Basic order in which PSM is conducted is based on 29 CFR 1910.119
What is PSM?

- Systematic, holistic approach to identifying, assessing, and managing the risk associated with every aspect of a process
- Required by law and directed by 29 CFR 1910.119
- Considers all facets of a process:
  - PROCESS DESIGN
  - PROCESS TECHNOLOGY
  - OPERATIONAL & MAINTENANCE PROCEDURES
  - NON-ROUTINE ACTIVITIES
  - EMERGENCY PLANS & PROCEDURES
  - TRAINING
  - ADDITIONAL ELEMENTS FOR CONSIDERATION

PSM TERMINOLOGY

Defined by the Occupational Safety and Health Administration (OSHA)

- PROCESS: Any activity involving a highly hazardous chemical
- HIGHLY HAZARDOUS CHEMICAL: A substance possessing toxic, reactive, flammable, or explosive properties
- FACILITY: Buildings, containers, or equipment that contain a process
- LABORATORY: A facility where the “laboratory use of hazardous chemicals” occurs; a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis
- CATASTROPHIC RELEASE: A major, uncontrolled emission, fire, or explosion involving highly hazardous chemicals that presents serious danger to workplace personnel

Process Hazard Analysis (PHA)

- Identical to Army Hazard Analysis and required for all operations involving energetic or hazardous materials

PHA Considerations and Methodologies

- Unique considerations for RDT&E:
  - remote operations
  - essential/nonessential personnel
  - protective construction
  - range safety
  - ammunition peculiar (APE), personal protective (PPE), and other equipment
- May involve multiple methodologies depending on number, type, and relationships of identified hazards
  - what-if?
  - checklist
  - fault tree analysis
  - hazard & operability (HAZOP) study
  - failure mode & effects (FMEA) analysis