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March 7, 2012

US Nuclear Regulatory Commission
Commercial and R&D Branch
Division of Nuclear Materials Safety
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. Micheal Reichert:

03034878

Please accept this letter as our request to make a change to AstenJohnson's Radioactive Materials License – License number 39-32137-01.

We are requesting the Radiation Safety Officer for AstenJohnson, Inc. be changed from Mr. Jeffrey Martin to Ms. Penny Crosby. I have attached the certificate and training records for Ms. Crosby.

If you have any questions or need additional information, please contact me at 843.202.6273 or connie.wilson@astenjohnson.com.

Sincerely,

Connie Wilson
Inside Sales Leader

Attachments

577105
NMSS/RGN1 MATERIALS-002

Certificate of Completion

awarded to

Penny Crosby

for participation in

Radiation Safety Training – Las Vegas, NV
February 7 – 9, 2012

ENGELHARDT & ASSOCIATES, INC.
RADIATION CONSULTANTS
930 Elm Grove Road, Suite C
Elm Grove, WI 53122
Phone: 262-439-2111 Fax: 262-439-2112
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.

Radiation Safety Seminar

3 Day Class

Day One	Description	Objectives	Trainer(s)
07:30 – 8:00 a.m.	Continental Breakfast	Not Applicable (NA)	
08:00 – 08:10	Seminar Objectives/Overview	Explain seminar objectives and meet trainers.	Sue Engelhardt
08:10 – 08:30	Radiation and Its Uses (Chapter 1) • Ionizing radiation and radioactive decay • Contemporary applications	Relate the basic properties of ionizing radiation. List common applications of ionizing radiation in industry, research and medicine.	Sue
08:30 – 08:50	Regulatory Agencies and Licensing (Chapter 2) • Where regulatory standards come from • NRC vs. Agreement States • Other agencies (e.g., OSHA, FDA, EPA, DOT)	Relate how the NRC regulations are developed. Define difference between Agreement vs. Non-Agreement states. Recognize how other agencies regulate radiation.	Sue
08:50 – 09:00	Break	NA	
09:00 – 10:30	Radiation Physics (Chapter 5) • Atomic composition, structure, and terms • Radioactive decay and half-life • Properties of common decay products • Radioactive decay modes and schemes • Interactions with matter	Relate the basic atomic structure and common terms. Define half-life and radioactive decay. Describe basic properties of alpha, beta, x-ray, & gamma. Recognize the basic radioactive decay modes and emission characteristics. Compare interaction mechanisms (directly vs. indirectly ionizing).	Ralph Grunewald
10:30 – 11:30	Group Sessions	See Performance Objectives for Group	All
11:30 – 12:30 p.m.	Lunch	NA	
12:30 – 01:00	Radiation Units (Chapter 6) • Exposure units • Dose and dose equivalent units • Energy transfer (LET, QF)	Identify the difference between exposure and dose. Relate the traditional and SI units for exposure (R C/kg), dose (rad, Gy), and dose equivalent (rem, Sv). Examine linear energy transfer and quality factors as these pertain to biological effectiveness.	Josh Walkowicz
01:00 – 01:20	Common Sources of Radiation (Chapter 6) • Naturally occurring • Medical	Relate typical levels of radiation from common sources.	Josh

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.	Josh
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.

Radiation Safety Seminar
Performance Objectives for the Medical Group

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

Day One: Morning Session

- Restate the regulatory structure for various types of radiation and radioactive materials commonly used in medicine.
- Examine alpha, beta, and gamma decay processes and interactions with matter.
- Define and convert between various radioactivity units (Ci, Bq, dpm, dps).
- Calculate radioactive decay both forward and backward in time.
- Calculate attenuation of radiation.

Day One: Afternoon Session

- Define NRC dose limits and personnel dosimetry requirements - who needs dosimeters, when, why, etc.
- Recognize regulatory requirements and NRC licensing process for medical uses.
- Define personnel bioassays for radioactive materials commonly used in medicine.
- Examine radiation risk vs. benefit issues.

Day Two: Morning Session

- Recognize various types of detectors for beta and gamma radiation (e.g., GM, LEG, HEG), and how to select appropriate detectors (e.g., for dose surveys vs. contamination surveys).
- Demonstrate how to perform function tests (hands-on) and understand calibration requirements for survey meters commonly used in medical settings.
- Compare patient release after nuclear medicine procedures vs. non-release of radioactivity from the research setting.
- Describe practical radiation protection measures (e.g., use of time, distance, shielding, contamination control) and ALARA strategies for medical settings.
- Demonstrate how to conduct wipe tests and leak tests for removable contamination.
- Differentiate NRC required radiation warning signs, labels, postings, etc. needed in experimental settings.
- Calculate dose from a point source.

Day Two: Afternoon Session

- Identify RSO responsibilities and the critical components of a radiation safety program in a medical facility.
- Describe Quality Management Program and written directive requirements.
- Identify effective auditing techniques.
- Describe NRC requirements for training (frequency, content, etc.).
- Examine radiation emergency preparedness and response for incidents likely to occur in a medical setting.
- Explain how to receive/ship a radioactive package.
- Describe radioactive waste management and setting up a decay in storage procedure.

Radiation Safety Seminar
Performance Objectives for the Research Group

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

Day One: Morning Session

- Restate the regulatory structure for various types of radiation and radioactive materials commonly used in research.
- Examine alpha, beta, and gamma decay processes and interactions with matter.
- Define and convert between various radioactivity units (Ci, Bq, dpm, dps).
- Calculate radioactive decay.
- Calculate attenuation of radiation.

Day One: Afternoon Session

- Examine NRC dose limits and personnel dosimetry requirements - who needs dosimeters, when, why, etc.
- Restate regulatory requirements and NRC licensing process for research related use.
- Explain personnel bioassays for radioactive materials commonly used in research.
- Contrast radiation risk vs. benefit issues.

Day Two: Morning Session

- Recognize various types of detectors for beta and gamma radiation (e.g., LSC, GM, LEG), and how to select appropriate equipment (e.g., for exposure rate monitoring vs. radioanalyses).
- Demonstrate how to perform function tests (hands-on) and understand calibration requirements for survey meters commonly used in research facilities.
- Describe practical radiation protection measures (e.g., use of time, distance, shielding, contamination control) and ALARA strategies for research settings.
- Demonstrate how to conduct wipe tests and leak tests for removable contamination.
- Differentiate NRC required radiation warning signs, labels, postings, etc. needed in experimental settings.
- Calculate dose from a point source.

Day Two: Afternoon Session

- Identify RSO responsibilities and the critical components of a radiation safety program in a research facility.
- Describe effective auditing techniques.
- Describe NRC requirements for training (frequency, content, etc.).
- Examine emergency preparedness and response for incidents likely to occur in a research setting.
- Explain how to receive/ship a radioactive package.
- Describe radioactive waste minimization, management, and disposal (including decay in storage) for radioactive materials commonly used in research.

This is to acknowledge the receipt of your letter/application dated 3/7/2012, and to inform you that the initial processing which includes an administrative review has been performed.

Amendment (39-32137-01)

☒ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

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A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 577105.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader