Exercise of the Capabilities of the FBI’s Radiological Evidence Examination Facility at Savannah River National Laboratory

FBI Laboratory
Quantico, VA

James F. Blankenship, PhD
JFBlankenship@fbi.gov
(703) 632-7624
Contents

- Radiological Evidence Examination Facility at Savannah River National Laboratory
- Hazardous Evidence Analysis Team
- Exercises
Objective

To fully examine evidence contaminated with or consisting of radiological and nuclear materials and provide timely results to investigators
Objective

To fully examine evidence contaminated with or consisting of radiological and nuclear materials and provide timely results to investigators
Radiological Evidence Examination Facility (REEF)

- At Savannah River National Laboratory
- 1500 sqft dedicated rad labs specifically designed for flexible use
- SRNL support staff and safety
MObile Digital Radiography and Isotope Identification System (MoDRIIS)
Hot Cells

4/29/2018
General Work Area 1
General Work Area 2
DNA Suite
Evidence Storage
FBI Examiners

• 2 year training program
• Competency testing
• Proficiency testing
• Oral boards
• Moot courts
• Accreditation
Hazardous Evidence Analysis Team (HEAT)

• Qualified forensic examiners
• 40 hours training per site
• Hazmat physical
• Exercises
Hazardous Evidence Analysis Team (HEAT)

- Trace Evidence
- DNA
- Explosives
- Firearms Tool Marks
- Latent Print
- Questioned Documents
- Computer Analysis Response Team
- Forensic Imaging
Exercise Scenario

FBI receives an anonymous tip that a backpack containing a radioactive source will be left in a Washington, DC metro station. Search of metro stations result in the collection of:

A back pack producing high levels of radiation categorized as Co-60

The evidence was then packaged by FBI Forensics Response assets and taken to REEF for further examination.
Exercise Scenario

Items actually contaminated with real $^{18}\text{F}$

$^{18}\text{F} \rightarrow ^{18}\text{O} + \text{e}^+$

$T_{1/2} = 1.8$ hours
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Scenario

- Notebook
- Mask
- Shirt
- Cell phone
- White powder
Exercise Scenario

- Notebook
- Mask
- Shirt
- Cell phone
- White powder
Exercise Scenario
Exercise Scenario
Exercise Scenario
Exercise Findings

The FBI HEAT at the REEF was able to:

- Accept, inventory, and segregate real radioactively contaminated items in a manner consistent with operations at the FBI Laboratory
- Process, photograph, and search 5 prints of value found on the notebook
- Process, collect, and prepare for comparison numerous hairs and fibers
- Download information from a cell phone
- Image all items of evidence