BARBARA ANN
Karmanos
CANCER INSTITUTE
Wayne State University

December 16, 2021

U.S. Nuclear Regulatory Commission, Region III
Materials Licensing Branch
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Re: RSO change, NRC License #21-03298-06

Dear Reviewer,

We would like to request a transfer of the RSO position on license #21-03298-06 from Joseph T. Rakowski, Ph.D. to Huailei Jiang, Ph.D. Dr. Jiang is the cyclotron radiochemist and the designated licensed material use supervisor.

Dr. Jiang completed an accredited 40 hour Radiation Safety Officer Course, and a DOT Hazardous Materials course, certificates dated September 23, 2021 (attached).

If you require further assistance please feel free to contact our RSO Joe Rakowski at (313) 576-9616.

Thank you.

Sincerely,

Mara Jelich
Executive Director, Radiation Oncology and Imaging
Karmanos Cancer Center
4100 John R St., Mail Code GE00RO
Detroit, MI 48201

Attachments:
1. NRC Form 313A (RSO)
2. Huailei Jiang CV
3. RSO Course Certificate
4. DOT Hazmat Course Certificate
5. Radiation Safety Officer Course Description

RECEIVED DEC 21 2021

NRC FORM 313A (RSO) (01-2020) | U. S. NUCLEAR REGULATORY COMMISSION | APPROVED BY OMB: NO. 3150-0120 EXPIRES: 01/31/2023

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50]

Name of Individual ☑ RSO ☐ ARSO

Huailei Jiang, Ph.D.

Requested Authorization(s) *The license authorizes the following medical uses (check all that apply)*:

☑ 35.100 ☑ 35.200 ☐ 35.300 ☐ 35.400 ☐ 35.500 ☐ 35.600 (remote afterloader)

☐ 35.600 (teletherapy) ☐ 35.600 (gamma stereotactic radiosurgery) ☐ 35.1000 (_____)

PART I -- TRAINING AND EXPERIENCE

(Select one of the five methods below)

*Training and Experience, including board certification, must have been obtained within the 7 years preceding the date of application or the individual must have obtained related continuing education and experience since the required training and experience was completed. Provide dates, duration, and description of continuing education and experience related to the uses checked above.

☐ **1. Board Certification**

a. Provide a copy of the board certification.

b. If the board certification process has been recognized by the Commission or an Agreement State under 10 CFR 35.50;

(i) Go to the table in 5c and describe training provider and dates of training for each type of use for which authorization is sought.

(ii) Stop here

c. If the board certification was issued on or before October 24, 2005 and is listed in 10 CFR 35.57 (a)(2);

(i) Provide documentation demonstrating that the individual was using the requested materials and uses on or before October 24, 2005;

(ii) Stop here

OR

☐ **2. Current Radiation Safety Officer (RSO) or Associate Radiation Safety Officer (ARSO) Seeking Authorization to Be Recognized as a RSO or ARSO for the Additional Medical Uses Checked Above**

a. Use the table in section 5.c. to describe training in radiation safety, regulatory issues, and emergency procedures for the additional types of medical use for which recognition as RSO or ARSO is sought.

b. If board certified, provide a copy of the certificate and stop here. If not board certified, skip to and complete Part II Preceptor Attestation.

OR

☐ **3. Authorized User (AU), Authorized Medical Physicist (AMP), or Authorized Nuclear Pharmacist (ANP) identified on a license or permit in accordance with 10 CFR 35.50 (c)(2)**

a. Provide license number.

b. Use the table in section 5.c. to describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license.

c. If board certified, provide a copy of the certificate and stop here. If not board certified, skip to and complete Part II Preceptor Attestation.

OR

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50] (continued)

☐ **4. Individuals applying simultaneously to be the RSO and AU on a new license**

☐ a. Documentation of training and experience to be a new AU is attached

☐ b. The new license application is attached.

c. Stop here.

OR

☑ **5. Structured Educational Program for Proposed RSO or ARSO**

a. Classroom and Laboratory Training

Description of Training	Location of Training	Clock Hours	Dates of Training*
Radiation physics and instrumentation	Radiation Safety Engineering, Inc. Radiation Safety Officer Course online lectures and exams local on-site laboratory exercises	8	8/27/2021 to 9/24/2021
Radiation protection	Radiation Safety Engineering, Inc. Radiation Safety Officer Course online lectures and exams local on-site laboratory exercises	8	8/27/2021 to 9/24/2021
Mathematics pertaining to the use and measurement of radioactivity	Radiation Safety Engineering, Inc. Radiation Safety Officer Course online lectures and exams local on-site laboratory exercises	8	8/27/2021 to 9/24/2021
Radiation biology	Radiation Safety Engineering, Inc. Radiation Safety Officer Course online lectures and exams local on-site laboratory exercises	8	8/27/2021 to 9/24/2021
Radiation dosimetry	Radiation Safety Engineering, Inc. Radiation Safety Officer Course online lectures and exams local on-site laboratory exercises	8	8/27/2021 to 9/24/2021
	Total Hours of Training:	40	

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50] (continued)

5. Structured Educational Program for Proposed RSO or ARSO (continued)

b. Supervised Radiation Safety Experience

(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies copies of this section.)

Description of Experience	Location of Training/ License or Permit Number of Facility	Dates of Training*
Shipping, receiving, and performing related radiation surveys	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Using and performing checks for proper operation of instruments used to determine the activity of dosages, survey meters, and instruments used to measure radionuclides	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Securing and controlling byproduct material	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Using administrative controls to avoid mistakes in administration of byproduct material	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Using emergency procedures to control byproduct material	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Disposing of byproduct material	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Licensed Material Used (e.g., 35.100, 35.200, etc.)+ 35.100 and 35.200	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021

\+ Choose all applicable sections of 10 CFR Part 35 to describe radioisotopes and quantities used: 35.100, 35.200, 35.300, 35.400, 35.500, 35.600 remote afterloader units, 35.600 teletherapy units, 35.600 gamma stereotactic radiosurgery units, emerging technologies (provide list of devices).

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50] (continued)

5. Structured Educational Program for Proposed RSO or ARSO (continued)

b. Supervised Radiation Safety Experience (continued)

(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies of this section.)

Supervising Individual	License/Permit Number listing supervising individual as a Radiation Safety Officer or Associate Radiation Safety Officer
Joseph T. Rakowski	21-03298-06 and 21-04127-06

The supervising individual is authorized as the for the following medical uses:

- ☑ Radiation Safety Officer or the
- ☐ Associate Radiation Safety Officer

- ☑ 35.100
- ☑ 35.200
- ☑ 35.300
- ☑ 35.400
- ☐ 35.500
- ☑ 35.600 (remote afterloader)
- ☑ 35.600 (teletherapy)
- ☑ 35.600 (gamma stereotactic radiosurgery)
- ☑ 35.1000 (Gamma Knife Icon and Sirtex Mocrospheres)

c. Describe training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license for the RSO or types of use for which the ARSO will be listed on the license.

Description of Training	Training Provided By	Dates of Training*
Radiation safety, regulatory issues, and emergency procedures for 35.100, 35.200, and 35.500 uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.300 uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.400 uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.600 - teletherapy uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.600 - remote afterloader uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.600 - gamma stereotactic radiosurgery uses	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021
Radiation safety, regulatory issues, and emergency procedures for 35.1000, specify use(s):	Karmanos Cancer Center NRC License 21-03298-06	Dec 6, 2020 to Dec 6, 2021

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50] (continued)

5. Structured Educational Program for Proposed RSO or ARSO (continued)

c. Training in radiation safety, regulatory issues, and emergency procedures for all types of medical use on the license (continued)

Supervising Individual *If training was provided by supervising RSO, ARSO, AU, AMP, or ANP. (If more than one supervising individual is necessary to document supervised training, provide multiple copies of this page.)*	License/Permit Number listing supervising individual
Joseph T. Rakowski, Ph.D., RSO	NRC 21-03298-06 and NRC 21-04127-06

License/Permit lists supervising individual as:

- [x] Radiation Safety Officer
- [ ] Associate Radiation Safety Officer
- [ ] Authorized User
- [ ] Authorized Nuclear Pharmacist
- [ ] Authorized Medical Physicist

Authorized as RSO, ARSO, AU, ANP, or AMP for the following medical uses:

- [x] 35.100
- [x] 35.200
- [x] 35.300
- [x] 35.400
- [ ] 35.500
- [x] 35.600 (remote afterloader)
- [x] 35.600 (teletherapy)
- [x] 35.600 (gamma stereotactic radiosurgery)
- [x] 35.1000 (Gamma Knife Icon and Sirtex microspheres)

d. Skip to and complete Part II Preceptor Attestation.

PART II – PRECEPTOR ATTESTATION

Note: This part must be completed by the individual's preceptor. The preceptor does not have to be the supervising individual as long as the preceptor provides, directs, or verifies training and experience required. If more than one preceptor is necessary to document experience, obtain a separate preceptor statement from each.

First Section

Structured Educational Program for Proposed RSO or ARSO

- [x] I attest that Huailei Jiang, Ph.D. (Name of Proposed RSO/ARSO) has satisfactorily completed a structural educational program consisting of both 200 hours of classroom and laboratory training and one year of full-time radiation safety experience as required by 10 CFR 35.50(b)(1).

AND

Second Section

- [x] I attest that Huailei Jiang, Ph.D. (Name of Proposed RSO/ARSO) has training in radiation safety, regulatory issues, and emergency procedures for the following types of use:

***Check all that apply*:**

- [x] 35.100
- [x] 35.200
- [ ] 35.300 oral administration of less than or equal to 33 millicuries of sodium iodide I-131, for which a written directive is required
- [ ] 35.300 oral administration of greater than 33 millicuries of sodium iodide I-131
- [ ] 35.300 Parenteral administration of any radioactive drug that contains a radionuclide that is primarily used for its electron emission, beta radiation characteristics, alpha radiation characteristics, or photon energy of less than 150 keV, for which a written directive is required

NRC FORM 313A (RSO)
(01-2020)

U. S. NUCLEAR REGULATORY COMMISSION

RADIATION SAFETY OFFICER OR ASSOCIATE RADIATION SAFETY OFFICER TRAINING, EXPERIENCE AND PRECEPTOR ATTESTATION [10 CFR 35.57, 35.50] (continued)

PART II – PRECEPTOR ATTESTATION (continued)

Check all *that apply:*

- ☐ 35.400
- ☐ 35.500
- ☐ 35.600 remote afterloader units
- ☐ 35.600 teletherapy units
- ☐ 35.600 gamma stereotactic radiosurgery units
- ☐ 35.1000 emerging technologies, including:

Third Section **AND**

☑ I attest that Huailei Jiang, Ph.D.

Name of Proposed Radiation Safety Officer or Associate Radiation Safety Officer

is able to independently fulfill the radiation safety-related duties as:

☑ A Radiation Safety Officer for a medical use licensee.

OR

☐ An Associate Radiation Safety Officer for a medical use licensee.

Fourth Section
Complete the following for Preceptor Attestation and signature

☑ I am the Radiation Safety Officer for ☐ I am the Associate Radiation Safety Officer for

Name of Facility: Karmanos Cancer Center

License/Permit Number: NRC 21-03298-06 and NRC 21-04127-06

Name of Preceptor (Typed or printed)	Telephone Number	Date
Joseph T. Rakowski	(313) 576-9616	12/15/2021

Signature Joseph T. Rakowski

Date of Preparation: 03/24/2021

Signature

Huailei (Ray) Jiang, Ph.D

Office Address: Karmanos Cancer Institute
4100 John R St.
Mail Code CH00PT
Detroit, MI 48201
Office Telephone: 313-576-9918
E-mail Address: jiangh@karmanos.org

Educations

Mayo Clinic, MN	Research Fellow, PET Radiochemistry	2013 - 2016
University of Chinese Academy of Sciences	Ph. D, Medicinal Chemistry	2006 - 2012
Anhui Normal University	B.S, Applied Chemistry	2002 - 2006

Professional Experiences

Karmanos Cancer Institute/Wayne State University, MI 2020 to present
Scientific Director and Senior PET Radiochemist of Cyclotron and Radiochemistry Core/ Associate Professor of Oncology/Chair of RDRC

- Development of C-11 and F-18 labeled PET drugs for the precise diagnosis of cancer, heart and brain related diseases within theranostic concept.
- Supervision of cGMP manufacturing of PET drugs, including various (A)NDA, IND and RDRC PET drugs.

Mayo Clinic, FL 2018 to 2020
Senior PET Radiochemist/Assistant Professor of Radiology

- Validation of PET drug production for ANDA application; prepared for FDA's Pre-Approval Inspection (PAI) and received FDA approvals (F-18 FDG, C-11 Choline, N-13 Ammonia and F-18 Sodium Fluoride).
- Validation for IND PET drug: C-11 PIB/C-11 PK11195 and F-18 FDOPA/F-18 AV1451.
- Quality assurance activities. including continuous improvement on PET drug production process and quality control method; responsible for approval/release PET drug for clinical use.

Mayo Clinic, MN 2013 - 2018
Research Associate/Senior Research Fellow/Research Fellow

- Successful translation of novel radiotracers for IND studies, such as F-18 TFB for thyroid cancer and oncolytic virus reporter gene imaging.
- Development of F-18 FMISO analogs for hypoxia imaging.
- Novel F-18 radiochemistry development including production and transport of gaseous F-18-synthons.
- Involve solution target production of radiometals (Ga-68, Zr-89, Zn-63) and chelation development.

Memberships

Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2014 to present

Peer-reviewed articles

1) Jiang H, Fang P, et.al. Analysis of [^{11}C]Choline and [^{13}N]Ammonia using a single HPIC method. Applied Radiation and Isotopes, 2021, 168, 109560.
2) Vandergaast R, Khongwichit S, Jiang H, et. al. Enhanced noninvasive imaging of oncology models using the NIS reporter gene and bioluminescence imaging. Cancer Gene Therapy, 2020, 27 (3), 179-188
3) Jiang H and DeGrado T. ^{18}F-Tetrafluoroborate (^{18}F-TFB) and Its Analogs for PET Imaging of the Sodium/Iodide Symporter. Theranostics, 2018, 8 (14), 3918.
4) Jiang H, Bansal A, et.al. Synthesis and evaluation of ^{18}F-Hexafluorophosphate as a novel PET tracer for imaging of Sodium/Iodide Symporter in a Murine C6-Glioma Tumor Model. Bioorganic & Medicinal Chemistry, 2018, 26, 225-231.
5) Brunton B, Suksanpaisan L, Li H, Liu Q, Yu Y, Vrieze A, Zhang L, Jenks N, Jiang H. et al. New transgenic NIS reporter rats for longitudinal tracking of fibrogenesis by high-resolution imaging. Scientific reports, 2018, 8, 1-9.
6) Jiang H, Schmit RN, et.al. Safety, Pharmacokinetics, Metabolism and Radiation Dosimetry of ^{18}F-Tetrafluoroborate (^{18}F-TFB) in Healthy Human Subjects. European Journal of Nuclear Medicine and Molecular Imaging Research, 2017, 7, 90.
7) Jiang H, Bansal A, et.al. Synthesis of ^{18}F-Tetrafluoroborate (^{18}F-TFB) via Radiofluorination of Boron Trifluoride and Evaluation in a Murine C6-Glioma Tumor Model. Journal of Nuclear Medicine, 2016, 57, 1454-1459.
8) Hickey R, Mao S, Glorioso J, Elgilani F, Amiot B, Chen H, Rinaldo P, Marler R, Jiang H, et.al. Curative ex vivo Liver-directed Gene Therapy in a Pig Model of Hereditary Tyrosinemia Type 1. Science Translational Medicine, 2016, 8, 349ra99
9) DeGrado T, Kemp B, Pandey M, Jiang H, et.al. First-in-human PET Imaging of ^{63}Zn-zinc Citrate in Healthy Elderly Subjects and Patients with Alzheimer's Disease. Molecular imaging, 2016, 15, 1-10.
10) Jiang H, DiMagno S, DeGrado T. Production and Transport of Gaseous ^{18}F-Synthons: ^{18}F-Acyl Fluorides. Journal of Fluorine Chemistry, 2015, 180, 181-185.
11) Ou-Yang J, Zhao Y, Jiang H, et.al. A Simple, One-Pot Synthesis of Trans-Substituted Spiro [5, 5] undecane-1, 5, 9-triones with Aromatic Aldehydes and Meldrum's Acid as the Starting Materials. Australian Journal of Chemistry, 2015, 68, 1599-1602.
12) DeGrado T, Pandey M, Byrne J, Engelbrecht, H, Jiang H, et.al. Preparation and Preliminary Evaluation of ^{63}Zn Citrate as a Novel PET Imaging Biomarker for Zinc. Journal of Nuclear Medicine, 2014, 55, 1348-1354.
13) Pandey M, Byrne JF, Jiang H, et.al. Cyclotron Production of (68)Ga via the (68)Zn(p,n)(68)Ga Reaction in Aqueous Solution. American Journal of Nuclear Medicine and Molecular Imaging, 2014, 4, 303-310.
14) Domingo-Musibay E, Allen C, Kurokawa C, Hardcastle J, Aderca I, Msaouel P, Bansal A, Jiang H, et.al. Measles Edmonston Vaccine Strain Derivatives Have Potent Oncolytic Activity against Osteosarcoma. Cancer Gene Therapy, 2014, 21, 483-490.

15) Huang L, Lu C, Sun Y, Mao F, Luo Z, Su T, Jiang H, et.al. Multitarget-Directed Benzylideneindanone Derivatives: Anti-β-Amyloid (Aβ) Aggregation, Antioxidant, Metal Chelation, and Monoamine Oxidase B (MAO-B) Inhibition Properties against Alzheimer's Disease. Journal of Medicinal Chemistry, 2012, 55, 8483-8492.
16) Shan W J, Huang L, Zhou Q, Jiang H, et. al. Dual β_2-Adrenoceptor Agonists-PDE4 Inhibitors for the Treatment of Asthma and COPD. Bioorganic Medicinal & Chemistry Letters, 2012, 22, 1523-1526.
17) Jiang H, Wang X, et. al. Benzenediol-berberine Hybrids: Multifunctional Agents for Alzheimer's Disease. Bioorganic & Medicinal Chemistry, 2011, 19, 7228-7235.

Abstracts

Oral presentations

1) Jiang H, Jain M and Cai. H. Analysis of [^{11}C]Choline Using High Pressure Ion Chromatography System (HPIC) with Autosampler. Journal of Nuclear Medicine, 2019, (supp) S639.
2) Jiang H, Schmit N, et.al. cGMP Synthesis of Sodium-Iodide Symporter (NIS) Probe ^{18}F-Tetrafluoroborate (^{18}F-TFB) and Biodistribution in Healthy Male and Female Human Subjects. Journal of Nuclear Medicine, 2017 (supp) S682.
3) Jiang H, Bansal A, et.al. First Synthesis of [^{18}F]Hexafluorophosphate and In Vivo Evaluation as PET Reporter Probe for Sodium/Iodide Symporter Imaging. Journal of Labelled Compound and Radiopharmaceuticals, 2017 (suppl) S60.
4) Jiang H, DeGrado T. Acyl [^{18}F] Fluorides as Novel Synthons for Radiofluorination Journal of Nuclear Medicine, 2014 (suppl) S161.

Posters

1) Jiang H, Fang P, et.al. Kill two birds with one stone: Analysis of [^{11}C]choline and [^{13}N]ammonia with a single HPIC method. Journal of Nuclear Medicine, 2020, (supp) S1001.
2) Jiang H, Fairweather D, et.al. Improved Production of (R)-[^{11}C]PK11195 for PET Imaging of Inflammation. Journal of Nuclear Medicine, 2020, (supp) S1004.
3) Zhong J, Zhang L, Jiang H, et.al. High Resolution Longitudinal Monitoring of HSC Transplantation Using the NIS Reporter Gene and PET/CT Imaging. Molecular Therapy, 2017, (suppl) S308.
4) Jiang H, Bansal A, et.al. Synthesis of 18F-Tetrafluoroborate (^{18}F-TFB) via Radiofluorination of Boron Trifluoride and Evaluation in a Murine C6-Glioma Tumor Model. Journal of Nuclear Medicine, 2016, (suppl) S2721a.
5) DeGrado T, Kemp B, Pandey M, Jiang H, et.al. First-in-human PET Imaging of ^{63}Zn-zinc Citrate in Healthy Elderly Subjects and Patients with Alzheimer's Disease. Journal of Nuclear Medicine, 2016, (supp) S127
6) Jiang H, Pandey M, DeGrado T. Synthesis of [F-18] Tetrafluoroborate via Radiofluorination of BF_3. Journal of Labelled Compound and Radiopharmaceuticals, 2015, (suppl) S255.
7) DeGrado T, Nathan G, Jiang H, et.al. Automated Production of F-18-labeled Acyl Fluorides as F-18-fluorination Synthons. Journal of Labelled Compound and Radiopharmaceuticals, 2015, (suppl) S200.
8) Pandey M, Jiang H. et.al. Cyclotron Production of ^{68}Ga Using a Solution Target. Journal of Nuclear Medicine, 2014, (supp) S434.

Patents

1) Gaseous F-18 technologies. WO 2015/143019, PCT/US2015/021215
2) High specific activity preparation of F-18 tetrafluoroborate. WO2017189415, PCT/US2017/029089

RADIATION SAFETY ENGINEERING

This is to certify that

Huailei Jiang

has successfully completed

Radiation Safety Officer Course

Given on September 23, 2021

Course Director

RADIATION SAFETY ENGINEERING

This is to certify that

Huailei Jiang

has successfully completed

DOT HAZMAT Course

Given on September 23, 2021

Course Director

Radiation Safety Engineering, Inc.

RADIATION SAFETY OFFICER COURSE

Upcoming Classroom and Online Dates: December 6 – 9, 2021 & February 14 – 17, 2022

Also Available Online: Yes (New!)

Class Fee: $750

Location: Online only through the end of the COVID travel restrictions

Length: 4+ Days of pre-recorded lectures. Most students take about 40 hours to complete the pre-recorded lectures, homework, 5 labs, exercises, Q&A Sessions, and the two tests.

Accreditation: The American Academy of Health Physics (AAHP) has approved the Radiation Safety Officer Course for 40 CE credits. The approval ID Number is 2020-01-01-2912.

The 40 hour Radiation Safety Short course is intended for Radiation Safety Officers. Once completing the course, attendees will have the skills to effectively run a radiation safety program. The RSO course includes the required DOT training for the transportation of radioactive materials and contains several laboratories on radiation measurements and instrumentation. The course is an intensive four day lecture series with five virtual labs, live Q&A sessions through Zoom, and two tests (one for DOT and one for the general class). It normally takes students about 40 hours total to complete the program with the required homework. The class topics are listed below.

The cost for the Radiation Safety Officer course is $750 per person. The course is offered at the RSE training facility in Chandler, Arizona and online. In-person class offerings have been temporarily stopped until the end of the COVID pandemic. Online students must call the office ahead of the class to ensure all class materials are received before the class starts. Call (480) 897-9459 or (800) 477-8691.

An RSO training certificate and preceptor statement is also offered for those students that successfully complete EEE498/591 at the Ira A. Fulton School of Engineering at ASU. Click here for more information on that course.

RSO Course Topics Include:

- Review of Mathematics Principles
- Review of Physics Principles
- Atomic Structure and Physics
- Units of Radiation and Radioactivity
- Sealed Source Leak Checks
- Types of Ionizing Radiations
- Radiation Shielding Principles
- Units of Radiation Risk
- Use of Pocket Dosimeters
- Dose Estimates for Gamma Emitting Nuclides
- Acute Biological Effects of Ionizing Radiations
- Long Term Biological Effects of Ionizing Radiations
- Typical Radiation Doses from Background, Medicine, and Industry

- Dose Limits for Occupationally Exposed Individuals
- Techniques for Limiting Radiation Doses to Personnel
- Radiation Warning Signs
- Shipping Labeling Requirements
- Instrument Overview and Selection of Radiation Survey Instrument
- Department of Transportation Regulations Introduction
- Radioactive Materials Package Requirements
- Dose Rates and Removable Contamination of Packages
- Marking and Labeling of Packages
- Shipping Papers
- Shipping By Aircraft
- Excepted Packages
- Personnel Dosimetry
- License Requirements
- Area Surveys
- Calibration and QC of Instrumentation
- Radiation Safety Training
- Disposal of Radioactive Materials
- Laboratory On Use of GM Survey Meters
- Laboratory Specific to Course Attendees
- Laboratory on Smear Counting
- Laboratory on Emergency Response
- Laboratory On Proper Labeling and Receiving of Packages

In order to sign up for an upcoming Radiation Safety Officer Course please enter your registration information below. The cost for this course is $750 per person. We will contact you at the phone number provided to arrange payment. Payments via check, American Express, MasterCard and Visa are accepted.

Radiation Safety Officer Course Registration

Full Name*

Company Name

Mailing Address

City **State** **Zip**

Phone Number*

Email Address*

Desired Course Start Date

Comments & Questions

SUBMIT

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