



**SCI ENGINEERING, INC.**

CONSULTANTS IN DEVELOPMENT,  
DESIGN AND CONSTRUCTION  
GEOTECHNICAL  
ENVIRONMENTAL  
NATURAL RESOURCES  
CULTURAL RESOURCES  
CONSTRUCTION SERVICES

February 14, 2017

US NRC Region III  
2443 Warrenville Road  
Suite 210  
Lisle, Illinois 60532-4352

RE: Amendment Request  
NRC Material License No. 24-20039-01

Dear Sir or Madam:

We request an amendment to our NRC Material License No. 24-20039-01. We are requesting that the RSO, Mr. David Nolan, P.E., be allowed to conduct the nuclear gauge training program for new users. Mr. Nolan attended Humboldt RSO Training on April 4, 2014 as well as a two day course for Radiation Safety Officers put on by RM Wester and Associates on August 11 and 12, 2016, in order to satisfy, and exceed, the 8 hour Radiation Safety Training requirement in NUREG-1556 Appendix C. Mr. Nolan also completed SCI's in-house gauge user training in 1996, and is currently an authorized nuclear gauge user.

In addition to the above amendments, we would also like to add the following source to the license.

- Co-57 Sealed Source – Isotope Products Model 3814 15 mCi maximum activity

The source is for use in RMD, Inc Model LPA-1 x-ray fluorescence (XRF) analyzer for measurement of lead paint. SCI will be renting the XRF analyzer on an as-needed basis. The analyzer will only be utilized by operators trained to the manufacturer's requirements or an equivalent training program and stored in a secure location when in our possession.

If you have any questions concerning this matter please contact me at your convenience.

Respectfully,

**SCI ENGINEERING, INC.**

A handwritten signature in black ink, appearing to read 'David P. Nolan'.

David P. Nolan, P.E.  
Vice President/Radiation Safety Office

Enclosures

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**Dave Nolan**

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**From:** Ed Hall [edhall@humboldtmg.com]  
**Sent:** Monday, September 15, 2014 12:30 PM  
**To:** Dave Nolan  
**Subject:** RE: RSO Course

Dave,

Contents of the class are:

**Course Subjects:**

RSO Duties and Responsibilities  
Radiation Safety Practices  
Regulatory Requirements  
Dose/Shielding Requirements  
Accidents/Storage  
Regulatory Guidance  
(NUREG-1556, Vol.1)  
Transportation  
Risk  
ALARA  
Radiation Measurement  
Operating and  
Emergency Procedures  
Calibration and Maintenance  
Record Keeping

Ed Hall  
Technical Sales  
Direct Tel: 1-708-468-6306

Humboldt Mfg Co  
875 Tollgate Rd  
Elgin, Illinois  
60123

Main Tel: 1-708-468-6300  
Toll Free: 1-800-544-7220  
Fax: 1-708-456-5412  
[www.humboldtmg.com](http://www.humboldtmg.com)



**Construction Materials Testing Equipment**

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# **Radiation Safety Officer Outline**

## **Portable Gauges**

### **1.....Introduction**

### **2.....What is Radiation**

- 2.1 Radiation is all around us
- 2.2 The Atom
- 2.3 Decay
- 2.4 Alpha
- 2.5 Beta
- 2.6 Gamma Rays
- 2.7 Neutron
- 2.8 X-Rays
- 2.9 High Speed Electrons
- 2.10 Electron Capture
- 2.11 Activity
- 2.12 Radioactive Decay Calculations

### **3..... Radiation Interactions**

- 3.1 Alpha Radiation
- 3.2 Beta Radiation
- 3.3 Gamma Radiation
- 3.4 Neutrons

### **4..... Portable Gauges**

- 4.1 Theory
- 4.2 Direct Transmission
- 4.3 Backscatter

### **5.....Are Nuclear Gauges Safe**

- 5.1 Biological Effects
- 5.2 The Law of Bergonie and Tribondeau
- 5.3 Stochastic Effects
- 5.4 Non-Stochastic Effects
- 5.5 Therapeutic – Lethal Range
- 5.6 Exposure
- 5.7 Absorbed Dose
- 5.8 Equivalent Dose
- 5.9 Sources of Radiation

**8..... Hands On Training**

7.1 Gauges

7.1.2 Operation

7.1.3 Storage

7.2 Survey Instrumentation

7.2.1 Types

7.2.2 How to use

**9..... Test**

**SCI ENGINEERING, INC.**

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