



***UN ECE Sectoral Initiative on  
Equipment for Explosive  
Atmospheres***

*7 September 2011*

United States Department of Labor  
Mine Safety and Health Administration  
(MSHA)





# ***Presentation Agenda***

- Describe MSHA
- Applicable standards and requirements
- Testing by Applicant or Third Party  
(30 CFR Part 7)
- Independent Laboratory Rule (30 CFR Part 6)
- Obstacles to MSHA Acceptance of IECEx



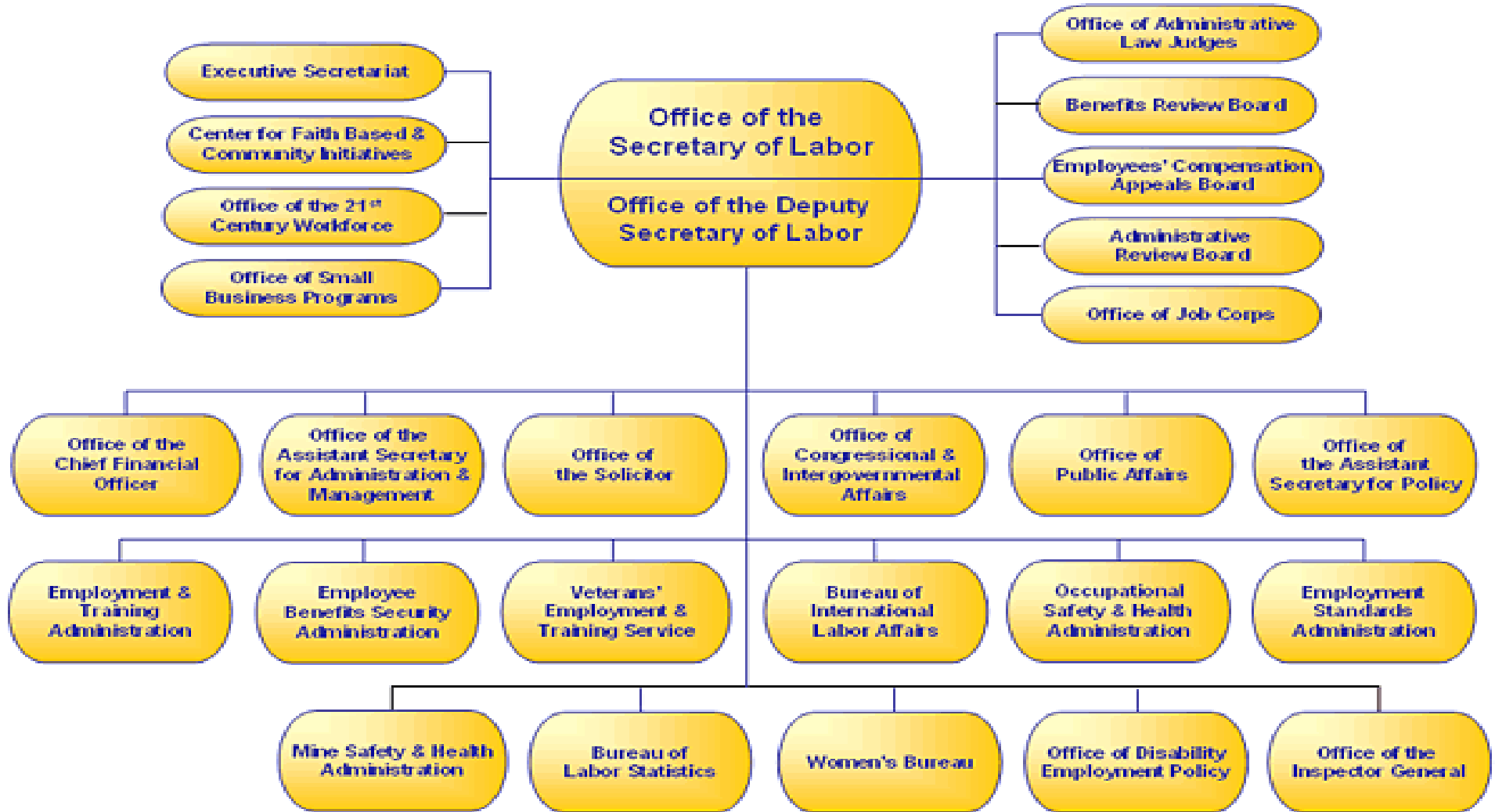
# ***MSHA is...***

- United States Department of Labor,  
Mine Safety and Health Administration
  - Federal mine safety and health enforcement agency
  - Approximately 2000 employees
    - 1200 mine inspectors
  - Title 30 Code of Federal Regulations (30 CFR)
  - National Mine Health and Safety Academy

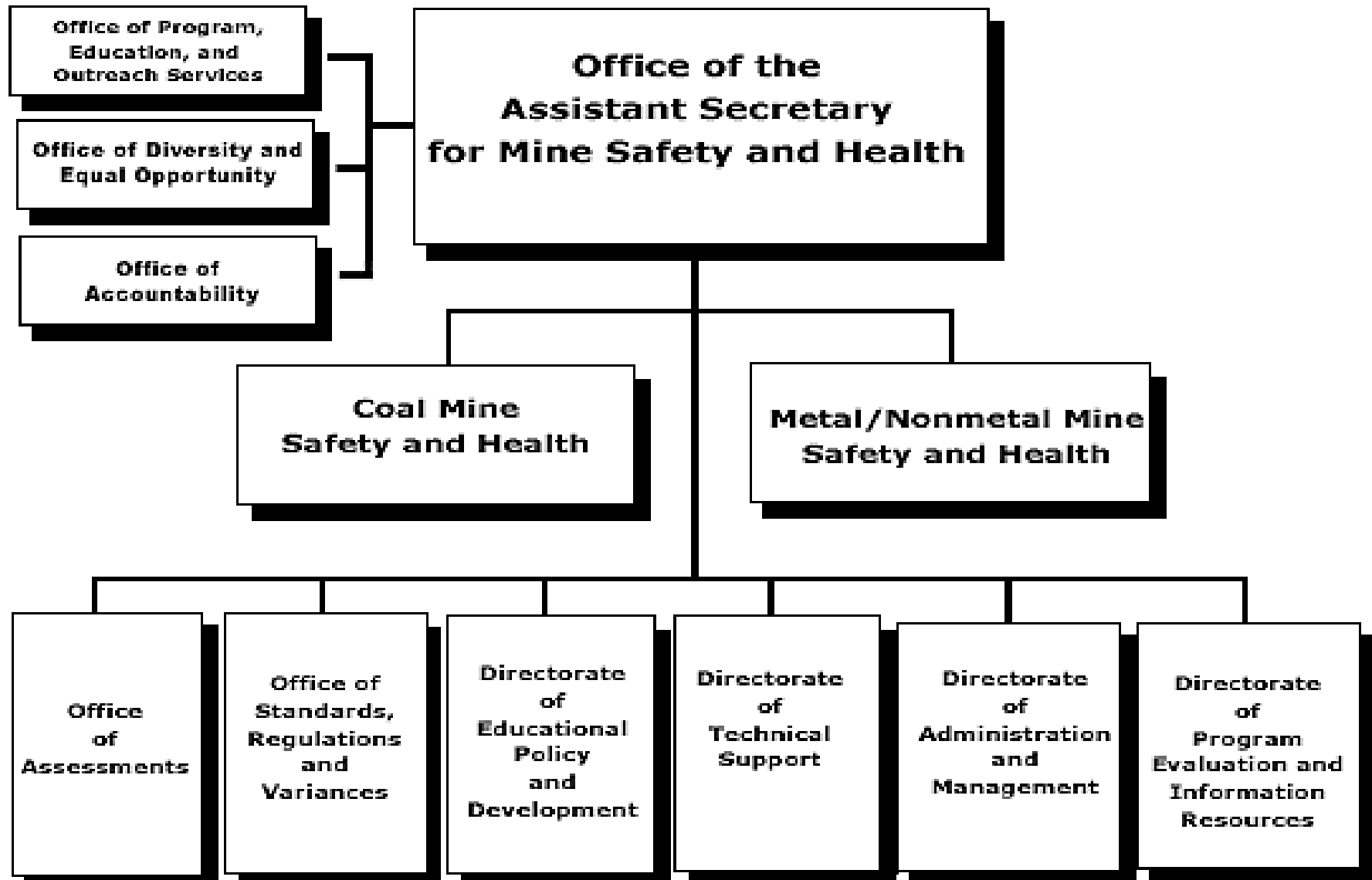




# US Department of Labor Organization Chart



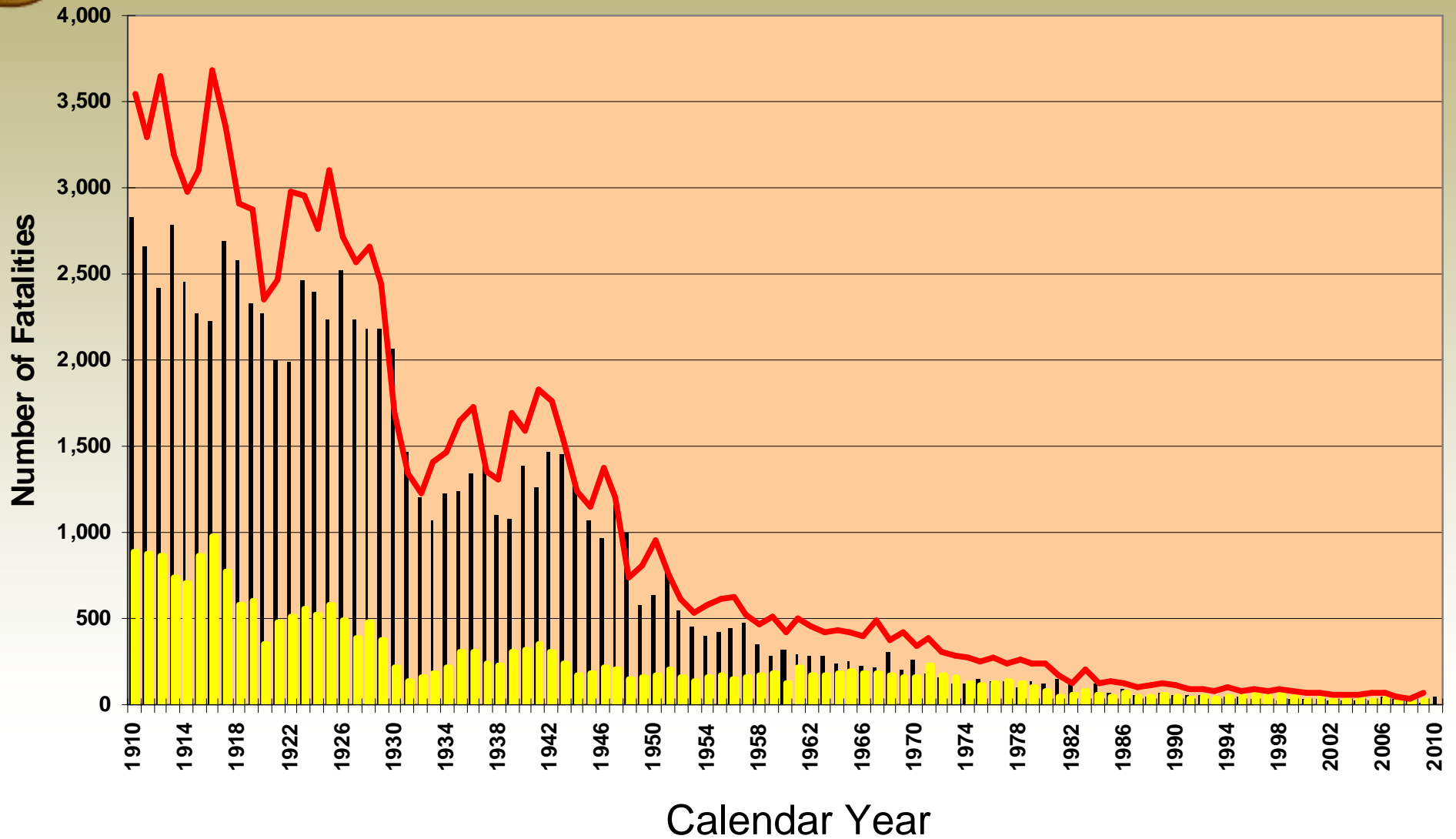
# ***MSHA Organization Chart***



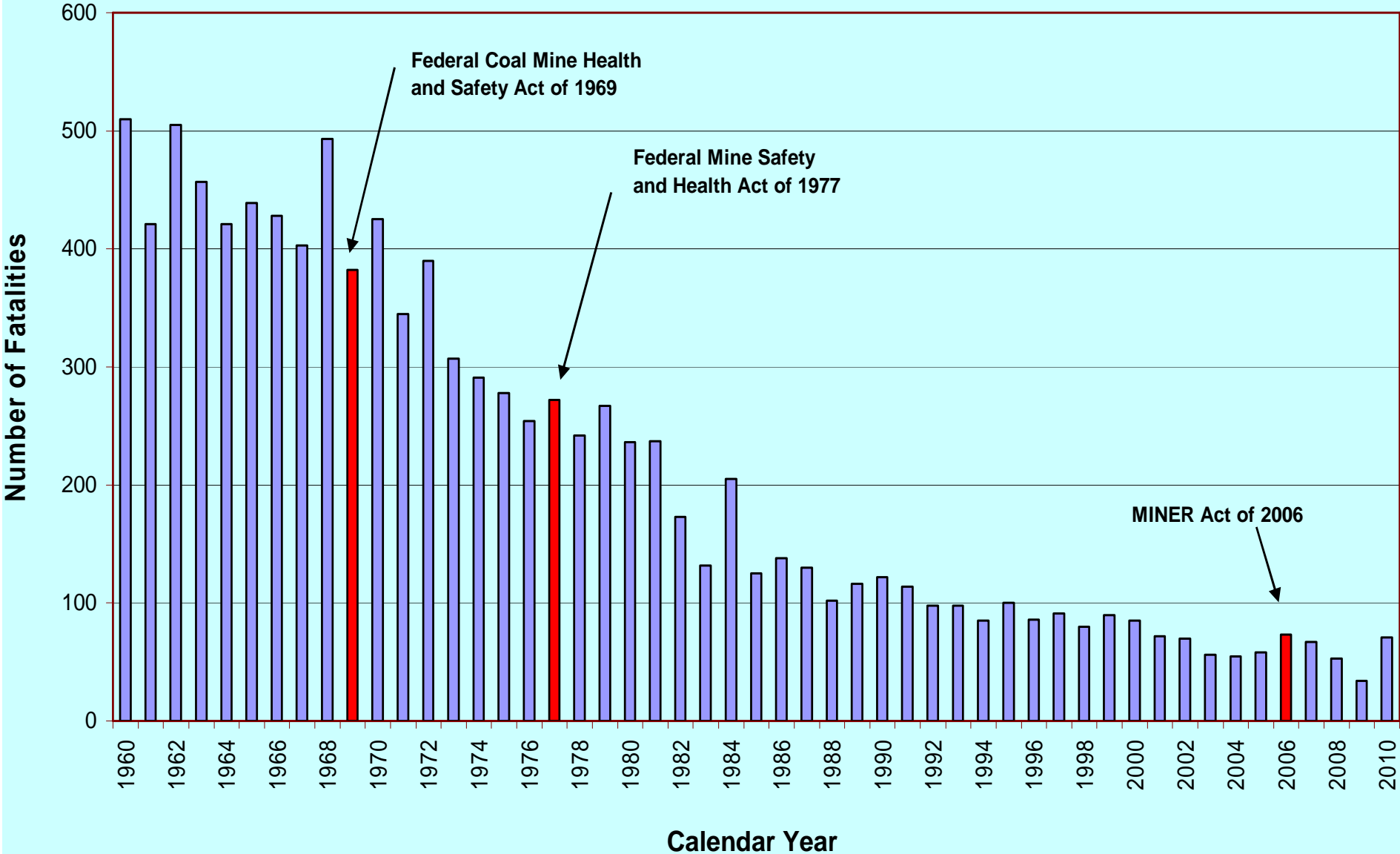
# Mining Fatalities in the United States, 1910 - 2010



■ Coal      ■ Metal and Nonmetal      — Total



# All Mining Fatalities 1960 - 2010





# *Applicable Mining Laws*

- Federal Mine Safety and Health Act of 1977 (the Act)
  - Formed the Mine Safety and Health Administration (MSHA)
  - Purpose:
    - Establish mandatory health and safety standards to protect the Nation's miners
    - Require each mine operator to comply with standards
    - Improve and expand research and development and training programs aimed at preventing accidents and illnesses.
  
- Mine Improvement and New Emergency Response Act of 2006 (MINER Act)
  - Required changes in mine emergency response capabilities including communications, tracking, and breathable air.





# ***Title 30 Code of Federal Regulations (30 CFR)***

- Parts 75 and 77 Safety and Health Standards for underground and surface coal mines
- Parts 56 and 57 Safety and Health Standards for underground and surface metal and nonmetal (non-coal) mines
- Parts 5-36 for equipment approval regulations



# ***MSHA Product Approval Regulations***

- **Part 5 – Fees**
- ***Part 6 – Testing by Independent Laboratories and Non-MSHA Product Safety Standards***
- ***Part 7 – Testing by Applicant or Third Party***
- **Part 18 – Electric Motor Driven Mining Equipment**



# ***MSHA Product Approval Regulations***

- Part 19 – Electric Cap Lamps
- Part 20 – Electric Mine Lamps other than Cap Lamps
- Part 22 – Portable Methane Detectors
- Part 23 – Telephones and Signaling Devices



# ***MSHA Product Approval Regulations***

- Part 27 – Machine-mounted Methane Monitors
- Part 28 – Fuses for Use with Direct Current in Providing Short-Circuit Protection for Trailing Cables
- Part 33 - Dust Collectors
- Part 35 – Fire Resistant Hydraulic Fluids
- Part 36 – Mobile Diesel Powered Transportation Equipment



# ***Testing by Applicant or Third Party (30 CFR Part 7)***

- Only available for certain products for which test results are non-subjective.
- Applicant submits certified statements that product has met test requirements
- Products under Part 7 include:
  - Explosion-proof motors
  - Flame resistant cables
  - Mine Ventilation Controls (Brattice cloth and ventilation tubing)
  - Battery Assemblies
  - Diesel Engines and Diesel Power Packages
  - Refuge Alternatives



# ***Testing by Applicant or Third Party (30 CFR Part 7)***

- **MSHA Investigation Consists of:**

- **Verification of:**

- Construction requirements
- Quality assurance requirements
- Demonstrated test facility competency

- **Review of:**

- Certified statements
- Test results



## ***30 CFR Part 6***

- Testing and Evaluation by Independent Laboratories and non-MSHA product safety standards
- Promulgated in 2003
- Permits MSHA to:
  - Accept test and evaluation results from independent laboratories if they verify compliance with MSHA requirements
  - Accept equipment designed to non-MSHA product safety standards if MSHA deems such standards to provide at least the same degree of protection as MSHA requirements or determines that such standards can be modified to provide the same degree of protection



# **30 CFR Part 6**

## ***Equivalency Determination Process***

- MSHA announces intent to review non-MSHA product safety standard in the Federal Register for purpose of soliciting public input
- 60 day comment period
- MSHA conducts equivalency determination and publishes final determination with any necessary modifications in the Federal Register
- The accepted standard is incorporated into 30 CFR with any necessary modifications





## ***MSHA Part 6 Activities***

- Completed evaluation of IEC 60079-0 and -1 and determined modification (deviation) is required to ensure equivalent protection to MSHA approval requirements
- Evaluation of IEC 60079-0 and -11 has been found to be difficult and is on-going
- Participation on IEC TC31 main committee and subcommittees
- MSHA has approved several products based on independent laboratory test reports



## ***Obstacles to MSHA Acceptance of IECEx***

- **1977 Mine Act** requirement: *“No mandatory health or safety standard promulgated under this title shall reduce the protection afforded miners by an existing mandatory health or safety standard.”*
- MSHA must be able to show that any new standard provides at least the same degree of protection as existing requirements
- Difficulty of comparing IEC standards with MSHA requirements
- It's not “are they safe enough” but rather “are they equally safe”



## ***Obstacles to MSHA Acceptance of IECEx***

- Must go through the US rulemaking process before changes to MSHA regulations can be made.
- United Mine Workers of America (UMWA) have opposed efforts to harmonize MSHA requirements with the international community.
- MSHA resources and priorities.