PLYMOUTH TUBE CO USA

572 W. State Road 14
Winamac, IN 46996 USA
Phone: (574) 946-3125
FAX: (574) 946-3850

March 11, 2008

Materials Licensing Branch
US NRC, Region III
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

To Whom It May Concern:

We would like to amend our current NRC license (#13-32528-01), to reflect a change in our radiation safety officer. Greg Martin has left the company and has been replaced by Greg Hewitt. He attended a radiation safety class in February and a copy of his certificate, exam and the course agenda are included.

I authorize him to act on the behalf of Plymouth Tube in matters of radiation safety and to sign future amendments. All correspondence should be sent to his attention and all questions directed to him.

Thank you for your consideration in this matter.

Sincerely,

Penny A. Ruppert
Hot Mill Admin Manager
Plymouth Tube Co.

RECEIVED MAR 1 7 2008

Name: Greg Hewitt
Date: 2/7/08

NUCLEAR GAUGE
RADIATION SAFETY EXAM

1. True and False

a.	T	(F)	Long term radiation exposure (chronic) is more hazardous to your health than a dose delivered over a short period of time.
b.	T	(F)	Radiation safety training is recommended but not required for persons working with radiation.
c.	(T)	F	If a gauge is damaged, it must be assumed that a hazard exists.
d.	(T)	F	Time, distance and shielding are appropriate methods of radiation protection .
e.	T	(F)	Survey meters have to be calibrated only when you change the batteries.
f.	T	(F)	All survey meters operate the same way so it doesn't matter which meter you purchase.
g.	T	(F)	Any person who has the potential to work with radiation must wear a radiation dosimeter
h.	(T)	F	Each gauge is designed for a specific purpose so care must be taken before changing location of the gauge
i.	T	(F)	It is okay to post an area "Caution: Radiation Area," even if the exposure rate is less than 5 mR/Hr.
j.	(T)	F	Typically, leak tests are performed at 6 month intervals and in some cases, at 3 year intervals
k.	(T)	F	Loss of a source is reportable to the regulators as soon as one knows its gone

2. Matching

a.	Geiger Counter	A	A survey instrument
b.	Dosimeter	C	Transmission gauge
c.	Measures between source and detector directly	B	Luxel badge
d.	Measures source integrity	D	Leak test

Passed JPW

3. Multiple Choice

a. Radiation survey meters must be calibrated at least every:
   1). Each three months
   2). Each six months
   3). Each three years
   (4). At least annually

b. Sealed sources must be leak tested at least every:
   1). Annually
   (2) Each six months
   3). Each three years
   4) Leak tests are never required.
   5) None of the above

c. Which of the following materials are suitable as shielding for gamma radiation
   1). Concrete
   2). Lead
   3). Steel
   4). Water
   (5) All of the above

d. The United States Nuclear Regulatory Commission regulates which of the following
1) Radioactive materials made in a nuclear reactor
2) X-ray equipment
3) Radioactive materials that are made in a cyclotron
4) None of the above

e. If an individual were to remain continuously present in a high radiation area of 120 mrem per hour for a period of ten minutes, he/she would receive an exposure of approximately:
1.) 0.02 mrem
2). 2 mrem
3). 20 mrem
4). 200 mrem

f. Which of the following are true about warning lamps on a gauge:
1). A red light means that the shutter is open
2). A green light means that the shutter is closed
3). A white/amber light usually means that the gauge is in standby (there is power to the system but the shutter is closed)
4). If none of the indicator lamps are illuminated, one should assume that the shutter is open.
5) All of the above
6). None of the above

g. How can a nuclear gauge be disposed of:
1). Sell to the highest bidder
2). Sell/transfer to a facility with a license to receive the unit
3). Return to the manufacturer
4) Either 2 or 3
5). None of the above

h. Which of the following environmental conditions may damage a gauge
1). Heat
2). Extreme dirt
3) Excessive moisture
4) Vibration
5) All of the above
6). One of the above

i. Which of the following are considered routine maintenance on a gauge
1). Checking the shutter mechanism
2). Standardizing the system
3). Performing lockout/tagout
4). Performing leak tests
5) All of the above
6). None of the above

4. True or False

a.	T	F	Anyone can install sources into gauge house assemblies
b.	T	F	Special training is required to perform non-routine maintenance on a gauge.
c.	T	F	Gauges may be designed for a specific purpose so care must be taken in moving a gauge from one location to another in a plant/mill
d.	T	F	A sign that says "Caution Radioactive Materials" is posted wherever radioactive materials are used or stored

e.	T	F	A sign that says "Caution Radiation Area" means that nobody can go into the area because the radiation levels are so high that it will kill you
f.	T	F	ALARA only applies to Nuclear Power Plants
g.	T	F	100 mrem/year is the allowable limit for a radiation worker
h.	T	F	5000 mrem/year is the allowable limit for a radiation worker
i.	T	F	It is okay to post an area with the sign "Caution: High Radiation Area" even if the exposure is less than 100 mrem/hour
j.	T	F	Security is not an issue with gauges because nobody knows what they are anyway.
k.	T	F	The Radiation Safety Officer is responsible for the day to day radiation safety program activities, such as audits, training, licensure and such.
l.	T	F	Management has nothing to do with the operation of the radiation safety program
m.	F	T	Badges are required when a worker has the potential to exceed 10% of the occupational dose limits
n.	T	F	ALARA means keeping all radiation exposures as low as reasonably achievable, through employee training and awareness programs, engineering controls and performance based assessment of worker competency with radioactive materials
o.	T	F	Written radiation safety programs and audits of programs are only required for large users of rdioactive materials
p.	T	F	Inverse square means that as you double the distance from a source of radiation you will decrease the exposure by a factor of 4 (for gamma point sources)
q.	T	F	Contamination is the presence of radioactive materials where it is not wanted

5. Describe Lock out tag out for a gauge

pull pin close shutter lock out & tag

6. Describe actions to be taken in the event of an emergency with a gauge

S safety 1st
1 isolate from area
N notification RSO
Deal w/ emergency

7. Matching

a.	"Caution Radioactive Material"	d 100mrem/year
b.	"Caution: High Radiation Area"	e 5000mrem/year
c.	"Caution Radiation Area"	c 5mR/Hour
d.	Allowable limit for a member of Public	b 100mR/Hour
e.	Allowable limit for a radiation worker	a Posted where radioactivity is used or stored

8. Multiple Choice

a. Which of the following are non-routine maintenance on a gauge

1). Installation
2). Relocation
3). Source installation
4) Repair of the source housing
5) All of t he above
6) None of the above

b. Which of the following apply to restricted areas

1). Access is controlled for purposes of radiation protection
2). Area is posted accordingly
3). Access is controlled for whatever reason the plant wants to control it for
4). There is no such thing as a restricted area
5) Two of the above

c. Which of the following are components of a device registration:

1). What the gauge is intended to be used for
2). Conditions under which the gauge can operate
3). Safety evaluation of the gauge including the safety features
4) Engineering properties of the gauge
5) All of the above

9. What is the dose from a 1 Ci Cs-137 source at 1 foot from the source and at 2 feet from the source. Remember that D = 6CE/distance squared

D = Dose in R/Hr.
C = Activity in Curies
E =Energy in MeV (for Cs-137 this is .662MeV)

1' = 3.96

2' = .96

Radiation Safety Seminar

February 5-7, 2008

Las Vegas

Day One (continued)	Description	Objectives	Trainer(s)
01:20 – 01:30	Break	NA	
01:30 – 02:20	Regulatory Dose Limits and Radiation Dosimetry (Chapter 7) • Dose limits (public vs. occupational) • Types of dosimeters; how they work • Personnel monitoring requirements • Dosimetry reporting requirements	Identify the regulatory dose limits for radiation workers, the embryo/fetus of a declared pregnant woman, and members of the public. Explain types of personnel dosimeters and their limitations. Relate monitoring and reporting requirements.	Josh
02:20 – 02:30	Break	NA	
02:30 – 03:00	Radiation Biology (Chapter 9) • Cellular, tissue, and systemic effects • Delayed effects, early somatic effects • Acute radiation syndrome • Hormesis, threshold vs. non-threshold	Describe the biological effects of radiation and the dose levels where these effects occur. Contrast perceived vs. real risk.	Sue
03:00 – 04:00	Group Sessions	See Performance Objectives for Group	All

Day Two	Description	Objectives	Trainer(s)
07:30 – 08:00 a.m.	Continental Breakfast	NA	
08:00 – 09:40 (10 min. break)	Radiation Detection and Measurement (Chapter 10) • Types of equipment • Appropriate uses • Demonstration of equipment • Self-reading dosimeters	Describe how to select and operate equipment for the different types of radiation. Identify the basic design principles of various detectors.	Ralph
09:40 – 09:50	Break	NA	
09:50 – 10:40	Radiation Protection (Chapter 11) • ALARA • Methods for protection • Posting and labeling requirements	Explain what ALARA is and how to implement. Describe methods used for radiation protection (e.g., time, distance, shielding, contamination control). Apply inverse square law. Recognize when and where to post signs and apply labels.	Sue

Day Two (continued)	Description	Objectives	Trainer(s)
10:40 – 11:30	Group Sessions	See Performance Objectives for Group	All
11:30 – 12:30 p.m.	Lunch	NA	
12:30 – 01:30	Radiation Incidents and Emergency Response (Chapter 13) • Types (gauge, medical, academic) • Procedures • Source leakage, loss • Emergency personnel as responders • Performance based training • Interactions with public, media, and employees	Define the RSO's role in planning for and preventing accidents. Examine key components of an emergency plan.	Judy Grunewald
01:30 – 01:40	Break	NA	
01:40 – 02:30	Radiation Protection Programs (Chapter 3) • Written programs • Key elements (e.g., RSO/RSC, facility design, PPE, procedures, records, audits) • Annual reviews	Examine key elements of an effective radiation protection program. Assess record keeping requirements.	Josh
02:30 – 02:40	Break	NA	
02:40 – 03:00	Responsibilities for Radiation Protection (Chapter 16) • Who is responsible • Legal issues	Relate various responsibilities for radiation protection and regulatory compliance.	Sue
03:00 – 04:00	Group Sessions	See Performance Objectives for Group	All

Day Three	Description	Objectives	Trainer(s)
07:30 – 08:00 a.m.	Continental Breakfast	NA	
08:00 – 08:40	Packaging, Transport, and Receipt of Radioactive Materials (Chapter 15) • Shipper's responsibilities • Transportation regulations (NRC, DOT, IATA) • Classification and packaging • Transport on public roads • Receipt of radioactive materials	Define shipper's responsibilities and regulations affecting radioactive materials transportation. Describe basic packaging, marking, and labeling provisions for limited and Type A quantities. Describe DOT provisions for employee training and transport on public roads. Relate procedures for safe receipt of packages.	Michael Smith
08:40 – 08:50	Break	NA	
08:50 – 09:40	NRC Regulations (Chapter 2) • Part 19, Notices, Instructions to Workers • Part 20, Radiation Protection Standards • Parts 30-35, license types and provisions • Special requirements (gauges and licenses)	Identify critical provisions of Part 19 and 20 worker information and protection standards. Identify NRC license and registration requirements (e.g., exempt, general, specific). Interpret basic provisions for specific license categories (e.g., manufacture, broad scope, radiography, medical use, irradiators).	Josh
09:40 – 09:50	Break	NA	
09:50 – 10:30	Regulatory Inspections (Chapter 17) • How to prepare for NRC/state inspections • How to deal with inspectors • What to do if the inspection is going badly • What to do if called for an enforcement conference • Interactions with the public and media	Relate the inspection process. Explain how to prepare for and respond to enforcement activities. Define the NRC's media notification criteria. Define key aspects of communicating with the public and media.	Sue
10:30 – 11:20	Group Sessions – Key aspects for writing a license • New, renewal, & amendment applications • Content, fees Reportable incident scenarios • When to/not to report an incident • Interactions with the public and media	Identify references available for assistance when writing a license (e.g., NRC Regulatory Guides). Identify key aspects (do's, don'ts) for writing a license. Discuss incident scenarios and Identify NRC requirements for reporting incidents and misadministrations (medical).	All
11:20 – 12:00	Group Sessions – Examination	Complete exam and score 85% or better.	All

Radiation Safety Seminar
Performance Objectives for the Gauge Group

These performance objectives are tailored to the participants' needs. Each session is approximately one hour.

Day One: Morning Session

- Relate physics and interactions of radiation with matter as it pertains to common radionuclides used in gauges.
- Compare slides on specific operation of many types of gauges (to understand common types of gauges and how they work).
- Recognize general characteristics of source capsule configuration and shutter designs.
- Calculate radioactive decay.

Day One: Afternoon Session

- Recognize the use of various gauge types
- Differentiate what you can and cannot do with gauges with regards to maintenance and repair.
- Demonstrate opening and closing shutters (both cylinder and flat swing type).
- Define badge requirements - who needs them, why, etc.
- Recognize difference between device registrations and general/specific licenses for gauges.

Day Two: Morning Session

- Examine gauges/dummy sources.
- Observe proper lockout/tagout demonstration and then lockout/tagout a gauge (hands-on).
- Differentiate what signs are needed in experimental settings.
- Describe ALARA strategies for mills/gauges.
- Demonstrate time, distance, and shielding principles.
- Demonstrate survey procedures - exposure rate monitoring, leak tests, and wipe tests.
- Calculate dose from a point source.

Day Two: Afternoon Session

- Identify responsibilities of the RSO for the radiation safety program.
- Recognize emergency preparedness and response.
- Perform leak tests.
- Demonstrate radiation measurements with a Geiger counter and an ionization chamber around sources to observe how radiation is shielded, collimated, and scattered.
- Demonstrate radiation measurements of a source through various shielding materials to observe attenuation.
- Demonstrate radiation measurements of a source at various distances to understand the inverse square law.
- Define how to receive and ship a radioactive package.

Certificate of Completion

awarded to

Greg Hewitt

for participation in

Radiation Safety Training – Las Vegas
February 5-7, 2008

ENGELHARDT & ASSOCIATES, INC.
RADIATION CONSULTANTS
6400 Gisholt Dr., Suite, 111 Madison, WI 53713
Phone: 800.525.3078 Fax: 608.224.0821
E-mail: engel@chorus.net
www.radexperts.com

Susan J. Engelhardt, M.S.

Joshua Walkowicz, M.S., CHP

Ralph Grunewald, Ph.D.

Judith Grunewald, R.N., M.S.

Michael T. Smith, A.S., EMT-P

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Materials Liscensing Branch
US NRC, Region III
2443 Warrenville Rd, Suite 210
Lisle, IL 60532-4352