



ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE  
8901 WISCONSIN AVENUE  
BETHESDA, MARYLAND 20889-5603



September 11, 2008

Mr. John McGrath  
Nuclear Regulatory Commission Region I  
475 Allendale Road  
King of Prussia, PA 19406

Br. J

Dear Mr. McGrath,

This letter requests that the NRC amend AFRRI licenses 19-08330-02 and 19-08330-03 to reflect the appointment of Anna M. J. Teachout as our Radiation Safety Officer (RSO).

Our current RSO, Lieutenant Matt D. Beery, will be returning shortly to his assigned duties with Military Medical Operations (MMO) here at the Armed Forces Radiobiology Research Institute. With recommendation of the Radionuclide and X-ray Safety Committee (RXSC), I have appointed Ms. Teachout to serve as RSO, pending NRC approval. Ms. Teachout's curriculum vitae (CV) is enclosed for your review.

Ms. Teachout brings over 17 years of knowledge gained from service with academic, private, and government sectors in the areas of radiation health and safety, use of large radiation sources, and radiation-producing machines to the AFRRI. In addition, Ms. Teachout has considerable experience with research reactor environments and their attendant health physics support requirements.

Thank you for your prompt attention to this request. If you have questions concerning this request, please call the Radiation Safety Office, Anna M.J. Teachout, at (301) 295-1285 or e-mail, [teachout@afri.usuhs.mil](mailto:teachout@afri.usuhs.mil).

Sincerely,

*Patricia K. Lillis-Hearne*

PATRICIA K. LILLIS-HEARNE  
COL, MC, USA  
Director

Enclosure

1. CV for Anna M.J. Teachout

2008 OCT - 03 PM 02:23

RECEIVED  
REGION I

03004545 03006931

142880/142881  
NRC/RGNI MATERIALS-002

**NRC FORM 313**  
(10-2005)  
10 CFR 30, 32, 33,  
34, 35, 36, 39, and 40

**U.S. NUCLEAR REGULATORY COMMISSION**

**APPROVED BY OMB: NO. 3150-0120**

**EXPIRES: 10/31/2008**

Estimated burden per response to comply with this mandatory collection request: 4.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**APPLICATION FOR MATERIAL 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 20555-0001

**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 19406-1415

**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 60532-4352

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 76011-4005

**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

**19-08330-02 &**

☒

B. AMENDMENT TO LICENSE NUMBER

**19-08330-03**

☐

C. RENEWAL OF LICENSE NUMBER

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

**AFRRI Bldg 42  
8901 Wisconsin Ave.  
Bethesda, MD 20889-5603**

**3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED**

**AFRRI Bldg 42  
8901 Wisconsin Ave.  
Bethesda, MD 20889-5603**

**4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION**

**Anna M. J. Teachout**

TELEPHONE NUMBER

**(301) 295-1285**

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.**

**(See attached)**

**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

AMOUNT  
ENCLOSED \$

**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 25, 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

**PATRICIA K. GILLES-Heorne**

SIGNATURE

**[Signature]**

DATE

**14 Sept 08**

**FOR NRC USE ONLY**

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

**Anna M. Johnson (A.J.) Teachout**

Office Telephone: 301.295-1285

Cellular Telephone: 301-466-4713

E-mail: [Teachout@AFRRI.USUHS.mil](mailto:Teachout@AFRRI.USUHS.mil)

**CURRICULUM VITAE****EDUCATION**

*Graduate Nuclear Science Program, San José State University, CA*

M.S. in radiological health physics (1994)

Dissertation: "A Comparison of Neutron Detection Systems with Radioisotopic Neutron Sources in Preparation for Characterization of the Neutron Spectra of Varian Model 2100 and 2300 Clinacs®"

Advisors: Dr. Peter Englert and Dr. Nolan Hertel

*Norfolk State University, Norfolk, VA*

B.S. in Physics (1990); Graduated summa cum laude

**EXPERIENCE**

*Texas Department of State Health Services, Radiation Branch, Inspections Unit, Austin, TX (2008)*

Radioactive Materials Inspector; Statewide roaming inspector (not assigned to a Region); Conducted performance-based inspections of radioactive materials (RAM) licensees throughout the state of Texas to ascertain compliance with regulatory and license conditions.

*Foxfire Scientific, Inc., Arlington, TX (2005-2007)*

Senior Health Physics Consultant; Performed radiation dose reconstructions for former atomic weapons employees and/or energy employees at current/former Department of Energy (DOE) sites covered under the Energy Employees Occupational Illness Compensation Program Act of 2000.

*Simon, Galasso & Frantz, PLC, Intellectual Property Practice Group; Toler Larson, and Able, LLP, both of Austin, TX (2001-2004)*

Technical Advisor and Patent Agent; Provided expertise in areas of radiation physics and radiochemistry, e.g., accelerator design, nuclear measurements, and reactor physics, as well as materials physics and chemistry (semiconductors and advanced fluids).

*Nuclear Engineering Teaching Laboratory (NETL), the University of Texas at Austin, Austin, TX (1993-2001)*

Radiation Safety/Reactor Health Physicist/Research Associate; Responsible for compliance with federal and state regulations as regards radioactive materials for

an NRC reactor license, an NRC special nuclear materials license, and Texas broad scope license issues and safety in an academic research environment.

*Varian Associates, Inc., Oncology Systems Division, and the Stanford Linear Accelerator (SLAC), Palo Alto, CA (1992-1993)*

Visiting Scientist; Conducted research on neutron spectroscopy employing various methods to quantify the neutron spectra, average energy, and neutron dose equivalent for all Varian clinical accelerators (2100-2300 Clinac® series) in both a clinical (oncology/radiology) and industrial (manufacturing facility) settings.

*The Continuous Electron Beam Accelerator Facility (CEBAF, now Thomas Jefferson National Laboratory), Newport News, VA (1989-1990)*

Research Associate; Performed the radiation shielding calculations for the focal plane detector (FPD) region of either spectrometer arm in experimental hall A. Work assessed the weight, volume, and cost of said shielding requirements.

## **PROFESSIONAL AFFILIATIONS**

South Texas Chapter, Health Physics Society  
Texas Section, American Physical Society  
American Physical Society (APS)  
APS Forum on Physics and Society  
APS Forum on Industrial and Applied Physics  
Beta Kappa Chi Honor Society  
Alpha Kappa Mu Honor Society

## **PROFESSIONAL ACCOMPLISHMENTS**

Registered Patent Agent, United States Patent and Trademark Office,  
Registration Nr. 54,486

President of the South Texas Chapter, Health Physics Society, 1998-1999

Science Teacher Workshops Coordinator and Fund Raising Committee Chair for the South Texas Chapter, Health Physics Society, 1996-1997

Selected by the American Physical Society to participate in their Industrial Summer Intern Program, 1991

Federal Aviation Administration certificated commercial pilot, fixed and rotary wing

## **PUBLICATIONS**

Neutron Field Characterization in the Vicinity of a PET Cyclotron, N.E. Hertel, H.R. Vega-Carrillo, A.J. Teachout, P. Jerabek, B.W. Wehring, Proceedings of the

13<sup>th</sup> Midyear Topical Meeting of the Health Physics Society: Health Physics of Radiation Generating Machines, January 5-8, 1997, San Jose, CA, pp. 461-69

A Case Study in Control of Access to Radiation Beams: Neutron Depth Profiling at the Nuclear Engineering Teaching Laboratory, The University of Texas at Austin, A.J. Teachout, T.L. Bauer, K. Unlu, B.W. Wehring, Proceedings of the American Nuclear Society 1996 Topical Meeting, Volume 2, No. Falmouth, MA, pp 888-93.

Paired Thermoluminescent Dosimeter Technique in Bonner Sphere Spectrometry, H.R. Vega-Carillo, N.E. Hertel, A.J. Teachout, B.W. Wehring, Transactions Am. Nucl. Soc. 73, 356 (1995).

A Comparison of Neutron Detection Systems with Radioisotopic Neutron Sources in Preparation for Characterization of the Neutron Spectra of Varian Model 2100 and 2300 Clinacs®, A.J. Teachout, M.M. Elsalim, J.H. Kleck, P.A.J. Englert, J.C. Liu, V., Vylet

Characterization of the Neutron Environment Around Varian Clinacs® Model 2100 C and 2300 C/D Medical Linear Accelerators, M.M. Elsalim, A.J. Teachout, P.A.J. Englert, J.H. Kleck, J.C. Liu, V. Vylet.

Gadolinium Neutron Capture Therapy Dosimetry Measurements, K.P. Cheng, K. Unlu, A.J. Teachout, N. M. Abdurrahman, B.W. Wehring, Transactions Am. Nucl. Soc. 73, 30 (1995).

Water-Extended Polyester Based Neutron Shielding Calculations, H.R. Vega-Carillo, A.J. Teachout, T.L. Bauer

A Comparative Study of the UTA4 and the MYS4 Bonner Sphere Response Matrices, H.R. Vega-Carillo, A.J. Teachout, B.W. Wehring

New Neutron Sources for Calibration Purposes, H.R. Vega-Carillo, A.J. Teachout, B.W. Wehring, Sociedad Nuclear Mexicana, VI. Congreso Annual Memorias, Vol I, 33 (1995).

Radiological Characteristics of Composite Materials for Hand Glove Protection, S. Landsberger, A.J. Teachout, D. Doo-doo Amoo, Amarillo National Resource Center for Plutonium.

Anna M. J. (AJ) Teachout

September 10, 2008

In addition to the required coursework, laboratories (e.g., Radiation Physics Instrumentation, Radiation Biophysics, Radiation Dosimetry, NRC and Agreement State Regulations, Applied Health Physics, et cetera) and thesis requirements for award of a Master of Science in Radiological Health Physics, the following is a representative sampling of some of the training classes I have taken:

*"Safety Aspects of Industrial Radiography," NRC H-305, (40 hrs) St. Rose, LA, 2008*

*"Materials Control and Security Systems and Principles Course," NRC S-200, (40 hrs) Albuquerque, NM 2008*

*"External and Internal Dose Reconstruction Criterion for Former Atomic Weapons Employees and Energy Employees," Dade Moeller & Associates, (40 hrs) Richland, WA 2005*

*"DOT & NRC Requirements for Shipping and Receiving Radioactive Materials," Technical Training Associates, (32 hrs) Oak Ridge, TN 1994, 1999*

*"Reactor Health Physics," Health Physics Society Summer School, (40 hrs) Beverly, MA 1995*

The following listing recounts some courses of instruction which I have presented:

*"Accelerator Health Physics"* Taught a two hour block of an eight hour course of instruction in radiation safety and radiation safety issues to the Texas Department of Health, Bureau of Radiation Control, Austin, TX 1999.

*"Neutron Dosimetry and Neutron Measurements"* Taught three class sessions each semester as a 'substitute instructor' for the professor whose undergraduate mechanical/nuclear engineering class had a module on the interaction of radiation with matter (radiation physics). 1994-1999

Conducted distance learning (televised "webinar") sessions on transportation regulations and requirements for radioactive materials for the University of Texas at Austin's health physics undergraduate program. 1998-2000

Conducted (organizer/moderator/instructor) several Science Teacher Workshops throughout the state of Texas. Taught blocks of instruction on radiation units, environmental radiation, and current topics in radiation (nuclear power, waste disposal, popularity of CT scans and its implications, et cetera) 1996-1997

Participated in several *Women in Engineering and Science* and *Expanding Your Horizons* symposia as a presenter. Presentations about the generally unknown uses of radioactive materials in our daily lives (permanent press clothing, curing non-stick cookware, et cetera), as well as careers in radiation physics or radiological health physics. 1994-2000

27 August 2008

RSDL

MEMORANDUM FOR RECORD

Subject: COBALT 60 IRRADIATION FACILITY RADIATION SAFETY OFFICER  
QUALIFICATIONS

1. This is to certify that Ms. Anna M. Teachout has met the qualifications to be the RSO for the Cobalt 60 Irradiation Facility.
2. Ms. Teachout has completed the minimum of 4 hours of on the job training (OJT) per training standard 8 2b (3) (b) of NRC License 19-08330-03. Scored a 100% on a 24 question written examination, scoring a 100% on the oral examination, testing her knowledge on safety operation and emergency procedures.
3. Ms. Teachout has reviewed the 10 CFR 39 and NUREG-1345
4. Ms. Teachout has over 17 years practical experience in this field and 8 years experience as a Radiation Safety/Reactor Health Physicist.



Mark Gee  
LINAC/COBALT Division Chief



**ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE**  
8901 WISCONSIN AVENUE  
BETHESDA, MARYLAND 20889-5603



September 11, 2008

**MEMORANDUM FOR DISTRIBUTION A**

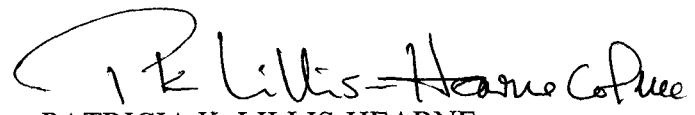
**Subject:** AFRRI Radiation Safety Officer (RSO) and Radiation Safety Committee (RSC) Appointments

**Reference:** AFRRI Instruction 6055.8

**Supersedes:** AFRRI memo of 15 November 2007, same subject

**Effective:** 13 October 2008, pending NRC approval

Anna M. J. Teachout, M.S., is appointed the AFRRI RSO and Member of the RSC and its two subcommittees, the Reactor and Radiation Facilities Safety Subcommittee (RRFSS) and the Radioisotope and X-Ray Safety Subcommittee (RXSS).

  
PATRICIA K. LILLIS-HEARNE  
COL, MC, USA  
Director



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

9/11/08, and to inform you that the initial processing which includes an administrative review has been performed.

☒ Amendments (19-08330-02 and 19-08330-03)  
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

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** 142980/142881  
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