Scientific and Evidence Based Rulemaking

Industry Perspective

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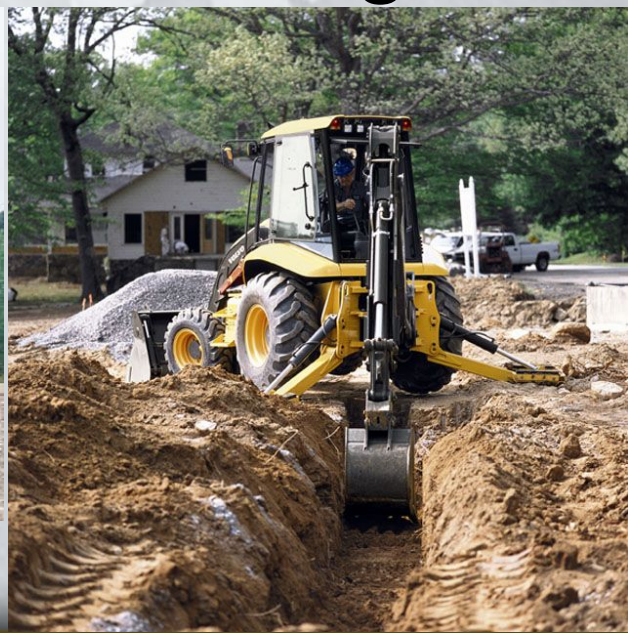
Outline of Presentation

- Introduction to the Construction and Mining Machine Industry
- Rulemaking Based on ISO Standards
- ISO/TC 127 for Earth Moving Machines
- ISO/TC 82 for Mining
- Process for Supporting Rulemaking



Construction and Mining Machines

- Global Industry, Low Volume Machines
- High Technology, Versatile Machines
- National Standards Replaced by ISO
- Safety Goal - Zero Injury or Harm
- Voluntary Compliance to Standards
- Minimal National or Regional Regulations

Rulemaking Based on ISO Standards

- **USA OSHA for Construction Machines**
  - **Requirements for operator protection and seat belts using old SAE standards**
  - **General Duty Clause – "All employees shall be provided a safe place to work."**
  - **Standards accepted to define "safe place to work"**
- **USA MSHA for Mining Machines**
  - **References more standards**
  - **Allows the use of current standards**
- **Europe and other Areas Use Standards for the Technical Requirements for Regulations**
- **Thus, Scientific and Evidence Based Rulemaking Is Dependent Upon Standards Development**

ISO/TC 127 Earth Moving Machines

Machines Used in Construction and Mining for Excavating, Loading, Transporting, Spreading and Compacting Earth, Rock and Other Materials.

ISO/TC 82 Mining

Scope

- Specialised mining machines used in opencast mines
- All underground mining machines and equipment,
- Plans and drawings used in mine surveying;
- Methods of calculation of mineral reserves;
- Mine reclamation management;
- Design of structures for mining industry.

ISO for Construction and Mining Machines

- ISO/TC 82 for Mining Reactivated in 2012
- ISO/TC 127 for Earth Moving Machines Was Formed in 1968 to Develop Global Standards
- Objectives for ISO Standards
  - Provide Performance Criteria to Achieve a High Level of Safety for Machines
  - Meet the Safety Expectations of Machine Users and Health and Safety Experts
  - Prepare ISO Standards to Address All Safety Risks
  - Provide Global Requirements for Machine Manufacturers
  - Develop ISO Standards That Could Be Used As the Basis for Any National Standards and Regulations

ISO Process Participants

- Experts from Multiple Countries
- National Representatives:
  - Machine Users
  - Health and Safety Experts
  - Regulatory Experts
  - Manufacturers
  - National Standards Body Staff
  - Trade Association Staff
  - Testing Agencies

Standards Development Process

- **Verify a Need for Standards**
  - **Address Additional Safety Risks**
  - **Cover New Types of Machines and Applications**
  - **Address Advances in Technology**
- **Base the Technical Requirements on**
  - **Machine Incident and Use Data**
  - **Risk Reduction Principles**
  - **Ergonomics of Operators and Workers**
  - **Data, Logic and Processes**
  - **Reasonable and Achievable Requirements**
- **Create Performance Criteria for Standards to:**
  - **Meet Machine Users Expectations for Safety**
  - **Be Acceptable to Health and Safety Organization**
  - **Enable Using the Standards as the Technical Requirements to Address Safety Risks in Regulations**

Scientific Based Standards for Regulations

- ISO Standards Are Developed to Be Used As the Basis for National Standards
  - A High Level of Reasonable and Realistic Safety Requirements
  - Developed by Global Experts
  - Developed to Meet the Expectations of Machine Users and Health and Safety Organizations
  - Save Time and Resources by Using ISO Standards
- ISO Standards Are Developed to be Scientific and Evidence Based
- ISO Standards Can Be Used as the Technical Requirements for National Regulations to Promote Global Harmonization