



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS RESEARCH LABORATORY
Gulf Ecology Division
1 Sabine Island Drive
Gulf Breeze, FL 32561-5299

OFFICE OF
RESEARCH AND DEVELOPMENT

February 24, 2011

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2011 MAR 21 PM 1:42

RECEIVED
REGION I

U.S. Nuclear Regulatory Commission
USNRC Region I
Division of Nuclear Materials Safety
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Sir or Madam:

03032959

This letter is in reference to NRC License 09-10672-03 as a request to amend the license by the addition and removal of staff.

Please remove the following users from the license as they are no longer using isotopes:

1. Deborah L. Santavy, Ph.D.
2. Rebecca L. Hemmer
3. Sherry Wilkinson

Please add the following user to the license:

1. Jason Mangum

Attached is documentation listing Jason Mangum's radiation training. For further questions, please contact Dr. Stephanie Friedman, RSO, at 850-934-2468. Thank you for your attention to this matter.

Sincerely,

William H. Benson, Ph.D.
Division Director
U.S. EPA Gulf Ecology Division

574702

NMSS/RGN1 MATERIALS-002

Additional Radiation Training for Jason Mangum

- East Carolina University - EHST 5540 Radiation Safety.
- Laser Institute of America - Laser Safety Officer with Hazard Analysis Training Course.
- Served as Assistant Laser Safety Officer for 4 years.
- Basic Worker Radiation Training courses in 2004 and 2010 at EPA, Research Triangle Park, NC.
- Served on Radiation Safety Committee for 7 years at EPA.

M. Mangum



United States
Environmental Protection Agency

"...to protect human health and to safeguard the natural environment..."

Certificate of Completion

awarded to

Jason Mangum

for successful completion of the course entitled

"BASIC RADIATION WORKER TRAINING"

(6 Hour Credit)

presented by

United States Environmental Protection Agency,
Research Triangle Park, North Carolina



Course Conducted on
January 26-27, 2010

Todd W. Baker

Todd W. Baker, MSPH, CHP
Radiation Safety Officer

**Basic Radiation Worker Training
Presentation Topics - General Outline
Conducted January 26 & 27, 2010
8:30 AM to 12:30 PM**

- I. Types of Ionizing Radiation
 - A. Alpha
 - B. Beta
 - C. Gamma/x-rays
 - D. Neutron
 - E. Accelerator/Other

- II. Activity Units and Half-Life Definition
 - A. Curie
 - B. Becquerel
 - C. Half-Life Definition
 - D. Decay Correction/Activity Sample Calculation
 - E. Radioactive Material Inventory

- III. Interactions of Radiation with Matter
 - A. Directly Ionizing
 - 1. Alpha
 - 2. Beta
 - B. Indirectly Ionizing
 - 1. X and gamma rays
 - 2. Neutrons and others

- IV. Basic Detector Theory
 - A. Ionization (e.g. – GM detector, gas flow proportional, etc.)
 - B. Scintillation (e.g. – NaI(Tl), liquid scintillation etc.)
 - C. Solid State (e.g. – surface barrier, Ge(Li), HPGe, etc.)
 - D. Demonstration
 - 1. Shielding thickness required for alpha, beta, and gamma emissions using a thin end-window GM detector
 - 2. Detection of low-energy photons with an appropriate survey instrument.

- V. Exposure Units
 - A. Roentgen
 - B. X-Unit

- VI. Dose Units
 - A. Absorbed Dose
 - 1. Rad
 - 2. Gray
 - B. Dose Equivalent
 - 1. Rem
 - 2. Sievert
 - C. Effective Dose Equivalent
 - 1. Rem (Whole Body)
 - 2. Sievert (Whole Body)
 - 3. Committed Effective Dose Equivalent
 - D. Total Effective Dose Equivalent

Basic Radiation Worker Training Outline (*continued*)

- VII. Sources of Radiation Exposure to US Population
 - A. Natural Radiation
 - 1. Cosmic
 - 2. Terrestrial
 - 3. Internal Body sources
 - B. Medical
 - C. Nuclear Weapons Fallout
 - D. Occupational Exposure

- VIII. Risks associated with exposure to ionizing radiation (*Radiation Risks Revisited* Video)
 - A. Somatic
 - 1. Prompt
 - 2. Delayed
 - B. Genetic Effects
 - C. Teratogenic Effects

- IX. Occupational Dose Limits
 - A. General Worker (10 CFR 20.1201)
 - B. Pregnant Worker (10 CFR 20.1208)
 - C. Minors (10 CFR 20.1207)
 - D. General Public
 - E. EMS Limits

- X. Personal Dosimetry/Exposure Monitoring/ALARA
 - A. External Exposure Monitoring
 - B. Internal Exposure Monitoring
 - C. Time, Distance, Shielding Principles
 - D. Required versus Voluntary Monitoring
 - E. EPA/RTP Dosimetry Program Procedures

- XI. Radiation Safety Program Elements
 - A. Radiation Safety Officer
 - B. Radiation Safety Committee
 - E. Records and Documentation Management
 - D. Personnel Training
 - E. Reports to Workers (NRC Form 4 & 5)
 - F. Postings and Notices (including NRC-3)

- XII. Radioactive Material Control
 - A. Labeling and Posting Requirements
 - B. Personal Protective Clothing
 - C. Laboratory Habits
 - D. Vacuum Line Protection


- XIII. EPA/RTP Site Specific Topics
 - A. Waste Handling Procedures Explained
 - B. Contamination Surveys
 - 1. Post Assay
 - 2. Monthly
 - 3. No Use/Inventory
 - C. Ordering Radioactive Materials
 - D. Security of Radioactive Materials
 - E. Emergency Numbers for Radiation Safety Manual
 - F. Required Records in Labs

Basic Radiation Worker Training Outline *(continued)*

- XIV. Contamination Surveys/Decontamination Procedures (*RADIATION SAFETY: The Key to Contamination Control & RADIATION SAFETY: The Key to Contamination Detection Videos*)
 - A. Proper Wipe Test Frequency and Methodology
 1. One (1) minute count time minimum
 2. Frequency dependent on radionuclide use; minimally once each month.
 3. Use detailed map to match location to wipe taken
 4. DECONTAMINATE and re-wipe any area found to be greater than three times the background (blank) rate.
 - B. Proper Survey Meter Technique
 - Demonstration employing a GM survey instrument versus a low energy photon survey meter.
 - C. Decontamination
 1. Requirements
 2. Methods
 3. Exercise
- XIV. Waste Types and Handling Procedures Explained
 - A. Dry Solid
 - B. Liquid (RCRA vs. Non-RCRA)
 - C. LS Vial (RCRA vs. Non-RCRA)
 - D. Animal Carcass/Bedding
- XV. Open Question and Answer Period
- XVI. Written Test

Mangum, Jason M.

T & E File ✓

 **United States**
Environmental Protection Agency
...to protect human health and to safeguard the natural environment...

Certificate of Completion

awarded to

Jason M. Mangum

for successful completion of the course entitled

"BASIC RADIATION WORKER TRAINING"

(6 Hour Credit)

presented by

**United States Environmental Protection Agency,
Research Triangle Park, North Carolina**



Course Conducted on
February 4 & 5, 2004

Todd W. Baker

Todd W. Baker, MSPH, CHP
Radiation Safety Officer

**Basic Radiation Worker Training
Presentation Topics - General Outline
Conducted February 4 & 5, 2004
8:00 AM - 12:00 Noon**

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 - C. Nuclear Weapons Fallout
 - D. Occupational Exposure

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

2/24/2011 (RECEIVED 3/21/2011), and to inform you that the initial processing which includes an administrative review has been performed.

- 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** 574702.
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