Course Description

• This training seeks to deepen understanding of best practices behind the control and accountability of nuclear materials and how to integrate these into a facility.
• Provides instruction on the concepts of MC&A:
  – Tracking and verifying nuclear material
  – Nuclear material measurements
  – Maintaining records and reports
  – Data analysis to account for and detect loss of nuclear material
  – Investigation and resolution of apparent losses of nuclear materials
  – Assessment and testing of existing MC&A controls
• All instruction is focused on the protection of nuclear materials assets, providing timely detections of material loss, using a graded safeguards approach to meet national and international requirements and agreements.
• Instruction is in the form of classroom lectures on best practices, as well as tabletop exercises focusing on the application of MC&A elements and objectives.
• Course Duration: 3 days

MC&A Core Elements

Material Control: The use of controls (physical and procedural) and monitoring to prevent or detect loss of nuclear materials.

Material Accounting: Statistical and accounting measures to maintain knowledge of the quantity and pedigree of nuclear material.

MC&A System Integration

Accountability System

Physical Inventory

TIDs/Seals

Measurement Control

Measurement Systems

Inventory Difference Evaluation

Additional Controls

End Goal

Mitigating the risk of material loss that could be used in a nuclear weapon through physical deterrents and statistical accounting techniques.
Material Control and Accountability (MC&A) Training

**Material Control Elements**
- Access Controls
- Material Surveillance
- Material Containment
- Daily Administrative Checks
- Tamper Indicating Devices (TID) Programs
- SNM Portal Monitoring
- Waste Monitoring

**Material Accounting Elements**
- Material Accounting Systems
- Physical Inventory Program
- Measurement and Measurement Control Programs
- Material Transfers
- Material Control Indicators Programs
- Shipper/Received Difference Programs

**MC&A Course Goals**
*Learning the core elements of Material Control and Accountability and how to apply them to assess and test existing systems or to set up new systems.*

**Assessment of MC&A Program**
- Detection of anomalous activities
- Material transfer procedures
- Quality verification of accountability record data
- Operational process assessment
- Insider threat mitigation

**Establishment of Testing Program to**
- Promote continuous improvement in protection systems
- Produce data for lifecycle management
- Provide data for financial analysis for continued support/upgrades
- Promote quality by supporting improvement initiatives
- Integrate MC&A and physical protection