Overview

Los Alamos National Laboratory (LANL) has nearly 60 years of experience in developing and implementing Nondestructive Assay (NDA) technologies in support of nuclear safeguards, security, and nonproliferation.

The Safeguards and Security Technology Training Program (SSTTP) at LANL provides NDA training using nuclear material, specialized equipment, and subject-matter expert instructors. The SSTTP's modular training materials can be readily customized to meet customer's needs.

Facility Description & Capabilities

- The training and research facility at LANL's Technical Area 66 (TA-66) provides easy and safe access to sealed items including uranium and plutonium. These materials are used for teaching nuclear material measurements techniques and for research and development of new safeguards and security technologies.
- The 8,600 sq. ft. facility provides ample room for lectures and hands-on training, with two classrooms, a series of interconnected hands-on laboratory spaces, and meeting rooms for up to 24 participants. In addition to training, the facility is used for testing and evaluation of new safeguards technologies with certified nuclear material reference materials.
- Other areas at LANL, representative of actual nuclear fuel cycle facilities, are available for the development and training of nuclear security and safeguards approaches in a realistic environment. These locations in combination with the TA-66 facility yield a safe, secure, flexible, and realistic teaching environment to meet the needs of our domestics and international partners.
- This facility offers testing and evaluation of new safeguards technologies with significant quantities of NM. Certified reference materials are available for measurement campaigns, detector comparisons, and system characterization.

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Los Alamos NATIONAL LABORATORY

Advanced Neutron Nondestructive Assay



Course Description

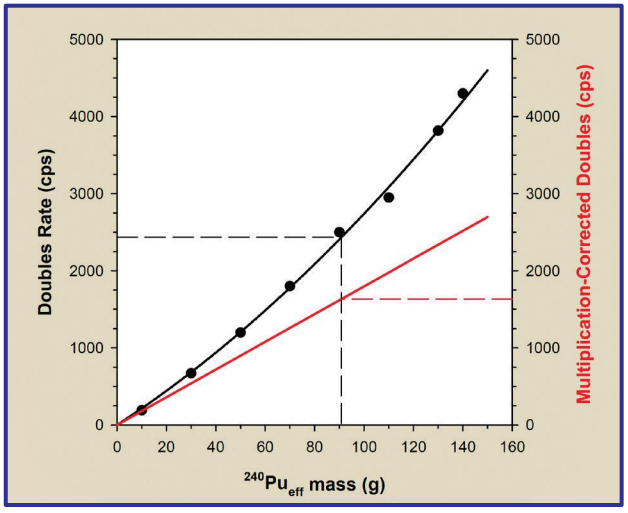
- This training course covers a wide range of neutron-based measurement techniques for material control and accounting (MC&A) purposes.
- The course is composed of lectures that describe underlying theories followed by hands-on laboratory exercises covering measurement techniques.

NDA Concepts Covered:

- Fundamental principles of neutron detection
- Passive neutron coincidence counting of bulk plutonium
- Multiplicity counting of bulk plutonium
- Active Neutron Coincidence Counting of bulk uranium and fresh fuel assemblies
- Waste characterization using neutron counting

NDA Equipment Covered: NMC, AWCC, UNCL, Add-a-source





Course Objective

To provide the participant with in-depth knowledge of the major neutron NDA techniques used in domestically for MC&A measurements of bulk special nuclear material (SNM) and in international safeguards.

Additional Information

Course Length: 4.5 days

Target Audience: Individuals that perform, manage, or supervise neutron based nondestructive assay (NDA) techniques. Auditors, regulators, and policy makers may also benefit from attending this course.

