DEPARTMENT OF HEALTH & HUMAN SERVICES **Public Health Service**

Centers for Disease Control and Prevention (CDC)
National Institute for Occupational Safety and Health
P.O. Box 18070
626 Cochrans Mill Road
Pittsburgh, PA 15236

Br.2

July 7, 2011

Commercial and R&D Branch
Division of Nuclear Materials Safety
U.S. NRC Region I
475 Allendale Road
King of Prussia, PA 19406-1415
Fax # 610-337-5269
Attn: Rebecca

03019474

Subject: License Amendment Request - Addition of Backup Radiation Safety Officer for License # 37-01712-11

This is in regards to my letter and resume sent on June 29, 2011. As you requested, I have signed the letter and included my phone number. Please add my name to our NRC license as an authorized Backup Radiation Safety Officer. I am an Industrial Hygienist working in conjunction with the Radiation Safety Officer. I have been assisting the RSO with inspections of work places with radioactive sources and the radioactive sealed source inventory. The RSO would like to expand my duties with regard to radiation safety. I have completed the 40 hour Radiation Safety Officer training.

Sincerely,
Beth Tomasovic

Beth Tomasovic

Industrial Hygienist
412-386-6441

REC'D IN LAT 7/11/2011

5755551
NMSS/RGN1 MATERIALS-002

Resume for consideration as Backup Radiation Safety Officer (RSO)

For CDC/NIOSH-Pittsburgh NRC Material License # 37-01712-11

ACADEMIC EDUCATION:

Bachelor of Science degree, Chemical Engineering, Pennsylvania State University, [redacted]

Coursework included Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Biology, and Physics.

TRAINING:

40 Hour Radiation Safety Officer, Dade Moeller Radiation Safety Academy, Gaithersburg, Maryland, March 2011.

Topics

- Forms of radiation: non-ionizing and ionizing
- Types of ionizing radiation: α, β, γ, X-Ray, Positrons, and Neutrons
- Characteristics of ionizing radiation: energy emitted, penetrating power, and shielding.
- Mechanism and units for radioactive decay: activity calculations, exposure, absorbed dose, and dose equivalent.
- Regulations (10 CFR 19 and 20): posting of notices to workers (NRC Form 3), training of workers, facility inspections, leak testing, annual safety program audits, radiation dose limits, security, and required records and reports.
- Worker training requirements: storage, transfer, use of radiation and/or radioactive material, health problems associated with exposure to radiation and/or radioactive material, steps required to minimize their exposure.
- Steps required to minimize their exposure: ALARA, shielding, time, distance.
- Health effects: types of health effects, required dose, effect of radiation on the human cell, models for estimating risk (linear, linear quadratic, threshold dose effect, and increased effect at low dose), effects on the embryo and fetus.
- Conducting surveys and monitoring: Monitoring includes wearing a badge (Thermoluminescent dosimetry and radiation film) and bioassay.
- Types of dosimeters: Instadose, filter pack, and types of electronic dosimeters
- Procedures for disposing radioactive waste were outlined.
- Emergency procedures in case of a release or spill: spill kit contents, skin decontamination, spill cleanup, documentation, rules for radiation responders, and reporting.

- Basic principles of radiation detection: gas ionization (ion chamber, gas proportional counter, Geiger – Muller) and scintillation (NaI, plastic and ZnS)
- Choosing the correct instrument: factors affecting the instrument performance and sensitivities for the various instruments.
- Types of calibration: exposure and activity
- Factors affecting the instruments: pressure, temperature, humidity, window material and thickness, resolving time, calibration conditions, energy dependence, background, absorption, and scattering.
- Hands on instrument training: measure a source at various distances: Smart Ion Chamber 450B, Bicron Ion Chamber RSO-50E, Victoreen 451P, Ludlum Model 19A Micro R Meter, Bicron Microrem Meter, and Ludlum Model 5 GM Meter.
- Evaluate instrument readings: compare readings to the activity for the source.
- Procedure for conducting a surface contamination survey: types of isotopes, locations to be metered, items required for doing surveys, analysis of smears, recommended action levels, and survey forms.
- Shipping of radioactive material: DOT requirements, categories of radioactive materials, activity of the different radionuclides, packaging, contamination, and receiving packages.
- Waste management: types of waste (low level radioactive, high level radioactive, transuranic, mixed, and NARM), regulations (10 CFR and 40 CFR), methods and requirements of each type of waste management.
- Waste methods: transfer to licensed recipient, decay-in-storage, release in effluent.
- Elements of a radiation safety program: annual audit, monitoring instruments, material receipt and accountability, occupational dose, public dose, safe use, security, surveys, leak tests, transportation, contamination minimization, and waste disposal.

<u>Radiation Safety Experience:</u>

- NIOSH, Pittsburgh, PA, July 2010 to Present: Position as Industrial Hygienist in the Environmental Health & Safety group. Work with Radiation Safety Officer in radiation safety and inspections of work places with radioactive sources. Assist with annual inventory of radioactive sealed sources (Krypton-85, Polonium-210, Americium-241) and revising NRC License Amendment for updating Authorized Users. Familiar with elements of NIOSH Pittsburgh Radiation Safety Program.
    - Maintain ALARA exposures (maximize distance, minimize time, and shielding).
    - Use chemical fume hood, certified for radioactive materials, to limit inhalation exposure from unsealed radioactive material.
    - Do not eat or drink in any area where radioactive materials are used.
    - Use measures that prevent the contamination of skin and eyes.

- Ensure that procurement, transfer, shipping/receiving and security of radioactive material in accordance with NRC and DOT regulations.
- Purchase radioactive material using a purchase order and not with a credit card after receiving approval of Radiation Safety Officer.
- Use the correct object code for radioactive material so that the "Radioactive Materials" approval thread in the procurement system is activated.
- The Radiation Safety Officer (RSO) ensures that the radioactive material requested does not exceed the quantity or activity specified in the Material License for that radionuclide.
- The Radiation Safety Officer will provide the vendor with our NRC License information if necessary.
- All radioactive materials at NIOSH-Pgh must be secured or be under constant surveillance at all times.
- Only the RSO or designed shipping and receiving personnel may receive radioactive material that arrive by commercial carrier or are mailed to NIOSH-Pittsburgh.
- Delivery personnel are prohibited from delivering a package with radioactive materials unless there is an Authorized person (Authorized User, Radiation Worker) at the location who will accept it, sign for its receipt, and secure the radioactive materials.
- Upon arrival of a package containing licensed material, the RSO shall immediately identify the package to determine whether or not an inspection is necessary in accordance with 10 CFR 20.
- An inspection includes monitoring of the external surfaces of the package for radioactive contamination.
- If radioactive contamination is found on the package, the RSO will notify the delivery carrier and the NRC regional office immediately. The RSO will also secure the package in a safe area to preclude exposure risk.
- An Authorized User and/or a designee must keep records of all radioactive materials being used, stored, ordered, received, and disposed. Records must be maintained by the AU for a period of 3 years.
- A Change in Custody form must be completed after receiving approval from the RSO when there is a change in ownership or location.
- Dosimeters are not required for workers at NIOSH-Pittsburgh.
- Each area, drawer, cabinet or laboratory used to store or contain licensed radioactive material shall be conspicuously posted with sign bearing the radiation caution symbol and the words "Caution (or Danger), Radioactive Materials."
- A current NRC 3 form "Notice to Employees," and Section 206 Noncompliance Form must be posted so that it can be easily seen by persons entering or leaving a restricted area.
- Laboratories with sealed sources will be surveyed at least biannually.
- Sealed sources will be surveyed by the laboratorians, with RSO assistance, for leakage and external contamination at least once every 6 months.
- Sources will also be surveyed before and after they are moved, after being dropped or otherwise damaged, and before and after maintenance.

- The EH&S Office will investigate all accident, spills, fires, or other incidents in which radiological material is involved
- All Authorized Users and Radiation Workers under their supervision who work with radioisotopes must receive instruction on radiation safety, biological effects of radiation, regulatory requirements, and laboratory techniques in compliance with 10 CFR 19.12.

- URS, Pittsburgh, PA, 2005-2010: Designated as Radiation Worker. Measured iron oxide particle size distribution with TSI particle analyzer instrumentation which utilized a neutralizer containing Kr-85. Ensured that the proper signage was posted for both the TSI neutralizer and a PerkinElmer gas chromatograph containing a Nickel-63 electron capture detector. Observed leak testing for Nickel-63 electron capture detector. Ensured that Chain of Custody for Radioactive Materials or Instruments Containing Radioactive Sources form was completed by the Authorized User when relocating instruments with radioactive sources. Assisted with radioactive source inventory. Ensured that laboratory was locked when not occupied and that surplus radioactive equipment was stored in a secure location.

- Industrial Scientific Corporation, Oakdale, PA, 1993-2002: Responsible for the safe storage and handling of thorium nitrate while Chemical Hygiene Officer. Measured alpha particle radioactivity level for the thorium nitrate using a Geiger-Mueller counter. Stored the thorium nitrate in a metal container so that adequately shielded.

Certificate of Training

Awarded To

Beth Tomasovic

Recognizing completion of 40 hours of specialized instruction in

Radiation Safety Officer

March 11, 2011

Presented By

Dade Moeller Radiation Safety Academy

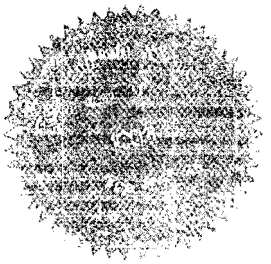
438 N. Frederick Avenue, Suite 220, Gaithersburg, MD 20877

www.moellerinc.com/academy -- 301-990-6006

AAHP has awarded this course 32 Continuing Education Credits, 2011-00-0019
ABIH has awarded this course 6.68 CM Points, CM Approval # 09-4745.
ARRT and SNMT have awarded up to 42.5 CEH's, 027194-027227

Ray Johnson

Ray Johnson, MS, PE, FHPS, CHP
Vice President, Training Programs



Dade Moeller
RADIATION SAFETY ACADEMY

Radiation Safety Officer
March 7-11, 2011

Instructors: Ray Johnson, MS, PE, FHPS, CHP, RSO; Alan Fellman, Ph.D., CHP, RSO; Sean Austin, MS, CHP, RSO; Kelly Austin, MS, CHP, RSO; Mike Jedlicka, BS

This course is intended to provide a minimum of 40 hours of required and elective classes to meet provisions of 10 CFR 33.15. Required classes are already checked. Please select elective classes for a total of 40 or more hours.

Day 1		Monday March 7, 2011	
Class Selected	**Start Time**	**Class Titles (electives in *bold, italics*)**	**Class Hours**
☑	8:00	Introduction, Course Overview, Views on Radiation	3.0
☑	11:00	Radiation and Radioactivity, Radioactive Decay	1.0
	12:00	Lunch (provided)	
☑	1:00	Radiation Units, Sources of Radiation, Interaction With Matter	3.0
☑	4:00	Health Effects	1.5
☑	5:30	Daily Review	0.5
☐	***6:00***	***Training for the Radiation Safety Trainer (optional)***	***1.5***
	7:30	Adjourn for the day	

Day 2		Tuesday March 8, 2011	
Class Selected	**Start Time**	**Class Titles (electives in *bold, italics*)**	**Class Hours**
☑	8:00	Radiation Protection Standards, 10 CFR Part 19 and 20	3.0
☑	11:00	Essential Highlights of 10 CFR Part 2, 30, 31, 33	1.0
	12:00	Lunch (provided)	
☑	*1:00*	External Radiation Protection and Shielding	*1.5*
☐	**2:30**	***Sealed Sources & Industrial Gauges***	**2.0**
☐	***2:30***	***Internal Radiation Protection***	**2.0**
☑	4:30	Emergency Response	1.0
☑	5:30	Daily Review	0.5
☐	***6:00***	***Math Review & Radiation Safety Problem Solving (optional)***	***1.5***
☐	7:30	Adjourn for the day	

(800) 871-7930

Day 3		Wednesday March 9, 2011	
Class Selected	Start Time	Class Titles (electives in *bold, italics)*	Class Hours
☑	8:00	Radiation Survey Instruments	4.0
	12:00	Lunch (provided)	
☑	12:30	Instruments Lab, Applications & Troubleshooting	2.0
☐	***2:30***	***Radiation Safety Surveys***	***1.5***
☐	***2:30***	***Security of Radioactive Sources – Increased Controls***	***1.5***
☑	4:00	*License Applications and Amendments*	1.0
☑	5:00	Daily Review	0.5
☐	***5:30***	***Hands On Laboratory Survey and PPE Exercise (optional)***	***1.5***
	7:00	Adjourn for the day	

Day 4		Thursday March 10, 2011	
Class Selected	Start Time	Class Titles (electives in *bold, italics)*	Class Hours
☑	8:00	Interpreting Radiation Measurements and Quality Assurance	1.5
☑	9:30	Transportation of Radioactive Materials Overview and Package Receiving	2.5
	12:00	Lunch (provided)	
☑	1:00	Developing a Training Program	1.5
☑	2:30	Practical Record-Keeping For RSOs	1.0
☐	***3:30***	***Radioactive Waste Management, Mixed Wastes***	***2.0***
☐	***3:30***	***X-Ray Safety***	***2.0***
☑	5:30	Daily Review	0.5
☐	***6:00***	***Reception (refreshments)***	
	7:30	Adjourn for the day	

Day 5		Friday March 11, 2011	
Class Selected	Start Time	Class Titles (electives in *bold, italics)*	Class Hours
☑	8:00	Legal Implications: Radiation Litigation	1.5
☑	9:30	First Steps as New RSOs	1.0
☑	10:30	Radiation Safety Program Management, Preparing for Regulatory Inspections	1.5
	12:00	Presentation of Certificates and Adjourn 40-hour course	
☐	***12:30***	***Liquid Scintillation Counting Option – Additional Fee***	***4.0***
☐	***12:30***	***DOT HAZMAT Certification Option – Additional Fee***	***4.0***
	5:00	Adjourn optional modules	

This is to acknowledge the receipt of your letter/application dated

7/7/2011, and to inform you that the initial processing which includes an administrative review has been performed.

Amendment (37-01712-11)

☒ 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** 575551.
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