



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY RESEARCH INSTITUTE OF ENVIRONMENTAL MEDICINE
KANSAS STREET
BUILDING 42
NATICK, MA 01760-5007

January 13, 2011

Radiation Safety Officer, USARIEM

Licensing Assistance Team
Division of Nuclear materials Safety
U.S. Nuclear Regulatory Commission Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

J-6

RE: MC 574146

03036434

Dear Sir/Ma'am:

As per communications with Mr. Dennis Lawyer I have made a few editorial changes to two pages (Items 5-12 and Item 8) of the amendment packet to NRC Materials License 20-30847-01.

Attached is the revised amendment packet documentation in pdf format.

I can be reached at (508) 233-4264 for additional information.

Sincerely,

Michael D. Blaha
Radiation Safety Officer, USARIEM

574146

NMSS/RGN1 MATERIALS-002

Items 5 – 12 for NRC Form 313

5. Radioactive Material: Same as listed on Original License # 20-30847-01.
6. Purpose for which licensed material will be used: Same as listed on Original License # 20-30847-01.
7. Individual responsible for Radiation Safety Program and their training experience: Mr. Jeffrey F. Oliver. Mr. Oliver's experience is detailed in the amendment memorandum.
8. Training for individuals working in or frequenting restricted areas: Training for individuals who receive, transfer, store or use radioactive materials should be every year, but performed at least within two years. Training will be conducted by the Radiation Safety Officer (RSO) and/or authorized users or competent users.
9. Facilities and Equipment: Gamma counter (Perkin Elmer 10 channel Wizard).
10. Radiation Safety Program: Same as listed on Original License #20-30847-01, but with change of RSO name.
11. Waste Management: Same as listed on Original License #20-30847-01.
12. License Fees Category: Same as listed on Original License #20-30847-01.

RADIOACTIVE MATERIAL

<u>Element and Mass Number</u>	<u>Chemical and/or Physical Form</u>	<u>Maximum Activity</u>
Hydrogen – 3	Any	100 mCi
Carbon – 14	Any	100 mCi
Phosphorus – 32	Any	10 mCi
Phosphorus – 33	Any	10 mCi
Sulphur – 35	Any	10 mCi

PURPOSE(S) for WHICH LICENSED MATERIAL WILL BE USED

Research and development in laboratory analysis, exploration or experimentation; or the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, materials, and processes to include substrate analysis. This may include the internal or external administration of byproduct material, or the radiation therefrom into cell cultures and/or animal models. This **will not include** the administration of radioactive material to human beings.

**INDIVIDUALS RESPONSIBLE for RADIATION SAFETY and THEIR
TRAINING EXPERIENCE**

Mr. Jeffrey F. Oliver, U.S. Army Research Institute of Environmental Medicine, Radiation Safety Officer (RSO)

Vocational Experience with Radiation:

Alternate Radiation Safety Officer, September 2009 – Present, U.S. Army Research Institute of Environmental Medicine

FAX: 508 233-5298 email: Jeffrey.oliver5@us.army.mil

Radiation Training, Formal Courses:

Radiation Safety Officer Course – Radiation Safety Academy, Gaithersberg, MD (40Hrs, Sept 2009)

Experience/Training:

USARIEM Safety Officer – Responsible for all safety programs (2008-present).

RCRA-Manifesting (40CFR262.20) 11/9/1998

Hazardous Waste Operations-40 hour (29CFR1910.120(e)(3)I) 9/14-18/1998

RCRA-Manifesting (40CFR262.20) 8/23/1999

RCRA/DOT Hazardous Waste Management Training (40CFR265.16 & 49CFR172.704) 9/29/2000

OSHA Training for Confined Space Entry & Rescue (29CFR1910.146 & 29CFR1926.956) 10/23/2000

#501 Trainer Course in Occupational Safety & Health Standards for General Industry(1/1/2002)(2.5CEUs)

#521 OSHA Guide to Voluntary Compliance in the Industrial Hygiene Area 6/28/2002 (2.5 CEU's)

#2225 OSHA Respiratory Protection 6/10/2004 (1.5 CEU's)

#7845 OSHA Recordkeeping Rule 7/23/2004 (0.4 CEU's)

OSHA General Industry Occupational Safety and Health Standards 11/ 7-10/2005 (3.0 CEU's)

#503 Update for OSHA General Industry Outreach Trainers 4/14/2006 (1.7 CEU's)

OSHA Construction Outreach (10-hour) 4/22/2006

The Essentials of OSHA Compliance 1/12/2007 (1.2 CEU's)

Biosafety & Biosecurity for Research Laboratories 3/28-29-2007

OSHA 8-hour Hazardous Waste and Emergency Operations Refresher (29CFR1910.120) 4/3/2007

NCOS-7205 OSHA Health Hazard Awareness 5/16/2008 (0.7 CEU's)

DoD Information Assurance Awareness 8/2009

Privacy Act and HIPPA Operations Training 9/15/2009

Respiratory Protection Training 2009

Environmental, Safety and Health Training 2009
Regulatory Compliance Training 2009
Radiation Safety Officer with LSC Fundamentals 9/25/2009 (40 Hrs, CM Approval #09-212)
Personally Identifiable Information Version 1.0 9/30/2009
Environmental Management System (EMS) Internal Auditor Training 10/5-6/2009
Composite Risk Management Civilian Basic 11/17/2009
Bloodborne Pathogens 11/23/2009
Laboratory Safety 11/23/2009
Commanders Safety Course 12/31/2009
Military Briefings 1/1/2010
FEMA Emergency Planning IS-00235 2/4/2010 (1.0 IACET CEU)
Radiation Safety (The Basics) 3/26/2010
FEMA Radiological Emergency Management IS-00003 3/30/2010 (1.0 IACET CEU)
Annual EMS Training Awareness 4/6/2010
Privacy Act and HIPPA Operations Refresher 3/2010
FEMA Introduction to the Incident Command System, ICS – 100 5/25/2010 (0.3 IACET CEU)
FEMA ICS for Single Resources and Initial Action Incidents, ICS – 200 5/28/2010 (0.3 IACET CEU)
Hazardous Waste Management Refresher 6/16/2010
Anti Terrorist Level 1 Awareness Training 6/22/2010
Information Assurance Awareness Training 6/24/2010
DoD Information Assurance Awareness Training 6/28/2010
MEMA Incident Command System 300 (ICS-300) Training 7/7-8-9/2010
Safety Committee Member Training (MRMC Course) 7/12/2010
The Supervisor's Safety Course 12/10/2010
FEMA National Response Framework, An Introduction IS-00800.b (0.3 IACET CEU) 15/12/2010
System Safety in Systems Engineering CLE009 Section 888 (CLPs: 3.5) 12/16/2010

Mr. Michael D. Blaha, U.S. Army Research Institute of Environmental Medicine, Authorized User of radionuclides under NRC license #20-30847-01

Vocational Experience with Radiation:

Radiation Safety Officer September 2009 - Present
U.S. Army Research Institute of Environmental Medicine
FAX: 508 233-5298 email: michael.blaha@us.army.mil

Education:

1972 B.S. (Biology), C.W. Post College, L.I.U.
1989 M.S. Food/Nutrition, Framingham State College
1983 – Present Research Biologist, United States Army Research Institute of
 Environmental Medicine, Natick, Massachusetts

Radiation Training, Formal Courses:

Radiation Safety Officer Course – Radiation Safety Academy, Gaithersberg, MD (40 hrs, Sept 2009)

Also, college coursework related to radionuclides: Physics (1 yr), Biochemistry (1 ½ yr), Nutritional Biochemistry (Food Irradiation).

Radiation-Related Experience:

On-the-job training and experience since 1975 with the following radionuclides:

P^{32} exchange determinations

C^{14}

H^3

S^{35}

I^{125}

[All of the above were μCi activities as part of laboratory assays or kits]

As Lab Manager for 20 years I have trained numerous military and civilian employees in how to safely handle and conduct assays involving radionuclides.

Attended approximately 12 annual Radiation Safety Training sessions run by Paul Angelis, the Radiation Safety Officer.

Had been a participating member of the Natick Soldier System's Center's Radiation Safety Committee from 1994-2004, a group tasked with upholding the NRC license requirements for all Principal Users and Radiation Workers at the Natick Facility.

Have an outstanding safety record and reputation for fastidious work.

Reference NRC Form 313 Item #8

**TRAINING for INDIVIDUALS WORKING IN OR FREQUENTING
RESTRICTED AREAS**

Training for individuals who receive, transfer, store or use radioactive materials should be every year, but performed at least within two years. The training is to familiarize personnel as to what precautions or procedures to utilize in order to minimize exposure to radiation and reduce the chance of health problems associated with exposure to radioactive materials. They should also be made familiar with the purposes and functions of protective devices employed. Annual training will be IAW NRC Regulatory Guide 8.29 (Instruction Concerning Risks from Occupational Radiation Exposure) for their protection from exposure to ionizing radiation. Training will be before duties with or in the vicinity of radioactive materials and will be re-instructed whenever there is a significant change in duties, regulations or terms of NRC License. Annual training will be conducted by the Radiation Safety Officer (RSO) and/or authorized users or competent users. Training may be assessed by course content exams.

This training will also include:

Waste Management, see Reference NRC Form 313 Item #10, section 13.

Installation's ALARA Policy, see Reference NRC Form 313 Item #10, section 6, and their appropriate response to an unusual occurrence or emergency that may involve radioactive material contamination with or without injuries, see Reference NRC Form 313 Item #10, Appendix B.

FACILITIES and EQUIPMENT**Facilities:**

Locations within the U.S. Army Research Institute of Environmental Medicine (USARIEM) where radioactive materials are stored or used are conventional chemical, biological, and physical science laboratories. Laboratories are equipped with laboratory hoods where necessary, lockable refrigerators or freezers for storage of radioactive materials, sinks connected to the municipal sanitary sewerage system, impervious laboratory bench top working areas, etc. There are no changes in the locations and characteristics of the laboratories where radioactive materials will be stored or used or in the receiving area for the Institute.

Low Level Radioactive Waste (LLRW) is held in a LLRW secure enclosure, located on the Penthouse fourth floor of USARIEM.

Radiation Detection Instrumentation:

Portable Survey Instruments

<u>Manufacturer</u>	<u>Model #</u>	<u>Qty</u>	<u>Radiation Measured</u>
Eberline Instrument Corp	E-530	2	Gamma Monitor

We reserve the right to upgrade our survey instruments as necessary.

Radiation Laboratory (counting room) Instrumentation

<u>Manufacturer</u>	<u>Model #</u>	<u>Detector</u>	<u>Radiation Measured</u>
Packard	1900 TR	Tri Carb Liquid Scintillation Analyzer	Beta
Perkin Elmer	Wizard	End-well Type (10) Thallium activated sodium Iodide crystal	Gamma

We will use instruments that meet the radiation monitoring instrument specifications published in Appendix M to NUREG-1556, Volume 7.

Calibration Frequency:

Portable Survey Instruments will be calibrated at least annually commercially, after a repair or as determined necessary by the RSO. Radiation Laboratory instruments will be calibrated as required for usage. See Reference NRC Form 313 Item #10, Appendix C.

Monitoring and Radioactive Contamination.

We have done a prospective evaluation and determined that unmonitored individuals are not likely to receive, in one year a radiation dose in excess of 10% of the allowable limits in 10CFR 20 or we will monitor individuals in accordance with the criteria in the section entitled "Radiation Safety Program-Occupational Dose" in NUREG-1556, Volume 7".

We will survey our facility and maintain contamination levels in accordance with the survey frequencies and contamination levels published in Appendix Q to NUREG-1556, Volume 7. Leak tests will be performed at the intervals approved by the NRC and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by NRC to provide leak testing services to other licensees or using a leak test kit supplied by an organization authorized by NRC to provide leak test kits to other licensees and according to the sealed source or plated foil manufacturer's (distributor's) and kit supplier's instruction. As an alternative, we will implement the model leak test program published in Appendix R to NUREG-1556, Volume 7.

We will develop and maintain procedures for ensuring material accountability.

Emergency Procedures.

The procedures for safe use, including security of material, and emergencies have been developed. These procedures may be revised only if 1) changes are reviewed and approved by the licensee management and the RSO in writing; 2) the staff is provided training in the revised procedures prior to the implementation; 3) the changes are in compliance with the NRC regulations and the license; and 4) the changes do not degrade the effectiveness of the program.

Mr. Jeffrey F. Oliver
USARIEM Radiation Safety Officer

Reference NRC Form 313 Item #11.

WASTE MANAGEMENT

We will use the model Decay-in-Storage and Disposal of Liquids into Sanitary Sewer model waste procedures that are published in Appendix T to NUREG-1556, Volume 7.

AUTHORIZED USERS

1) Jeffrey F. Oliver

Radiation Training, Formal Courses:

Radiation Safety Officer Course – Radiation Safety Academy, Gaithersberg, MD (40Hrs.
Sept 2009)

Radiation Safety (The Basics) 3/26/2010

2) Michael D. Blaha

Radiation Training, Formal Courses:

Radiation Safety Officer Course – Radiation Safety Academy, Gaithersberg, MD (40Hrs.
Sept 2009)

Also, college coursework related to radionuclides: Physics (1 yr), Biochemistry (1 ½ yr),
Nutritional Biochemistry (Food Irradiation).

Radiation-Related Experience:

On-the-job training and experience since 1975 with the following radionuclides:

P³² exchange determinations

C¹⁴

H³

S³⁵

I¹²⁵

[All of the above were µCi activities as part of laboratory assays or kits]

As Lab Manager for 20 years I have trained numerous military and civilian employees in how to safely handle and conduct assays involving radionuclides.

Attended approximately 12 annual Radiation Safety Training sessions run by Paul Angelis, a previous Radiation Safety Officer.

Had been a participating member of the Natick Soldier System's Center's Radiation Safety Committee from 1994-2004, a group tasked with upholding the NRC license requirements for all Principal Users and Radiation Workers at the Natick Facility.

Have an outstanding safety record and reputation for fastidious work.

3) Bradley C. Nindl, Ph.D.

Training in Radiation, Formal Courses:

1) Principles and Practices of Radiation Use and Protection – The Pennsylvania State University Graduate Course 1995

2) Soldier System Command Annual Radiation Safety Course

3) Iodine – 125 (used in Radioimmunoassays, uCi amounts)