Expendable Launch Vehicle (ELV) Range Safety Analysis Course  
(SMA-SAFE-NSTC-0086)

(4 Days)

One of the primary roles of the Range Safety staff is to perform flight analyses to identify and mitigate public risk associated with range operations. This course is designed to give the student a detailed understanding of ELV range safety analysis. While providing an overview of NASA and FAA requirements, this course focuses on Air Force Space Command (AFSPC) requirements for flight safety analysis; a discussion of range operations hazards, risk criteria, and risk management processes; and an in-depth coverage of the containment and risk management analyses performed for expendable launch vehicles (ELVs) at the Eastern Range. The course concentrates on debris hazards and analyses but includes an overview of toxic, blast and radiation analyses. The course includes a class exercise that covers the entire analysis process.

Prerequisite:
Prior attendance at SMA-SAFE-NSTC-0074, Range Safety Orientation, or equivalent experience – engineering degree and a familiarity with range safety.

Target Audience:
- NASA, FAA and DoD Range Safety Analysts in training
- Range safety personnel in other disciplines
- Program/project managers and engineers who design potentially hazardous systems to operate on an AFSPC range
- Personnel who conduct hazardous operations on an AFSPC range

**Course Overview Module 1**
1.1 What is Analysis  
1.2 Why do we do Analysis  
1.3 What do we do

**Requirements Module 2**
2.1 Policies, Regulations and Requirements  
2.2 Roles and Responsibilities  
2.3 Documentation and Data Requirements

**Risk Management Module 3**
3.1 Risk Principles  
3.2 Risk Mitigation  
3.3 Risk Analysis

**Analysis Module 4**
4.1 Program Intro/PFPA  
4.2 RS Criteria Generation  
4.3 Hazardous Areas  
4.4 Final FPA  
4.5 Launch Day Support/Post Launch

**Other Hazards Module 5**
5.1 Toxic's  
5.2 Blast  
5.3 Radiation