Mission

To provide miners with a safe work environment, by ensuring equipment is safely designed for its intended use and to implement new technologies to address existing and emerging concerns.
Electrical Safety Division

- Electrical Equipment Group
- Intrinsic Safety Group

- Electrical Engineers (15)
- Electrical Engineering Technicians (7)
- Office Automation Assistant
Division Responsibilities

- Product Approvals
- Technical Assistance
- Technical Projects
- Accident Investigations
- Litigation Support
- Regulatory Support
- Research Assistance
- Training
What does Part 6 Impact?

- Approval types
- Possible independent lab tests
- Approval processing fees / time
- Approval numbering
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Product Evaluation

• Intrinsically safe circuits shall be incapable of releasing enough electrical or thermal energy to cause an ignition in a methane and air mixture.

• The surface temperature of enclosures and components of intrinsically safe circuits that could be exposed to coal dust shall not cause thermal ignition of a coal dust layer.
Product Evaluation

• All circuits are evaluated under the following conditions:
  ➢ One independent fault
  ➢ Normal operation
  ➢ Two independent faults

• A Safety Factor on Energy is also applied
Product Evaluation

- Apply worst case circuit parameters as a normal connection scenario, such as
  - Opening
  - Shorting
  - Reverse polarity
  - Worst case tolerances
  - Worst case adjustments

September 9, 2004
Independent Lab Tests

- Methane Detector & Monitor Tests
- Temperature & Thermal Tests
- Protective Component Tests
- Spark Ignition Tests
- Explosion Tests
- Vibration Tests
- Impact Tests
- Drop Tests

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Processing Fees

• MSHA approval fees could decrease, if…
  – Results of Testing and Evaluation performed by an Independent Laboratory are accepted by MSHA

• MSHA approval fees could increase, if…
  – Insufficient evaluation resulting in repeat or additional testing
  – Incorrect testing, repeat test(s) necessary
• MSHA approval time could decrease, if…
  – Results of Testing and Evaluation performed by an Independent Laboratory are accepted by MSHA

• MSHA approval time could increase, if…
  – Insufficient evaluation resulting in repeat or additional testing
  – Incorrect testing, repeat test (s) necessary

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Part 6 Applies to

- New Approval applications
- Extension of Approval applications
- Revised Approval Modification Program (RAMP) applications
• If an independent laboratory performs one, some, or all of the evaluation or testing, the approval number will still have the MSHA approval number.

• The final rule does not require that manufacturers use the mark of the independent laboratory that tested and evaluated the product or its components. However, nothing in this final rule prohibits a manufacturer from using the mark of an independent laboratory if it chooses to do so, as long as it carries the MSHA mark as well.
How It All Works

Electrical Equipment Product Approval

MSHA Evaluation
MSHA Testing
Ind. Lab Testing
Ind. Lab Evaluation

September 9, 2004
Take Advantage of Testing Consultations with the Approval & Certification Center Engineers and Technicians

Contact the Approval & Certification Center

304-547-0400

September 9, 2004
Questions?

September 9, 2004