

APPLICATION FOR MATERIALS LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20556-0001

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM
DIVISION OF NUCLEAR MATERIALS SAFETY
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19408-1416

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4362

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-4006

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

A. NEW LICENSE

B. AMENDMENT TO LICENSE NUMBER _____

C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

ECS ILLINOIS, LLC
1575 Barclay Blvd.
Buffalo Grove, IL 60089

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

See Attached

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Kevin Moyer

TELEPHONE NUMBER

847/279-0366

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3P AMOUNT ENCLOSED \$ 1400.00

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 26, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE: Brett Gutskin, President SIGNATURE: [Signature] DATE: 5/1/08

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

COPY

RECEIVED MAY 20 2008

Attachment # 3

Addresses Where Licensed Material Will Be Used or Possessed

- 1) 1575 Barclay Blvd
Buffalo Grove, IL. 60089
Phone - 847-279-0366
Fax – 847-279-0369
Contact – Kevin D. Moyer, RSO

- 2) 9824 Industrial Drive
Bridgeview, IL. 60455
Phone – 708-430-1071
Fax – 708-430-9854
Contact – Scott Bierbaum, Authorized Assistant
Dave Novotny, Authorized Assistant

- 3) 655 Cherry Ave. Unit 3
Kankakee, IL. 60901
Phone – 708-430-1071
Contact – Scott Bierbaum, Authorized Assistant

- 4) 4718 County Road Y
Milton, WI 53563
Phone – 608-304-0562
Contact – Rick Lou, RSO Wisconsin State License
Authorized Assistant, NRC License

#5 Radioactive Materials

ITEM	RADIONUCLIDE	CHEMICAL, and/or PHYSICAL FORM	MAXIMUM ACTIVITY* PER SOURCE	MAXIMUM POSSESSION LIMIT
A.	Cs-137	Sealed Source - Amersham Corp. Model CDCW566, capsule type XN.30, Model CDCW556, capsule type X1218, Isotope Products Model HEG-0057, capsule type 3024, Troxler Drawing #A-102112	9 mCi	225 mCi
B.	Am-241	Sealed Source - Amersham Corp. Model AMNV.997, capsule type X.1, Isotope Products Model HEG-0058, capsule type 3024, Troxler Drawing #A-102451	44 mCi	1100 mCi
C.	Cs-137	Sealed Source - Humboldt Scientific Drawing 200064	11 mCi	55 mCi
D.	Am-241	Sealed Source - Humboldt Scientific Drawing 2200067	44 mCi	220 mCi
E.	Am-241	Sealed Source - Amersham Corp. Model AMNV.340, capsule type X.2105, Troxler Drawing A-100608	100 mCi	500 mCi
F.	Am241/Be	Sealed Source - QSA, Global, Inc. Model AMNV.997 OR Isotope Products Laboratories Model Am1.NO2	44 mCi	44 mCi

*µCi-microcurie; mCi-millicurie; Ci-Curie; MBq-Megabecquerel; GBq-Gigabecquerel; TBq-Terabecquerel; g-gram; µg-microgram; kg-kilogram

The above list includes the maximum possession limit for all portable nuclear gauges stored in offices listed in Box 3

6 Purposes for which licensed material will be used

Troxler Electronics Model 3400 series gauges will be used for measuring moisture/density content of various construction materials including soils, aggregate, and asphalt.

Humboldt Scientific Model 5001 gauges will be used for measuring moisture/density content of various construction materials including soils, aggregate, and asphalt.

Troxler Electronics Model 3216 gauge will be used for measuring the moisture content of asphalt based roofing materials.

7 Individuals Responsible for Radiation Safety Program and their Training Experience

Kevin D. Moyer - RSO for IEMA license covering Buffalo Grove, Bridgeview, and Kankakee, IL offices.

Scott Bierbaum – Authorized Assistant for Bridgeview and Kankakee, IL.

Dave Novotny – Authorized Assistant for Bridgeview, IL.

Rick Lou – RSO for our Wisconsin State license, and Authorized Assistant for NRC license.

8 Training for Individuals Working in or Frequenting Restricted Areas

Before using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled ‘Training for Individuals Working In or Frequenting Restricted Areas’ in NUREG-1556, Vol. 1, Rev. 1, ‘Consolidated Guidance about Materials licenses: Program-Specific Guidance about Portable Gauge Licenses,’ dated November 2001.

All portable nuclear gauge users will have a current user/safety certification, and a HAZMAT certification provided by Troxler Labs, the Local 150 Skills Improvement Program, or similar applicable training agency prior to gauge operation.

Copies of all authorized users certifications will be filed at all offices listed in Box 3 of form 313.

9 Facilities and Equipment

All portable nuclear gauges will be stored in a locked cabinet at the addresses listed in box 3 of this application. Keys for the cabinets will only be administered after the user provides copies of current user and HAZMAT certifications by a recognized training facility or gauge manufacturer. Access to the storage cabinet by unauthorized users will not be permitted under any circumstance.

The RSO defines an “authorized user” as someone with a current user and HAZMAT certification, and someone who has been given individual instruction on ECS safety and security policies.

11 Waste Management

Any portable nuclear gauge that may require disposal will be sent to:

Troxler Labs
Illinois Service Center
1430 Brook Dr.
Downers Grove, IL 60515
Tel: 630.261.9304 Fax: 630.261.9341

Certificate of Completion

This certifies that

Kevin Moyer

has successfully completed the

Radiation Safety Officer Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Harvey Dunlevy

Harvey Dunlevy
Instructor

5/30/2007
Date

William F. Troxler, Jr.
President



TROXLER

Troxler Electronic Laboratories, Inc.

PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709

Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

Enrollment ID: 23248

Certificate of Completion

This certifies that

Kevin D. Moyer

has successfully completed the
Nuclear Gauge Safety Training Class
conducted by the training department of

Troxler Electronic Laboratories, Inc.

J. Patrick Schroeder

Patrick Schroeder

Instructor

December 20, 2007

Date

William F. Troxler, Jr.

President

Pass-Certified to operate Nuclear

Gauges

9905814



Troxler Electronic Laboratories, Inc.

PO Box 12057 * 3008 Cornwallis Rd. * Research Triangle Park, NC 27709

Phone: (919) 649-8661 * Fax: (919) 649-0761 * Web site: www.troxlerlabs.com

HAZMAT Certification

as required by U.S. DOT and IATA

This certifies that
Kevin D. Moyer

has been trained and tested in accordance with the U.S. Department of Transportation and International Air Transport Association (IATA) hazardous material requirements for general awareness/familiarization, function-specific, safety, and security awareness training as related to the transportation of nuclear gauges. A description of the training course materials is available from Troxler Electronic Laboratories, Inc.

Training Date
December 20, 2007

Expiration Date
3 Years From Date of Class

Instructor
Patrick Schroeder



Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Road • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • www.troxlerlabs.com

Hazmat Employer Certification

Company:

Company Official: _____ *Date:* _____

Enrollment ID: 9905814

Certificate of Completion

This certifies that

Scott Bierbaum

has successfully completed the

Nuclear Gauge Safety Training Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

George Marshall
George Marshall

Instructor

4/28/2005

Date

William F. Troxler, Jr.
President

Enrollment ID: 12701



TROXLER

Troxler Electronic Laboratories, Inc.

PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709

Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

HAZMAT Certification

as required by U.S. DOT and IATA

This certifies that
Scott R Bierbaum

has been trained and tested in accordance with the U.S. Department of Transportation and International Air Transport Association (IATA) hazardous material requirements for general awareness/familiarization, function-specific, safety, and security awareness training as related to the transportation of nuclear gauges. A description of the training course materials is available from Troxler Electronic Laboratories, Inc.

Training Date
April 24, 2008

Expiration Date
3 years from date of class

Instructor
Patrick Schroeder



Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Road • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • www.troxlerlabs.com

Hazmat Employer Certification

Company:

Company Official: *Rob Chop* Date: *5/6/2008*

Enrollment ID: 11796518

Certificate of Completion

This certifies that

David Novotny

has successfully completed the
Nuclear Gauge Safety Training Class
conducted by the training department of

Troxler Electronic Laboratories, Inc.

J. Patrick Schroeder

Patrick Schroeder
Instructor

April 24, 2008

Date

William F. Troxler, Jr.
President

Pass-Certified to operate Nuclear
Gauges
11699363



Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8881 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

HAZMAT Certification

as required by U.S. DOT and IATA

This certifies that

David Novotny

has been trained and tested in accordance with the U.S. Department of Transportation and International Air Transport Association (IATA) hazardous material requirements for general awareness/familiarization, function-specific, safety, and security awareness training as related to the transportation of nuclear gauges. A description of the training course materials is available from Troxler Electronic Laboratories, Inc.

Training Date
April 24, 2008

Expiration Date
3 years from date of class

Instructor
Patrick Schroeder



Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Road • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • www.troxterlabs.com

Hazmat Employer Certification

Company:

Company Official: Rah Chopra *Date:* 5/6/2008

Enrollment ID: 11699363

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

RICK LOU

of

GME CONSULTANTS INC.

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC.
TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

- | | |
|--|---|
| 1. Principles and practices of radiation protection. | 5. Radioactivity measurement standardization and monitoring techniques and instruments. |
| 2. Leak testing procedures. | 6. Accident and incident procedures. |
| 3. Mathematics and calculations basic to the use and measurement of radioactivity. | 7. Procedures for nuclear gauge storage and transportation. |
| 4. Biological effects of radiation. | 8. General safety precautions. |

Gauge Operation

- | | |
|-------------------------|----------------------|
| 1. Instrument theory | 4. Field application |
| 2. Operating procedures | 5. Gauge calibration |
| 3. Maintenance | |

CERTIFICATE #: 081963

GREG FARNEN

Greg Farnen
INSTRUCTOR

6/25/98

DATE

WILLIAM F. TROXLER

PRESIDENT

HAZMAT Certification

as required by U.S. DOT and IATA

This certifies that

Rick Lou

has been trained and tested in accordance with the U.S. Department of Transportation and International Air Transport Association (IATA) hazardous material requirements for general awareness/familiarization, function-specific, safety, and security awareness training as related to the transportation of nuclear gauges. A description of the training course materials is available from Troxler Electronic Laboratories, Inc.

3/30/2006
Training Date

3/30/2008
Expiration per IATA*

3/30/2009
Expiration per USDOT*

Harvey Dunlevy
Instructor

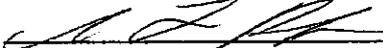
** For shipments by air, the IATA expiration date is applicable. For shipments by highway, the USDOT expiration is applicable.*



Troxler Electronic Laboratories, Inc.

PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • www.troxlerlabs.com

Certified by

Company Official: 

Company Name: GME CONSULTANTS OF ILLINOIS, INC

Company Address: 9824 Industrial Drive

Unit C

Bridgeview, Illinois 60455

Enrollment ID: 18286

Certificate of Completion

This certifies that

Rick Lou

has successfully completed the

Radiation Safety Officer Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Harvey Dunlevy

Harvey Dunlevy
Instructor

3/30/2006
Date

William F. Troxler, Jr.
President



Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

Enrollment ID: 18286

**ECS ILLINOIS, LLC
RADIATION
SAFETY PROGRAM
FOR PORTABLE NUCLEAR
GAUGES**



April 2008

VERSION 2

**RADIATION SAFETY PLAN
ECS – ILLINOIS
(Last updated: April 22, 2008)**

General

ECS Illinois owns and operates numerous portable nuclear gauges in Illinois, Wisconsin, and Indiana to determine the moisture content and/or density of a variety of engineered materials.

If used and maintained properly, these gauges present low exposure risk to the operator, other ECS employees, and the general public.

This plan is intended to be an integral component in the overall Safety Program to ensure that portable nuclear gauges are properly stored, secured, used, transported, maintained, and controlled at all times.

1. It restates the key items from the relevant Illinois Emergency Management Agency (IEMA) and Department of Transportation (DOT), and the Nuclear Regulatory Commission (NRC) Regulations and the ECS Corporate Services Radiation Safety Program.
2. It summarizes all of the actions and responsibilities of managers and operators to confirm that the letter and the intent of the Corporate Services Radiation Safety Program are met.
3. It incorporates Federal regulations to facilitate stringent NRC regulations

Radiation Safety Officer

Use and possession of portable nuclear gauges is under the direction and supervision of the Radiation Safety Officer (RSO). As a designated and trained representative of the office manager, the RSO is the single point of accountability and responsibility between IEMA, the NRC and ECS Illinois. The RSO is responsible for implementation of this Radiation Safety Plan.

Scott Bierbaum will act as the authorized assistant for the Bridgeview and Kankakee office, and Dave Novotny will act as the second authorized assistant for the Bridgeview office. Rick Lou, RSO for our Wisconsin state license, will act as the authorized assistant under our NRC license for our Milton, Wisconsin office. Kevin D. Moyer, RSO for our current IEMA license, will conduct audits for field users, as well as all permanent and temporary storage locations.

Typical duties of the RSO are listed in the Corporate Services Radiation Safety Program. The following responsibilities are repeated or restated for emphasis:

1. Ensures that all authorized users are properly trained and proficient in gauge use, cleaning, accountability controls, transportation, security, and emergency procedures.

Schedules refresher and recurrent training as required, and maintains required training records.

2. Coordinates or completes formal semi-annual inventories, annual calibration, semi-annual leak tests, and annual audits. Actions are to be completed documented, and archived in accordance with this Plan and the Corporate Services Radiation Safety Program.
3. Functions as a point of contact and gives assistance in case of an emergency. Notifies IEMA, the NRC, and ECS Corporate Services immediately of incidents or accidents that could result in a release of radioactive material.
4. Maintains and monitors individual exposure records of authorized users. Highlights restricted levels for minors and declared pregnant women, and investigates exposures in excess of ECS' administrative dose limit for a quarter.
5. Maintains copies of and ensures compliance with a current IEMA, NRC and DOT regulations.
6. Ensures that individuals or agencies receiving or being shipped gauges for calibration, maintenance, or disposals are properly licensed for that activity. This includes commercial shippers being used to transport gauges.
7. Establishes controls and procedures to ensure a reasonable degree of security and accountability for all gauges at all times.
8. Ensures that this plan and all related policies and procedures are reviewed at intervals not to exceed twelve (12) months.

Individual Gauge Operator

1. Before removing the gauge from its place of storage, checks to make sure that the gauge source is in the shielded, locked position with a lock on the handle of the gauge, and the transport case is locked.
2. Signs the gauge out on the sign out sheet including the date(s) of use, name(s) of the authorized users who will be responsible for the gauge, and the temporary jobsite(s) where the gauge will be used.
3. Completes a standardization check and logs the information in the standardization book stored inside the nuclear gauge storage box.
4. Follows applicable Department of Transportation (DOT), and NRC requirements when transporting the gauge. This includes both proper blocking and bracing to prevent the shipping case from moving and the proper display of shipping papers.

5. Exercises required control over the gauge at all times and maintains constant surveillance. At no time is the gauge to be left unattended or in the possession of an unauthorized person. Always keep unauthorized persons away from the area where the gauge is to be used.
6. Assists operators of heavy equipment in seeing gauges and operators at construction sites.
7. Understand that operator should not look under the gauge when the source rod is being lowered into the ground.
8. Does not touch the source rod with fingers, hands, or any part of the body, and always makes sure the source rod is in the shielded position and locked after each measurement is made.
9. When not being used for field measurements, returning the gauge to its storage/transportation case in a secured storage location. Ensure that two (2) independent locking systems (separate from the transportation case lock) are being used.
10. Wipes the gauge and case clean of any dirt, dust or mud prior to returning to the permanent storage location as soon as possible. Notifies the RSO of any maintenance issues/needs, and logs the gauge back in on the utilization log.
11. When using the equipment, wears the personal monitoring device (dosimeter) assigned. Never wears another person's dosimeter. Never stores the dosimeter near the gauge. When the operator is not using the equipment, the dosimeter will be kept in a radiation free, low heat area out of direct sunlight.
12. At all times, observes ALARA principles to minimize any dose received: As Low As Reasonably Achievable.
13. While the equipment is in the operator's possession, the operator shall have the following documentation. Packets of these materials (shipping papers) have been assembled and are stored with each gauge. Do not sign out a gauge if its appropriate shipping papers are not complete, notify the RSO if documents are missing.
 - a. Copy of the "Bill of Lading." (Please see Attachment 1 for an example.)
 - b. Copy of emergency procedures and a telephone "call-down" list. This document is extracted from the plan that has been provided to the technicians.
 - c. Copy of the Office's Radioactive Material License.
 - d. Copy of the Current Calibration Report.
 - e. Copy of the Current Leak Test Certificate.
 - f. Copy of the Gauge Operating Manual.

Personnel Monitoring

As part of in-processing, all technicians who will likely be using a portable nuclear gauge or will be working in the vicinity of the permanent storage area will be issued an individual dosimeter. The possession of a valid and current dosimeter is an absolute requirement for the use of a gauge.

The RSO will establish a management system to confirm that applicable individuals are issued dosimeters, that all dosimeters are exchanged quarterly, that individual exposure records are properly reviewed, that appropriate investigatory and explanatory documents are produced, and that understandable files are permanently maintained.

Some of the incidents or actions that need to be concisely addressed to support the integrity of our documentation include:

1. Investigation and corrective action if an employee exceeds the Corporate administrative dose limit of 250 mRem in any single quarter.
2. Memo listing terminated employees to support why they are no longer on the monitoring program.
3. Memo indicating if terminated employees requested and were provided a copy of their exposure reports while employed by ECS Illinois.
4. Memo documenting lost or missing dosimeters to explain a break in the chronological sequence of reports.
5. Notation of current employees who are removed from the dosimeter program due to extended assignments not involving the use of portable nuclear gauges.
6. Documentation if female employees indicate that they are pregnant in order to cause review criteria to be modified.

Public Exposure Monitoring

In an effort to minimize the public's exposure, the RSO will take the following steps:

1. A spare ("Spare 2") dosimeter is kept next to the laboratory's concrete break machine at all times to monitor the public's exposure. This location is the closest area any employee will spend extensive periods of time near the nuclear gauge storage cabinet. This will be monitored to see if it is a suitable indicator to demonstrate that the general public and non-users are not exposed to 100 mRem per year or more. The constant presence of "Spare 2" in close proximity to the storage cabinet is felt to be very conservative for the purposes of this analysis.

2. All employees who will not be gauge operators will be given initial training on exposure limits and prevention. All non-operators will have an annual refresher on exposure.
3. The general public and non-users in unrestricted space should not be exposed to more than 100 mRem per year.

Storage

1. Portable nuclear gauges for the Illinois office are primarily stored in the locked nuclear storage cabinet at the ECS office in Buffalo Grove, Illinois, Bridgeview, IL, Kankakee, IL, and in Wisconsin at our Milton office. Nuclear density gauges may be stored at off-site storage locations **only** if approved in writing by the RSO. Such sites are project specific, they shall not be used as secondary dispatch sites.
2. Whenever off-site storage for over 90 days is desired or required, the project engineer for the particular site should make a written request to the RSO. The RSO must visit the site and confirm that all security requirements will be met. Detailed review and approval documentation of such sites is essential. Written approval from IEMA or the NRC is required prior to the storage of a nuclear gauge at a project specific site for more than 90 days.
3. No storage of portable nuclear gauges in other than the main office or approved job-site locations is allowed.
4. Post required signs and notices adjacent to the storage area:
 - a. Illinois Department of Nuclear Safety – Notice to Employees, Standards for Protection Against Radiation.
 - b. A sign with “Caution – Radioactive Material” and the international symbol.
 - c. A copy of the office’s radiation license, radiation safety plan, and a copy of applicable regulations or a notice as to where these documents are located.

Control, Accountability, and Security

It is essential that individuals involved with portable nuclear gauges be aware of and comply with all of the requirements for the control, accountability, and security of portable nuclear gauges.

The actual or approximate location of each gauge should be known at all times. The use and transportation of gauges shall be done with full regard for the possibility of loss or damage to the gauge and in compliance with the use and transportation requirements of the DOT, NRC and IEMA. Additionally, documentation must be thorough regarding the disposition of each gauge and who is responsible for each gauge.

1. The first step in this process is the requirement for a monthly inventory of gauges.

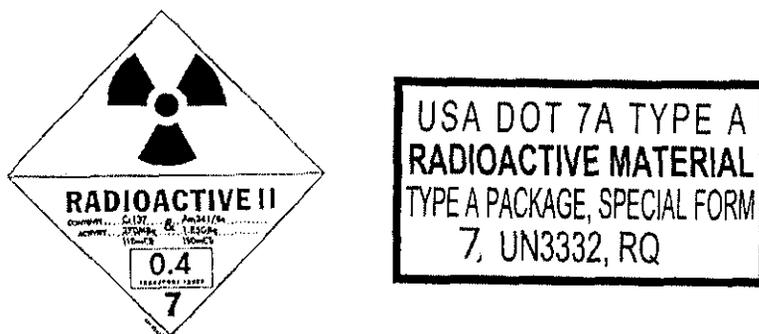
- a. This will be completed by the RSO or his or her representative.
 - b. All “on hand” gauges should be in the storage cabinet and properly signed in. Gauge clip boards at vacant positions should clearly indicate gauges approved for off-site storage, gauges at approved agencies for calibration or repair, or other approved dispositions.
 - c. Any deficiencies noted will immediately be brought to the attention of the RSO and the Field Service Supervisor for investigation and resolution.
2. As gauges are signed out for the day, operators shall be extremely attentive in ensuring that proper procedures are complied with and that the required documentation is properly completed.
 - a. The operator must first gain access to the storage cabinet and to the key for the assigned gauge. The required keys will only be provided to operators who are authorized to use portable nuclear gauges and who possess and are wearing individual dosimeters.
 - b. The utilization log which documents a day’s activities will first be completed. (Please see Attachment 2 for an example.)
 - i. This log records each gauge that is signed out by identification number, the initial of the technician signing it out, the time it was obtained, and the location where the gauge will be used.
 - ii. Additional columns are for signing in the gauge when it is returned.
 - c. Deviations from these procedures will not be tolerated and may be the basis for disciplinary action.
3. To repeat what is stated in other sections of this plan, gauges shall be properly secured in vehicles while being transported and the vehicles will be locked when the driver is not with the vehicle.
 - a. To the maximum extent reasonable, unattended vehicles containing properly secured portable nuclear gauges will be kept under surveillance.
 - b. If surveillance of unattended vehicles is not practicable, the operator is expected to use a high degree of caution so as to park his or her vehicle in a reasonably secure area. Operators are not permitted to park in underground or off site parking structures that would require the gauge operator to transport the gauge through public streets. Allowances must be made for on site parking.
 - c. Proper security includes two (2) independent locking systems that prevent removal of the case containing the gauge by unauthorized individuals. One (1) system must also prevent the case from being opened.
 - d. In addition to security requirements, transportation cases will be properly blocked and braced to prevent movement during shipping.
4. Control is also required while using portable nuclear gauges on job sites.
 - a. Gauges shall **never** be left unattended on job sites for **any** reason unless they are properly secured in an approved location.

- b. Operators should have gauges under constant visual control and be within ten (10) feet of a gauge.
 - c. Reasonable actions must be taken to alert heavy equipment operators as to the location of a gauge. This is essential to avoid gauges being damaged by heavy equipment.
 - d. When gauges are not being used for a short period of time, they shall be placed and locked in their approved shipping containers.
 - e. If the use of a gauge is complete, but the operator must remain on the site for other tasks, the gauge will be properly secured in its locked shipping container and properly locked in the operator's vehicle. This includes both trunk and door locks for cars, and the two lock system for open bed pick-ups.
5. On return to the office the operators will:
- a. Confirm the cleanliness of the gauge and its case.
 - b. Inform the RSO of any maintenance issues that must be resolved.
 - c. Record the gauge as "returned" on the gauge's Utilization Log.
 - d. Ensure the gauge is locked in the off position, the case is locked, and the locked case is then locked in the storage cabinet.
6. The Utilization Log and a visual inspection will be the means by which the RSO will conduct his or her monthly inventory. These forms with any discrepancies noted and resolved will be retained for a minimum of three (3) years.

Local Transportation

1. During transportation, the equipment shall be fully secured in the transporting vehicle and located away from personnel.
 - a. When transported in a closed vehicle (car or van), the case shall be locked, the case will be locked in the vehicle in a manner that prevents the lid from being opened and the vehicle will be locked when the operator is not with the vehicle.
 - b. When transported in an open bed vehicle (pick-up truck), the case shall be locked and the case securely fastened and locked to the truck bed during transport and when the operator is not with the vehicle. Two (2) independent locking systems are required to prevent removal of the shipping container or removal of the gauge from the shipping container by unauthorized persons. The lock on the case does not meet the later requirement.
 - c. Unless there is no reasonable alternative, nuclear gauges shall only be transported in the trunk of standard passenger vehicles or in the cargo area of SUVs. One (1) cable or chain system must prevent the lid of the case from being opened unless the cable or chain is cut.
2. In addition to security, the gauge in its transportation case will be properly blocked and braced to prevent movement.

3. The equipment will only be transported in an approved DOT Type A shipping container with all the required labels and markings. (Please see the picture below as examples.)



4. During transportation the operator shall have Shipping Papers on the seat adjacent to the driver describing the radioactive material with the proper nomenclature. The operator shall also carry proof of completion of a current radiation safety class.
5. When shipping by common carrier, the package shall be in compliance with 49 CFR 170-179.
6. When using or transporting a gauge in a NRC controlled area, NRC rules would apply. When using or transporting a gauge in a State controlled area, then the applicable state rules would apply.

Maintenance

1. Daily operator maintenance is limited to the exterior cleaning of the gauge as previously discussed. The operator will have received proper instruction on how to clean the gauge and will wear his/her assigned dosimeter when accomplishing this task.
2. No maintenance shall be performed in which the radioactive source is removed from the gauge. The gauge shall be returned to the manufacturer or an approved service center for this type of service.
3. The shipping case shall be periodically checked for damage, and to verify that all labels are present, intact, and readable.

Records

The RSO shall maintain records sufficient to document implementation of the program and to demonstrate compliance with applicable requirements as described in appropriate Federal and state regulations. These records will be maintained for the duration specified in IEMA and the NRC regulations, or as specified in this plan, whichever is longer.

The RSO should maintain a complete set of files documenting compliance with the requirements and intent of this Program.

1. Current required publications:
 - a. IEMA Regulations Subchapter b, Radiation Protection.
 - b. DOT / NRC regulations.
 - c. A copy of the current Corporate Services Radiation Safety Program.
2. Copy of the current license and all previous amendments.
3. Individual gauge equipment folders. A separate folder shall be permanently maintained for each portable nuclear gauge that is or was in the office's inventory. As a minimum, the folder shall document the gauges history from acquisition to ultimate disposal. If desired, maintenance and calibration documents can be removed and destroyed three (3) years after disposal. Required documents include:
 - a. The initial bill of sale and shipping documents.
 - b. All calibration reports.
 - c. All maintenance and/or repair records.
 - d. All leak tests reports.
 - e. If applicable, disposal or transfer documentation.
4. Dosimetry records and any documentation on exposure limits being exceeded, on badges being replaced, and on terminated employees.
5. RSO and user training records (3 years).
6. Calibration/leak test control records (3 years).
7. Certificate of Type A shipping container performance tests (current).
8. Annual audits to include reports of corrective action (3 years).
9. Copies of utilization logs showing gauge identification, operator signing out, time and date, destination, and actual return time (3 years).
10. Copies of formal, semi-annual inventories (5 years). (Please see Attachment for an example)
11. Copies of shipping papers and authorizing licenses of all individuals or agencies receiving gauges for maintenance, calibration, or repair (3 years).
12. Copy of Sealed Source and Device (SSC) Registration Certificate (permanent).

Training

All training related to the control, use and transportation of portable nuclear gauges will comply with both IEMA and DOT and NRC requirements. The latter are summarized in the Corporate Services Radiation Safety Program. This training includes:

1. Radiation safety for non-users. Addressed in Appendix IV of the Corporate Services Safety Program. This requires initial training and annual refresher training. Particular caution should be taken with any obvious or declared pregnant non-users.
2. Initial radiation safety and regulatory requirement training. This is required of all employees who will be using portable nuclear gauges prior to use.
3. Annual refresher training for all authorized users.
4. Recurrent Hazmat training:
 - a. The DOT requires recurrent refresher training or the Hazmat and security issues associated with transporting portable nuclear gauges every three (3) years.
 - b. Per the IUOE Local 150 Collective Bargaining Agreement guidelines, the union will provide all technicians training.
 - c. If the technician does not obtain the required training within the specified time limit, the technician will not be allowed to operate a nuclear gauge and will be put on progressive disciplinary steps leading to termination.
5. RSO training: see Appendix D of NUREG-1556.

Emergency Procedures

1. Physical Damage
 - a. If any moving equipment is involved, stop equipment movement until the extent of contamination, if any, can be established.
 - b. Evaluate the situation to determine if any individuals have been exposed to radiation. If individuals are suspected to be contaminated, care for life threatening injuries first, and then notify emergency personnel and the hospital staff about possible radioactive material contamination.
 - c. Cordon off an area with at least a 15 foot radius around the incident. Maintain direct surveillance to protect against unauthorized entry into the area – DO NOT LET ANYONE near the gauge.
 - d. Call the RSO immediately.
 - e. The RSO will visually check the gauge to determine the extent of the damage to the source(s), source housing(s), and shielding. If the source(s), source housing(s), and shielding are intact and functional, the gauge can be removed

from the site, returned to the shipping container, and shipped to the manufacturer for repair or replacement.

- f. If the integrity or location of the source(s) cannot be positively identified, the RSO will immediately notify IEMA and the NRC.
- g. The RSO shall follow the instructions of IEMA and the NRC.
- h. If the source rod is extended and bent, or the shield is damaged such that dose rates are likely to exceed those of an undamaged gauge, call the manufacturer for instructions before shipment.

2. Theft or Loss

- a. Immediately notify the RSO. The RSO will immediately notify IEMA, the NRC, local police, and the Corporate Services RSO.

3. Fire

- a. Call the Fire Department (911).
- b. Take action appropriate with a fire to protect personnel.
- c. Notify the RSO.
- d. The RSO (or the authorized user for off-site storage locations) remains available to advise the fire fighters as to the nature, locations, and potential hazards of the radioactive materials.

<u>Melting Points</u>	<u>Degrees (Fahrenheit)</u>	<u>Degrees (Celsius)</u>
Stainless Steel	2550	1400
Carbide	2000	1090
Aluminum	1005	540
Lead	620	327
Polyethylene	257	125

Temperatures in an industrial fire will normally range from 500 degrees Fahrenheit at floor level to a high at the ceiling of 1400 to 1800 degrees Fahrenheit. The polyethylene and lead would melt in most fires, the aluminum only in a severe fire. The stainless steel capsule would not reach its melting point.

4. Call Down List (Emergency Telephone Numbers)

Kevin D. Moyer – RSO, IL	Work (847) 279-0366 Nextel (847) 456-8363 (111*18*13330) Home (847) 731-3132
Scott Bierbaum – VP - Bridgeview, IL Authorized Assistant Bridgeview & Kankakee, IL	Work (708) 430-1071 Nextel (708) 417-7897 (111*5628*8) Home (815) 937-4032

Brett Gitskin – Illinois Branch Manager	Work (847) 279-0366 Nextel (847) 452-2555
Dave Novotny – Authorized Assistant Bridgeview, IL	Work (708) 430-1071 Home (708) 346-9686 Cell (708) 896-0825
Stan Murphy – Corporate Services RSO	Work (703) 834-1250 ext. 250 Nextel (703) 856-5099
Rick Lou – RSO, Milton, WI State lic. Authorized Assistant – NRC license	Cell (608) 304-0562 Home (608) 752-7179
Police or Fire	911
NRC (24 hours)	(301) 816-5100
IEMA (24 hours)	(217) 785-0600

BILL OF LADING

Shipper: ECS Illinois, LLC
1575 Barclay Boulevard
Buffalo Grove, Illinois 60089
Telephone No. (847) 279-0366

Nuclear Moisture/Density Gauge #

Model Number: _____ Serial Number: _____

RQ, RADIOACTIVE MATERIAL, TYPE "A" PACKAGE,
SPECIAL FORM, 7, UN3332 CONTAINING:

Cesium 137: Sealed Source, 0.3 GBq (8mCi)

Am-241:Be: Sealed Source, 1.48 GBq (40 mCi)

Label: Radioactive Yellow II

Transport Index: T.I. = 0.3

Emergency Contact: Troxler (919) 549-9539

Illinois Department of Nuclear Safety (217) 785-0600

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Radiation Safety Officer

Nuclear Gauge Safe Transportation Guidelines

Please read and review the items listed below. If you understand everything outlined, sign at the bottom of the page and return to the RSO. If you have any questions, see the RSO before signing.

1. The nuclear gauge storage cabinet must be locked at all times.
2. When transporting a nuclear gauge to a job site, check that you have all of the required equipment (i.e. fully charged nuclear gauge, plate, rod, mallet, calibration block).
3. The nuclear gauge you are transporting must be signed out AND back in.
4. Whenever you are transporting a nuclear gauge, you must take the bill of lading and all other required documentation applicable to that gauge with you.
 - a. The shipping papers include a copy of ECS's license with all active amendments, manufacturer's instruction manual, emergency procedures, current calibration, and results of the most recent leak tests.
 - b. The bill of lading must be within arms reach in the vehicle you are transporting the gauge in.
 - c. The bills of lading are to be stored in the bins above the storage cabinet whenever the nuclear gauges are not stored in the cabinet.
5. When transporting a nuclear gauge in a vehicle, the nuclear gauge must be stored as far as possible from the driver and passengers and locked in a manner that will prevent both the opening and movement of the nuclear gauge case.
6. The nuclear gauge must be padlocked into the off position whenever the nuclear gauge is not in use.
7. You must run and record a standard count once for every day that the nuclear gauge is used.
8. You must wear your dosimetry badge whenever you are operating a nuclear gauge; the badge must be properly stored away from any radioactive source when not worn.

By signing this letter, you acknowledge the above tasks are your responsibility and that you have received a copy of the ECS Illinois, LLC Radiation Safety Plan. The current edition of the office's plan is version 2.

Print Name

Signature

Date

Nuclear Gauge Transportation Checklist

Technician Name: _____ Date: _____

Steps for removing a nuclear gauge from the ECS Illinois storage facility:

- ____ Sign out the nuclear gauge on utilization log.
- ____ Unlock storage cabinet.
- ____ Check that storage box and nuclear gauge have proper locks.
- ____ Check that storage box contains the standard log, standard block, drill rod, scraper plate, and extraction tool.
- ____ After removing the storage box and the above items stored within, relock the storage cabinet.
- ____ Carry the storage box and the above items stored within to the vehicle.
- ____ Lock and restrain the storage box and the above items stored within using the Python lock and any other required restraints so that the storage box cannot move or be opened.
- ____ Take the 3-ring binder with the applicable shipping papers and place it on the vehicle dashboard or in the passenger seat next to the driver's seat.

Steps for returning a nuclear gauge from the ECS Illinois storage facility:

- ____ Return the 3-ring binder with the applicable shipping papers to the applicable holder above the storage cabinet.
- ____ Release the storage box and the above items stored within from the vehicle and carry them to the storage cabinet.
- ____ Unlock the storage cabinet.
- ____ Check the battery level of the nuclear gauge. If it is low, plug in the charger.
- ____ Check that the standard log, standard block, drill rod, scraper plate, and extraction tool are in the storage box.
- ____ Check that the nuclear gauge and the storage box have the proper locks on.
- ____ Store the storage box and the above items stored within in the storage cabinet.
- ____ Relock the storage cabinet.
- ____ Sign in the nuclear gauge on utilization log.

Radiation Safety Officer

Technician Signature

