Technology Corporation</p> <p>2. 20 Wallace Road Princeton Junction, New Jersey 08550</p>	<p>In accordance with the letter dated August 17, 2009,</p> <p>3. License number 29-08636-02 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date July 31, 2012</p> <hr/> <p>5. Docket No. 030-11318 Reference No.</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Hydrogen 3</p> <p>B. Hydrogen 3</p> <p>C. Barium 133</p> <p>D. Gadolinium 153</p> <p>E. Cesium 137</p> <p>F. Americium 241</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Sealed Sources (EMR Photoelectric Model 758, 761, 762)</p> <p>C. Sealed Sources (Isotope Product Laboratories Model XFB Series)</p> <p>D. Sealed Sources (Isotope Product Laboratories Model XFB Series )</p> <p>E. Sealed Sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State</p> <p>F. Sealed Sources (Isotope Product Laboratories Model PHI-241)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 8,000 curies</p> <p>B. 10 curies per source and 7,000 curies total</p> <p>C. 50 millicuries</p> <p>D. 250 millicuries</p> <p>E. 10 microcuries per source and 2 millicuries total</p> <p>F. 10 millicuries per source and 20 millicuries total</p>
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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
G. Cesium 137	G. Sealed Sources (Isotope Product Laboratories Double Encapsulated Custom Sealed Source Model A3916-X and North American Scientific Model IND-1402-X)	G. 10 microcuries per source and 1 millicurie total
H. Cobalt 60	H. Sealed Sources (Gammatron, Inc. Model GT-G)	H. 800 microcuries
I. Strontium 90	I. Sealed Sources (Isotope Product Laboratories Model BF-90-SS)	I. 1 millicurie
J. Cesium 137	J. Sealed Sources (Amersham Model CDC.701)	J. 1 millicurie
K. Americium 241	K. Sealed Sources (Monsanto Research Corp. Model 2721B; Isotope Product Laboratories Model GFGS Series; Amersham Model AMC-62)	K. 120 millicuries

9. Authorized use:

- A. Manufacture of sealed neutron generators Models 758, 761 and 762 and distribution of these generators to persons authorized to receive the licensed material pursuant to the terms and conditions of specific licenses issued by the U.S. Nuclear Regulatory Commission or any Agreement State; research and development as defined in 10 CFR 30.4, including assembly and disassembly of neutron generators.
- B. On-site storage incident to disposal.
- C. through F. Research and development as defined in 10 CFR 30.4.
- G. Installation into radiation measurement detectors that are used at other divisions of Schlumberger Technology Corporation located 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.
- H. through K. Calibration of the licensee's instruments.

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**CONDITIONS**

10. Licensed material may be used at the licensee's facilities located at 20 Wallace Road, Princeton Junction, New Jersey. Items 6.C. through 6.G. may also be used at the licensee's facilities located at 5 Cedar Brook Drive, Cranbury, New Jersey. Item 6.G. may also be used at other divisions of Schlumberger Technology Corporation located anywhere in the State of New Jersey where the State maintains jurisdiction for regulating the use of licensed material. Authorization for use of radioactive materials at job sites under exclusive Federal jurisdiction or in Agreement States shall be obtained from the appropriate regulatory agency.
11. The Radiation Safety Officer for this license is Thomas P. Bracke.
12. Licensed material shall be used by, or under the supervision of, David Babinchak, Andrew Bazarko, Janelle Branaugh, Louis Cardarelli, Leo Chirovsky, Ed Durner, Guillaume Frerejean, Joel Groves, Frank Kimchick, Stephen Meddaugh, Doug Nelson, Luke Perkins, Jack Purcell, Jani Reijonen, Kenneth Seefelt, John Simonetti, Ken Stephenson, Aaron Stover, Lorenzo Swain, Stefan Vajda, Etienne Vallée, Peter Wraight, John Zhang, or Wolfgang Ziegler. Licensed material in items 6.C. through 6.G. may also be used by, or under the supervision of Donald Hender.
13. 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.
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. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
  - C. 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.
  - D. 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.
  - E. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.

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- F. 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.
- G. 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.
- H. 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.
- I. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
15. 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.
16. 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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17. 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 April 10, 2002 (ML021020484)
  - B. Letter dated May 28, 2002 (ML021570030)
  - C. Letter dated July 9, 2002 (ML021920341)
  - D. Letter dated November 14, 2002 (ML023230047)
  - E. Letter dated November 6, 2003 (ML033360468)
  - F. Letter dated May 13, 2004 (ML041480084)
  - G. Letter dated February 2, 2006 (ML060450596)
  - H. Letter dated January 18, 2008 (ML080280511)
  - I. Letter dated August 17, 2009 (ML092360699)



For the U.S. Nuclear Regulatory Commission

Date September 29, 2009

By

***Original signed by Elizabeth Ullrich***Elizabeth Ullrich  
Commercial and R&D Branch  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406