Opening Remarks

David G. Zatezalo
Assistant Secretary for Mine Safety & Health
Agenda

1:00 – Welcome and Introduction
1:10 – Review of Contractor Fatalities
1:30 – Review of Electrical Fatalities
1:35 – Enforcement
1:45 – Educational Policy and Development
1:50 – Regulatory Update
1:55 – Questions
2:00 – Closing Remarks
Review of Contractor Fatalities

- 2019 has seen the highest % of Fatalities by Contractors “ever” (50%)
- Powered Haulage and Machinery account for 10 of the 18 Contractor Fatalities since January 2017
- Fatality elimination/reduction must include “ALL” miners
- Stakeholder “Focus” yields results
Contractor Fatalities

Spatial Distribution of Contractor Mining Fatalities
2017 — 2019

Last Updated: December 5, 2019
# MSHA Districts

## 2019 Fatalities by District

<table>
<thead>
<tr>
<th>Coal District Fatalities</th>
<th># Contractor</th>
<th>M/NM District Fatalities</th>
<th># Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>C02</td>
<td>2</td>
<td>NE</td>
<td>1</td>
</tr>
<tr>
<td>C03</td>
<td>0</td>
<td>SE</td>
<td>3</td>
</tr>
<tr>
<td>C04</td>
<td>3</td>
<td>NC</td>
<td>1</td>
</tr>
<tr>
<td>C05</td>
<td>0</td>
<td>SC</td>
<td>6</td>
</tr>
<tr>
<td>C07</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>C08</td>
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<td>RM</td>
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</tr>
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<td>CO9</td>
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<td>Western</td>
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</tr>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>CO12</td>
<td>0</td>
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<td></td>
</tr>
</tbody>
</table>

| Total Coal               | 10           | Total M/NM               | 12           |
| 3 or 30% Contractors     |              | 8 or 67% Contractors     |

| Total Fatalities         |              | # Contractor             |
| 22                       | 11 or 50%    |
Fatal Contractor Injuries

Contractor vs Non-Contractor Fatalities

<table>
<thead>
<tr>
<th>Year</th>
<th>Contractors</th>
<th>Non-Contractor</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>3</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>2018</td>
<td>4</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>So Far 2019</td>
<td>11</td>
<td>11</td>
<td>22</td>
</tr>
</tbody>
</table>
Contractors Total Experience
2017-2019

<table>
<thead>
<tr>
<th>Experience</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>(4)</td>
</tr>
<tr>
<td>1-5 years</td>
<td>(4)</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>(10)</td>
</tr>
</tbody>
</table>
Contractors Experience at Activity
2017-2019

<table>
<thead>
<tr>
<th>Experience</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>7</td>
</tr>
<tr>
<td>1-5 years</td>
<td>4</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>7</td>
</tr>
</tbody>
</table>
Contractors Experience with Contractor
2017-2019

- <1 year: 8 fatalities
- 1-5 years: 3 fatalities
- >5 years: 7 fatalities
Contractors Mine Experience
2017-2019

<table>
<thead>
<tr>
<th>Experience</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 year</td>
<td>13</td>
</tr>
<tr>
<td>1-5 years</td>
<td>2</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>3</td>
</tr>
</tbody>
</table>
Root Causes

• Inadequate or no examinations
• Inadequate or no training
• Safe job procedures not developed or not followed when developed
• Inadequate communications between workers
• Restricted visibility while operating mobile equipment
On Saturday, January 5, 2019, a 55-year-old contract miner received fatal injuries when he was pinned between a pneumatically powered air lock equipment door and the concrete rib barrier located near the shaft bottom.
MSHA Fatal
Coal Mine

On January 14, 2019, a 56-year-old survey crew member with approximately 30 years of mining experience was fatally injured after he was struck by a loaded shuttle car. The victim was measuring the mining height in an entry that was part of the travelway used by the shuttle car to access the section feeder.
MSHA Fatal

MNM

On March 6, 2019 a contract miner, suffered fatal injured when he was struck by a relief valve that ejected from a 500 ton hydraulic cylinder. The contract miners were in the process of cribbing the P&H 4100A Electric Shovel to perform an undercarriage rebuild.
On March 7, 2019, a contract miner suffered fatal injuries when he fell approximately 12’ from on top of the North Log Washer and struck the structure below. The contract miner was attempting to tighten a mounting bolt on the drive motor when the wrench he was using slipped, causing him to fall backwards and into an opening between two log washers.
On June 10, 2019, a miner was leveling material in a trench made for laying electrical conduit for new plant construction while the Plant Manager was operating a Wacker Neuson WL 36 frontend loader above. The front-end loader was being used to back fill the trench when the bank collapsed causing the front-end loader to slide into the trench. The victim was fatally injured when he was pinned between the front-end loader and a jersey block.
On June 24, 2019, a 34-year-old contractor with 10 years of experience, received fatal injuries when he fell beneath the wheels of a tractor-trailer. Miners were using a bulldozer to pull the tractor-trailer, which had become stuck in the sand. As the tractor-trailer began to be pulled, the victim was seen walking toward the side of the truck. The victim died at the scene from crushing injuries after being run over by the truck wheels.
On July 31, 2019, a 62-year-old contractor with 30 years of mining experience sustained fatal injuries when three methane ignitions occurred in an air shaft. The victim and three contractors were preparing to seal the intake air shaft of an underground mine. At the time of the ignitions, the victim was trimming metal so that it would fit inside wooden forms and was in direct line of the ignition forces.
On Friday, August 2, 2019, a 39-year old contract equipment operator, with 16 years of experience, was killed while descending the main haul road in a fuel/lube truck. The victim radioed that the truck’s brakes did not work and after traveling approximately one mile down a 7% grade, struck a runaway truck ramp’s berm causing it to overturn. The victim was not wearing a seatbelt.
MSHA Fatal

MNM

On Friday August 15, 2019, a 44-year-old contract electrician with 10 weeks of mining experience was electrocuted when he contacted a 120V cable while working inside a fire suppression system's electrical panel.
While spotting for a dump truck, a contractor stepped directly into the path of a bulldozer and died at the scene on November 16, 2019.
A contract maintenance mechanic struck an elevator platform from atop an exterior industrial elevator car. The victim was performing maintenance when the car went into service resulting in the victim receiving crushing injuries as the car descended. The miner died at the scene on December 3, 2019.
Electrical Fatalities and Accidents
On August 7, 2019, a 42-year-old preparation plant electrician with 15 years of mining experience was electrocuted when he contacted an energized connection of a 4,160 VAC electrical circuit. The victim was in the plant’s Motor Control Center (MCC) adjusting the linkage between the disconnect lever and the internal components of the 4,160 VAC panel supplying power to the plant feed belt motors.
MSHA Fatal

MNM

On Friday August 15, 2019, a 44-year-old contract electrician with 10 weeks of mining experience was electrocuted when he contacted a 120V cable while working inside a fire suppression system's electrical panel.
MSHA Fatal Coal Mine

On September 17, 2019, an electrician was electrocuted when he contacted an energized conductor. The victim contacted a 995 VAC connector while attempting to troubleshoot the scrubber motor circuit on a continuous mining machine.
Electrical Shock Accident

On September 18, 2019, an electrician was shocked when he contacted 4,160 VAC on a shovel. Earlier in the shift, the circuit was locked and tagged out and an electrical problem was fixed. Another issue arose later in the shift. The electrician opened an electrical box and pushed himself upwards to see inside it and his head contacted the energized collection bar. The electrical energy turned him around, held him, and he shook until the circuit deenergized at the main substation 1/4 mile away.

“This incident could have been a Fatality”
Electrical Shock Accident

On December 8, 2019, an electrician received an electrical shock while troubleshooting lid switches on a 4 MVA 12,470 volt power center. The electrician received two burns, one the size of a 50 cent piece on his right elbow, and one the size of a pencil eraser on his right wrist.

“This incident could have been another Fatality”
Electrical Accidents Statistics

• Increase in electrical fatalities (electrocutions) in past 5 years
• 13 Fatal electrocutions in ten years (2010 to 2019*)
• Over 300 electrical shock accidents in ten years (2010 to 2019*) that resulted in lost workdays and/or restricted duty

Primary Causes
• Lock out/Tag out – Without electricity one can’t be electrocuted!!!!!
• Failure to utilize PPE
• Troubleshooting and Testing vs. Electrical Work
• Safe Work Practices

*partial
Other Fatalities in 2019

6 Surface – 3 Underground
Classifications

  3 Machinery
  2 Powered Haulage
  2 Fall of Face, Rib, Pillar or Highwall
  2 Fall of Person
Root Causes

• Inadequate or no examinations
• Inadequate or no training
• Safe job procedures not developed or not followed when developed
• Inadequate communications between workers
• Restricted visibility while operating mobile equipment

BEST PRACTICES

“Best practice for prevention of recurrence is listed with the fatality alert for each accident on webpage”
Enforcement Initiatives

• **Electrical Initiative**
  • Started on September 23, 2019
  • Visited approximately 4,900 mines

• **Contractor Initiative**
  • Will begin in January
  • Contractor Safety Alert
    • Posted on MSHA website
    • Distributed during mine visits
  • Mine Visits
    • Discuss fatalities with miners and contractors
    • Training (≤1 year of experience at the mine and/or activity)
      • Observe contractor work practices
      • Talk to individual contractors about training received
      • Review training plans and training records
  • Letter to Stakeholders
Educational Policy and Development Update

Training Resource Links for Contractors and Mine operators
Training Resource Links

MSHA.gov

Training and Education
➤ https://www.msha.gov/training-education

Training Programs and Courses
➤ https://www.msha.gov/training-education/training-programs-courses

Safety and Health Materials
➤ https://www.msha.gov/training-education/safety-health-materials

Developing a Training Plan
➤ https://www.msha.gov/training-education/developing-training-plan

Mine Rescue Training
➤ https://www.msha.gov/training-education/mine-rescue-training

Instructor Materials
➤ https://www.msha.gov/training-education/instructor-materials

Quarterly Training Calls
➤ https://www.msha.gov/training-education/quarterly-training-calls

Mine Academy Programs
➤ https://www.msha.gov/PROGRAMS/MineAcademy/Academy.asp
Training & Education

Training is an essential part of MSHA's mission to keep miners safe and healthy. Our goal is to help the mining industry develop high-quality training programs, and to strengthen and modernize training through collaboration with industry stakeholders.

Federal law requires that all miners receive basic and annual refresher training, and that all mine operators maintain an effective training plan. MSHA provides materials, guidance, and hands-on assistance to help miners and operators meet their training obligations and more. In the Training & Education section of our website, we have gathered many of our materials for your convenience, and will add to them over time.

Questions? Comments? Materials to share? Please contact us at mshatraining@dol.gov for assistance or to suggest improvements.

Training Programs and Courses
Find out about MSHA's wide variety of mine safety and health training programs and courses, offered both in-person and online.

Safety & Health Materials
Browse MSHA's collection of mine safety and health materials, which can be used to assist trainers and mine operators in promoting a safe and healthy environment at U.S. mines.

Developing a Training Plan
Access resources to assist in the development of training plans for Part 46 and Part 48 mines.

Mine Rescue Training
Learn about mine rescue training requirements and mine rescue contests. Access instructional materials, view the Mine Rescue Hall of Fame, and find out more about the history of mine rescue in the U.S.

Quarterly Training Calls
Access the materials used in MSHA's quarterly training conference calls as well as audio recordings of the calls (when available).
Training Programs & Courses

MSHA offers a wide variety of mine safety and health training programs and courses both in-person and online.

Inspection courses are held regularly at the National Mine Health and Safety Academy in Beaver, West Virginia, and can also be scheduled at your worksite upon request. Our online courses can be integrated into your own training programs. Please feel free to get in touch at msha-training@dol.gov with any questions or comments about our training programs and courses.

National Mine Health and Safety Academy Courses

View the catalog of courses offered by the National Mine Health and Safety Academy in Beaver, West Virginia. Most courses are held at the Academy, and many can be scheduled at your worksite upon request.

Part 50 Training Program

This program is designed to clarify reporting requirements for accidents, injuries, and illnesses in the mining industry. This program will enhance MSHA’s ability to evaluate and develop mine safety and health standards and programs which benefit the industry.

State Grant Programs

MSHA’s State Grants Program distributes federal grants to 49 states and the Navajo Nation. Grants are made to the state agency program responsible for miners’ health and safety. Most grant funds are used to support health and safety training courses and programs designed to reduce mining accidents, injuries, and illnesses.

- Administrative Standards and Provisions
- Form 5000-50, MSHA State Grant Technical Progress Report Form
- Form 5000-50, MSHA State Grant Technical Progress Report Form (Microsoft Excel Version)
- Grants Management System Modernization

Brookwood-Sago Mine Safety Grants

The MINER Act established the Brookwood-Sago Mine Safety Grants Program. This program uses grant funds to establish and implement education and training programs or to create training materials and programs. Funds are used to develop and implement training and related materials for mine emergency preparedness as well as for the prevention of accidents in underground mines.

- Administrative Standards and Provisions

Miners’ Rights and Responsibilities

An online training program to learn specific information about the rights and responsibilities of miners.

Miners’ Representatives Guide

A supplement to the Miners’ Rights and Responsibilities program designed to further understand the roles, rights, and responsibilities of miners’ representatives.
Safety & Health Materials

MSHA offers a wide variety of training and health materials to assist trainers and
mine operators in promoting a safe and healthy environment at U.S. mines. We are
always looking for new materials to share with the mining community. Please contact us
at msha.training@dol.gov if you have any materials to share, or if you have any questions
or suggestions regarding the safety and health materials on our website.

Small Mine Handbook
A compliance assistance tool for small mine operators covering health and safety
programs, training plan development, reporting procedures, and more.

Searchable Database
Find safety and health manuals, hazard alerts, presentations and compliance guides
organized by mine type and hazard.

Training Videos
A collection of videos covering health, safety and other mining-related topics.

ToolBox Talks
A series of discussion topics that can be used by small mine operators and others to
hold safety and health discussions for their employees at their mining operations.

Fatality Alerts
Mining fatality summaries with associated best practices to help prevent similar
incidents.

Task Training
Concise guidelines for effective task training.

Health and Safety Alerts
Information on current and previous health, safety and equipment hazard alerts.

MSHA Handbook Series
A variety of handbooks describing inspection procedures, education & training
procedures and technical support procedures.

NIOSH Training Page
Education and training resources from the National Institute for Occupational Safety
and Health.

Industry Shared Safety Material
This section contains material submitted to MSHA by the mining industry that has
shown to be effective in reducing accidents and injuries. Please feel free to use any
of this material to help prevent accidents and injuries at your mine or facility site.

Industry and MSHA Partnership Safety Material
This section contains material produced as a result of a partnership between MSHA
and the mining industry. These partnerships are part of MSHA’s ongoing outreach.
Developing a Training Plan

The following resources may be useful in developing training plans for Part 46 and Part 48 mines. If this is your first time creating a training plan, we highly recommend getting in touch with Educational Field and Small Mine Services for assistance. You can also review the current regulations set forth in 30 CFR Part 46 and Part 48. The official regulations outline the required components of an approved training plan, the types of training programs that must be included in a plan, and appropriate record-keeping procedures.

Training Plan Advisor & Online Plan Submission
Provides guidance in developing federally required training plans for Part 46 and Part 48 mines, and allows plans to be submitted online.

*The use of the eTPA is voluntary and meant to assist operators with the development of their training plans.

Contact information for additional assistance

MSHA’s Helpdesk: 1-877-978-6055

Educational Field and Small Mine Services

New E-Gov User Registration

MSHA Program Policy Manual
Provides assistance in interpreting and clarifying the various training requirements outlined in 30 CFR Part 46 and Part 48.

Part 46 Training Plan Starter Kit
Asa En Español
Provides help in developing an effective, mine-specific training program that meets the provisions of Part 46. This starter kit includes a sample training plan.

Part 46 Training Plan Guide
Outlines the minimum requirements for a Part 46 training plan and answers some of the most common questions regarding Part 46 training plan components.
Mine Rescue Training

When danger strikes, a speedy and safe rescue effort can mean the difference between life and death for trapped miners. Adequate training is essential, as rescuers must be available and ready to respond on a moment’s notice.

The Mine Act requires that every operator of an underground mine assure the availability of mine rescue teams for purposes of emergency rescue and recovery of trapped or injured miners. Rescue teams must receive adequate training in accordance with 30 CFR Part 45.8 for underground metal and nonmetal mines, and 30 CFR Part 45.18 for underground coal mines. Mine rescue contests and simulations are an essential part of the training process, and ensure that teams receive hands-on exposure to a range of potential hazards and mine emergency scenarios.

Mine Rescue Contests
Mine rescue contests are designed to sharpen skills and test the knowledge of team members who would be called on to respond to a mine emergency. The contest requires team members to solve a hypothetical problem while being timed and observed by judges according to complex rules.

Mine Rescue Instruction Guides
MSHA’s Mine Rescue Instruction Guides help mines meet mine rescue team training requirements under 30 CFR Part 45. Instructors and trainers can use the guides to either supplement existing mine rescue training or tailor a program to fit their mine-specific training needs.

Mine Rescue Day
October 30th is Mine Rescue Day – a time to recognize the dedication and sacrifice of volunteers who risk their own lives to save other miners.
Instructor Materials

Instructor materials and reference guides for MSHA approved instructors and competent persons:

- OTS4 – Part 46 reference guide, questions and answers, sample training records
- OTS5 – Part 48 reference guide, questions and answers, sample training records
- OTS6 – Part 46 and Part 48 Reference Guide
- IG 24a – Part 48 training requirements for MSHA approved instructors
- IG 24b – Part 46 training requirements for competent persons

Training & Education

Training Programs and Courses
Safety and Health Materials
Developing a Training Plan
Mine Rescue Training

Instructor Materials

Quarterly Training Calls and Stakeholder Meetings
Quarterly Training Calls and Stakeholder Meetings

Access the materials used in MSHA’s quarterly training conference calls or stakeholder meetings as well as audio recordings of the events.

May 2, 2019

1st Quarter 2019 Conference Call

- Slide Show with information covering quarterly fatalities, training grants and more

Listen to a recording of the call on May 2, 2019:

[Audio Player]

January 24, 2019

4th Quarter 2018 Conference Call

- Slide Show with information covering quarterly fatalities and large mobile equipment outreach

Listen to a recording of the call on January 24, 2019:

[Audio Player]

October 10, 2018

3rd Quarter 2018 Conference Call Materials

- Slide Show with information covering quarterly fatalities, vehicle fire safety & conveyor safety outreach

Listen to a recording of the call on October 10, 2018:

[Audio Player]

August 10, 2018

2nd Quarter 2018 Conference Call Materials

- Slide Show with information on conveyor belt safety and fatality review
- More Information about the upcoming 3rd Quarter Conference Call

Listen to a recording of the call on August 10, 2018:

[Audio Player]
Academy Overview

National Mine Health and Safety Academy

1301 Airport Road
Beaver, West Virginia 25813-9426

The National Mine Health and Safety Academy is one of eight Federal academies operated by the U.S. Government. [more]

Quick Links

- MSHA Library, Collections and Services
- Courses for MSHA and the Mining Industry
- Student Handbook
- Search Library Catalog
- Catalog of Training Products for the Mining Industry
- Route Map to the Academy

General Information

Overview
The National Mine Health and Safety Academy is one of eight Federal academies operated by the U.S. Government. [more]

Purpose
The Academy designs, develops and conducts instructional programs to assist in government, industry, and labor efforts to reduce accidents and health hazards in the mineral industries.

Objective
Progress has been made in recent years in the improvement of the health and safety conditions in U.S. mines. However, further improvements must be made for mining to recover from the rash of high-risk industries. These improvements can only come about through the establishment of effective accident prevention and industrial hygiene programs. [more]

Organization
The Academy is supported by the Superintendent’s Office with the aid of five major organizational units--the Department of Instructional Services, Department of Instructional Materials, Facilities Support Services, Department of Mining Technology, and the Technical Information Center and Library. [more]

Academy History
In a five-year period from 1905-1911, 13,228 miners were killed in U.S. coal mines. As a result, the Bureau of Mines was established by Congress on July 1, 1910, “to make diligent investigation of the methods of mining, especially in relation to the safety of miners and the appliances best adapted to prevent accidents.” [more]

Physical Facilities
The Academy complex includes classrooms and laboratories accommodating 600 students, a residence hall of 174 lodging rooms, a cafeteria, library, auditorium, and wellness facilities. [more]

Reservation Policy
The Academy will hold a block of reserved dormitory rooms for an event, for up to fourteen (14) calendar days prior to the beginning date of the event. To confirm blocked dormitory rooms, the names of the persons attending the event must be provided to the Academy at least fourteen calendar days of the event can be released. [more]

Mine Simulation Laboratory
The Mine Simulation Laboratory is an above-ground simulated mine that provides hands-on training for MSHA inspectors and mining industry personnel. The 40,000 square foot facility has a simulated coal mine with an indoor burn room on the lower level and a simulated metal/nonmetal mine on the second floor level. The coal mine represents a room-and-pillar setup with four (4) entries and nine (9) crosstabs. [more]
Mine Safety and Health Administration

EDUCATIONAL FIELD AND SMALL MINE SERVICES

Educational Field and Small Mine Services (EFSMS) provides assistance in the development and improvement of the health and safety programs of mine operators and contractors in the mining community. The EFSMS specializes in training programs tailored to reduce the number of injuries and illnesses in the mining industry. Additionally, EFSMS evaluates industry instructors to assure miners receive quality and effective training.

EFSMS staff are located in 35 states and travel to mines and training centers to provide assistance that will strengthen and modernize training.

Services We Provide

- Providing regulatory assistance
- Conducting training program analysis
- Approving Part 46 training plans
- Providing concentrated assistance to mines with greater need
- Providing training to miners, managers, and other stakeholders
- Evaluating and assisting industry instructors to develop and improve their skills
- Participating in accident investigations and providing expertise on safety and training issues surrounding the accident to determine root causes
- Forming partnerships with associations and other entities to increase focus on safety and health issues in the industry
- Assisting with the development and growth of the Joseph A. Holmes Safety Association
- Providing information at public forums such as health and safety conferences and outreach programs

Weekly ToolBox Talks

A series of weekly ToolBox talks that can be used by small mine operators and others to hold safety and health discussions for their employees at their mining operations. EFSMS hopes these ToolBox talks will help small mine operators and their miners to keep safety and health at the forefront of their daily and weekly activities.

Non-Retaliation Policy

MSHA has a policy that communications with the agency about safety and health regulations or other safety and health related subjects shall not trigger enforcement action. This policy reflects the fact that the agency’s objective is to provide assistance to help operators prevent and reduce workplace fatalities, illnesses and injuries.

MSHA Training Center

MSHA has just announced the allocation of over $8 million in federal health and safety training grants. MSHA will be developing a training resource on this site for Part 46 A. Part 48 trainers. Click here to view more information and join the conversation about the best ways to deliver training that keeps miners safe and healthy.
Educational Field and Small Mine Services
EFSMS

https://www.msha.gov/epd/efsms/
mshatraining@dol.gov

Kevin Deel
Deel.kevin@dol.gov
202-693-9585

Syed Hafeez
Hafeez.syed@dol.gov
202-693-9765
Regulatory Update

• Examinations of Working Places in Metal and Nonmetal Mines, Final Rule

• Escapeways and Refuges in Underground Metal and Nonmetal Mines, Program Policy Letter

• Respirable Quartz, Request for Information
Questions?