SAND2010-0549C

A Practical Workshop on Depleted Uranium (DU)

Fundamentals, Health and Environmental Issues, and Mitigation

February 21 – 24, 2010

Hosted by:

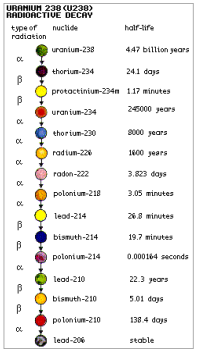
U.S. Central Command

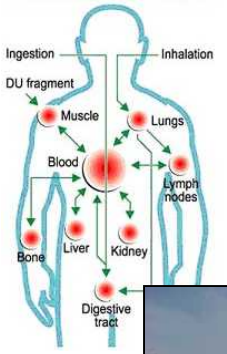
Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Sandia National Laboratories

Workshop Objectives

- Develop awareness regarding Depleted Uranium (DU), its characteristic, and potential hazards
- Enable participants to understand:
  - Radiation protection fundamentals
  - Physical and chemical properties of DU
  - Possible health risks associated with DU
  - Environmental pathways for DU
  - Techniques for the detection of DU
  - Mitigation options





Goal: Introduce the participants to various aspects of DU issues

Sandia National Laboratories

Intended Audience

Workshop intended for:

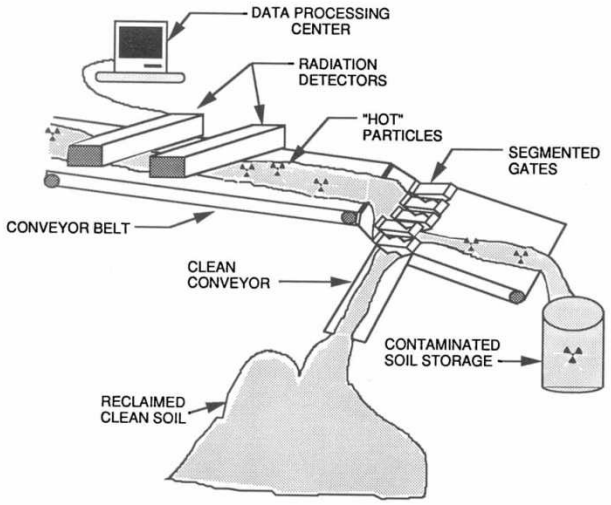
- Radiological Response Teams
- Monitoring Teams
- Clean-up Teams
- Healthcare Professionals
- Law Enforcement Personnel
- Government Authorities

Agenda

1. Radiation Basics
2. General Properties of Uranium
3. Biological Effects of Radiation Exposure
4. As Low As Reasonably Achievable (ALARA)
5. Biological Effects of Depleted Uranium (DU)
6. Radiation Instrumentation and Monitoring
7. Commercial and Military Applications of DU
8. DU Hazards and Protective Measures for the Public and the Environment
9. DU Hazards and Protective Measures for Monitoring Personnel
10. Monitoring, Assessment, and Mitigation
11. Case Study
12. Table Top Exercise

Approach & Methodology

- Use the Scientific Method
- Consideration for best use of limited resources
  - Systems Thinking and System Solutions
- Have a Questioning Attitude
- Informed Decision Making
- Put Risk in Perspective

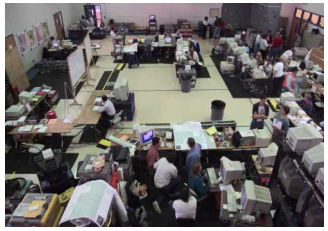


Scientific Method, Systems Thinking, and System Solutions are our best tools to help solve real-world problems effectively, and to manage resources efficiently

Sandia National Laboratories

Proper Response to Potential Discovery of DU

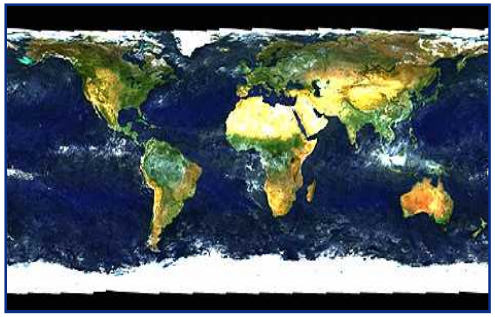
- Preparation is crucial to minimize impacts:
  - Public
  - Environment
  - Resources (human, economic, natural)
- Could relate to national security
- Reinforces the public confidence
- Could deter potential adversaries



- Improper response can overwhelm public safety resources

Proper training and exercise is crucial for proper response

Key Points



- Improper response to the discovery of DU in the environment can overwhelm public safety resources
- Effective and efficient response to such discoveries relates to national security
  - Proper training and exercise are crucial requirements for developing and executing proper responses
  - An objective and scientific approach is critical to understanding the hazards associated with any such discovery
  - And in developing the most effective response and mitigation plans for such incidents
- We hope this workshop will provide for a sound, fundamental understanding of the characteristics and potential hazards of DU