



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005

June 9, 2007

Northern Geotechnical Engineering, Inc./Terra Firma Testing  
ATTN: Ron J.P. Caron  
Vice President  
1301 Olive Lane  
Anchorage, AK 99515

SUBJECT: LICENSE AMENDMENT

Please find enclosed Amendment No. 03 to NRC License No. 50-29121-01, **changing the mailing address and location of use.**

**Please note that we are leaving License Condition 12.A. as is because the statement "or at such other intervals as specified by the certificate of registration" covers the manufacturer's recommendation as specified in the Sealed Source and Device Registry.**

NRC's Regulatory Issue Summary (RIS) 2005-31, provides criteria to identify security-related sensitive information and guidance for handling and marking of such documents. This ensures that potentially sensitive information is not made publicly available through ADAMS. The RIS may be located on the NRC Web site at: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2005/>. Additionally, the link for frequently asked questions may be located at: <http://www.nrc.gov/reading-rm/faqlist.html>, then select "Withholding of Sensitive Information." Pursuant to NRC's RIS 2005-31, the enclosed materials license will be made publicly available.

**Please note that 10 CFR 30.34, Terms and conditions of licenses, was revised to enhance the security requirements for portable gauges containing byproduct material. This revision became effective July 11, 2005. Revised 10 CFR 30.34 now requires that "each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee" (i.e., when not in use). Guidance on these security procedures is provided in the errata sheet for Appendix H of NUREG-1556, Volume 1, Revision 1 which may be located at: <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v1/r1/>.**

**Also note that items 8.A. through 8.E. were modified to reflect a possession limit for cesium-137 and americium-241 to quantities below the International Atomic Energy Agency's Category 3 amounts of radioactive material. Possession of radioactive material in quantities below the Category 3 thresholds indicates that the license can be made publicly available after issuance since it does not meet the Sensitive Unclassified Non-Safeguards Information criteria as described in NRC's Regulatory Issue Summary 2005-31 (<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2005/>).**

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(14)(viii). You should review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or if you have any questions, contact me at 817-860-8132.

NRC expects licensees to conduct their programs with meticulous attention to detail and a high standard of compliance. Because of the serious consequences to employees and the public that can result from failure to comply with NRC requirements, you must conduct your radiation safety program according to the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate by NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC in writing of any change in mailing address.
3. By 10 CFR 30.36(d) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
  - a. When you decide to terminate all activities involving materials authorized under the license whether at the entire site or any separate building or outdoor area;
  - b. If you decide not to acquire or possess and use authorized material; or
  - c. When no principal activities under the license have been conducted for a period of 24 months.
4. Request and obtain a license amendment before you:
  - a. Change Radiation Safety Officers;
  - b. Order byproduct material in excess of the amount, radionuclide or form authorized on the license;
  - c. Add or change the areas or address(es) of use identified in the license application or on the license, except for areas of use where byproduct material is used only in accordance with either 10 CFR 35.100 or 35.200; or
  - d. Change the name or ownership of your organization.
5. Submit a complete renewal application 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.

In addition, please note that NRC Form 313 requires the applicant, by signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant. Since the NRC also accepts a letter requesting amendment of an NRC license, the signatory for such a request should also be the licensee or certifying official rather than a consultant.

NRC will periodically inspect your radiation safety program. Failure to conduct your program according to NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC may result in enforcement action against you. This could include issuance of a notice of violation; imposition of a civil penalty; or an order suspending, modifying, or revoking your license as specified in the NRC Enforcement Policy. The NRC Enforcement Policy is available on the following internet address:  
<http://www.nrc.gov/what-we-do/regulatory/enforcement/enforc-pol.pdf>.

The NRC no longer publishes the NRC Rules and Regulations loose leaf supplements. However, an electronic version of the NRC's regulations is available on the NRC Web site at [www.nrc.gov](http://www.nrc.gov). To view these regulations, highlight "Electronic Reading Room" and choose "Regulations" on the drop down menu. An electronic version of the NUREG-1556 Series publications is also available on the NRC Web site. To view these guidance documents, highlight "Electronic Reading Room," choose "All Collections" on the drop down menu; choose "NUREGS (NRC Reports)" and select "Publications Prepared by the NRC Staff." Then, choose "NUREG-1556" from the table and select the appropriate volume(s) for your license type.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Thank you for your cooperation.

Sincerely,

**/RA/**

Jacqueline D. Cook, Senior Health Physicist  
Nuclear Materials Licensing Branch

Docket: 030-34741  
License: 50-29121-01  
Control: 471304

Enclosures: As stated

**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 letter dated March 22, 2007
1. Northern Geotechnical Engineering, Inc. / Terra Firma Testing		3. License number 50-29121-01 is amended in its entirety to read as follows:
2. 11301 Olive Lane Anchorage, Alaska 99515		4. Expiration date May 31, 2008
		5. Docket No. 030-34741 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. Americium-241	A. Sealed neutron sources (Amersham Corporation Model AMNV.340)	A. 300 millicuries total. 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 neutron sources (Amersham Corporation Model AMNV.339)	B. 300 millicuries total. 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
C. Cesium-137	C. Sealed sources (Amersham Corporation Model CDCW556 or Isotope Products Laboratories Model HEG-0057)	C. 500 millicuries total. 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
D. Americium-241	D. Sealed neutron sources (Amersham Corporation Model AMNV.997 or Isotope Products Laboratories Model HEG-0058)	D. 400 millicuries total. 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

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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  |
| E. Cesium-137   | E. Sealed sources (Amersham Corporation Model CDCW556 or Isotope Products Model HEG-137-8M) | E. 500 millicuries total. 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 |
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9. Authorized use:
- A. To be used in portable Troxler Electronic Laboratories, Inc., Model 3241-G, asphalt content gauging devices to measure properties of construction materials.
- A. or B. To be used in portable Troxler Electronic Laboratories, Inc., Model 3241-C, asphalt content gauging devices to measure properties of construction materials.
- C. and D. For use in portable Troxler Electronics Laboratories, Inc., Model 3400 Series gauging devices for measuring properties of construction materials.
- E. For use in portable Troxler Electronic Laboratories, Inc., Model 4640-B thin layer density gauges to measure properties of construction materials.

**CONDITIONS**

10. Licensed material may be used or stored at the licensee's facilities located at:
- A. 11301 Olive Lane, Anchorage, Alaska
- B. 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 agency 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 only be used by, or under the supervision and in the physical presence of, Ron J. P. Caron, or individuals who have received the training described in application dated May 5, 1998.
- B. The Radiation Safety Officer for this license is Ron J. P. Caron.

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12. A. Sealed sources 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 or by 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 by an Agreement State prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- 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. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken.
- E. Tests for leakage and/or contamination shall be performed by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. In addition, the licensee is authorized to collect leak test samples but not perform the analysis; analysis of leak test samples must be performed by persons specifically licensed by the 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 3 years.
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. The licensee shall conduct a physical inventory every 6 months, or at other intervals approved by U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license.
15. Each portable 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, storage, or when not under the direct surveillance of an authorized user.



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16. Except for maintaining labeling as required by 10 CFR Part 20 or 71, the licensee shall obtain authorization from U.S. Nuclear Regulatory Commission before making any changes in the sealed source, device, or source-device combination that would alter the description or specifications as indicated in the respective Certificates of Registration issued either by the Commission pursuant to 10 CFR 32.210 or by an Agreement State.
17. 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.
18. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
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. 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 financial assurance for decommissioning.

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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 May 5, 1998
- B. Facsimile dated May 15, 1998
- C. Letter dated April 20, 2007



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Date: June 9, 2007

By: \_\_\_\_\_

Jacqueline D. Cook, Senior Health Physicist  
Nuclear Materials Licensing Branch  
Region IV  
Arlington, Texas 76011