30 CFR Part 46 Instructors Guide with Lesson Plans

U.S. Department of Labor
Mine Safety and Health Administration
National Mine Health and Safety Academy

Instruction Guide Series
IG 37

Revised 2016

Department of Labor
Mine Safety and Health Administration

Visit the Mine Safety and Health Administration
Web site at www.msha.gov

INTRODUCTION

This guide is designed to assist mine operators and independent contractors in developing effective and mine specific training programs. The target audiences for this guide are the instructors who will be giving Part 46 training, and those persons designated by the operator as responsible for Part 46 training at the mine.

Use of this guide is strictly voluntary and supplemental to your Part 46 training plan. You are encouraged to improve the ideas presented or design your own. Most subjects can best be taught on-site. **The lesson plans included in this publication are not necessarily complete, but instead represent a common lesson plan format and sample content that could be used**.

While teaching you should always have your MSHA approved training plan with you in front of the class, but in addition to that it is helpful to have an outline including objectives of what and how you plan to teach each lesson. This guide is intended to assist you in developing those lesson plans.

Regulation and Policy

Part 46 regulations focus on the training and retraining of miners engaged in shell dredging or employed at sand and gravel, surface stone, surface clay, colloidal phosphate, surface limestone, marble, shale, kaolin, feldspar, granite, traprock, cement, lime, sandstone, and slate mines and operations.

As an instructor you are expected to be familiar with the basic requirements of Part 46. The following guidelines will help you gain a better understanding of the regulations.

Training anniversary dates are tracked monthly. For example, if a miner completed annual refresher training sometime in March, the next annual refresher training must be completed by the end of the following March.

Training Plan Requirements (30 CFR § 46.3)

You must provide the miners' representative with a copy of the plan at least 2 weeks before the plan is implemented or if requesting plan approval, 2 weeks before it is submitted to MSHA. At mines where no miners' representative has been designated, you must post a copy of the plan at the mine or provide a copy to each miner at least 2 weeks before you implement the plan or submit it to the Regional Manager for approval.

Production operators and independent contractors regulated by Part 46 must develop and implement a written Part 46 training plan that contains effective programs for:

1. New Miner Training
2. Newly-Hired Experienced Miner Training
3. New Task Training
4. Annual Refresher Training
5. Site-Specific Hazard Awareness Training

The following information must be included in the training plan:

1. The name of the production-operator or independent contractor, mine name(s), and MSHA mine identification number(s) or independent contractor identification number(s);
2. The name and position of the person designated as responsible for the health and safety training at the mine;
3. A general description of the teaching methods and the course materials that are to be used in the training program, including the subject areas to be covered and the approximate time or range of time to be spent on each subject area;

4. A list of the persons and/or organizations who will provide the training, and the subject areas in which each person and/or organization is competent to instruct; and
5. The evaluation procedures used to determine the effectiveness of training.

If the employee meets the definition of a miner, you must provide the employee with comprehensive training. Comprehensive training includes not only the initial training (either New Miner or Experienced Miner Training – as applicable) and task training on all tasks assigned, but also for as long as they are employed, you will provide the miner with annual refresher training every 12 months.

New Miner Training (30 CFR § 46.5)

This training is given to the newly employed inexperienced miner (someone new to the mining industry or possibly someone who hasn't achieved experienced miner status within 36 months of taking the new miner training course).

Each new miner must be provided with no less than 24 hours of training. This training must be completed no later than 90 calendar days after the miner begins work. Miners who have not yet received the full 24 hours of new miner training must work where an experienced miner can observe that the new miner is performing his or her work in a safe and healthful manner.

Before a new miner begins work, you must provide the miner with at least four hours of training in the following subjects, which must also address site-specific hazards:

1. An introduction to the work environment, including a visit and tour of the mine. The method of mining or operation utilized must be explained and observed;
2. Instruction on the recognition and avoidance of electrical hazards and other hazards present at the mine, such as traffic patterns and control, mobile equipment (e.g., haul trucks and front-end loaders), and loose or unstable ground conditions;
3. A review of the emergency medical procedures, escape and emergency evacuation plan in effect at the mine, and instruction on the fire warning signals and firefighting procedures;
4. Instruction on the health and safety aspects of the tasks to be assigned, including the safe work procedures of such tasks, the mandatory health and safety standards pertinent to such tasks, information about the physical and health hazards of chemicals in the miner's work area, the protective measures a miner can take against these hazards, and the contents of the mine's HazCom program;
5. Instruction on the statutory rights of miners and their representatives under the Act;

6. A review and description of the line of authority of supervisors and miners' representatives and the responsibilities of such supervisors and miners' representatives; and
7. An introduction to your rules and procedures for reporting hazards.

No later than 60 days after you hire the miner, you must provide the miner with training in:

1. Instruction and demonstration on the use, care, and maintenance of self-rescue and respirator devices, if used at the mine, and
2. A review of first aid methods.

Newly-Hired Experienced Miner Training (30 CFR § 46.6)

Newly-hired experienced miners must be trained in the same subjects as the new miner; however, newly-hired experience miner training does not need to satisfy a minimum number of hours. The duration of the training needed depends on the occupational experience of the miner, the work duties that the miner will perform, and the methods of mining and workplace conditions at the mine where the miner will be working. All seven subjects must be taught prior to the miner beginning work at the mine. No later than 60 days after the miner is hired, you must also provide the miner with instructions and demonstration on the use, care, and maintenance of self-rescue and respiratory devices, if any are used at the mine.

You are not required to provide newly-hired experienced miner training to a miner who returns to the same mine, following an absence of 12 months or less. Instead the miner must be provided with training on any changes at the mine that occurred during the miner's absence that could adversely affect the miner's health or safety. This training must be given before the miner begins work at the mine. If the miner missed any part of annual refresher training under §46.8 during the absence, the miner must be provided the missed training no later than 90 calendar days after the returning miner begins work at the mine.

New Task Training (30 CFR § 46.7)

Task training must be provided to miners when they are reassigned to a new task in which they have no previous experience, and anytime a change has occurred in an assigned task that affects their health or safety. It must be provided before the miner performs the task. Practice under the close observation of a competent person may be used to fulfill the requirement for task training provided hazard recognition training is given before the miner performs the task.

Part 46 does not specify the amount of time that must be spent on task training. The performance-oriented approach of Part 46 allows for the needs of individual miners to be taken into account when determining duration of task training. A reasonable amount of time must be allotted for training in each task, based on the individual needs of the miner and the complexity of the assigned task.

New task training must address the safety and health aspects and safe work procedures specific to the task. It should also include instruction on hazardous chemicals they will be exposed to while performing this new task. It should include information about the physical and health hazards of chemicals in the work area, the protective measures the miner can take against these hazards, and the contents of the mine's HazCom program. They should know the location the MSDS's are stored on mine site, so they can easily locate them in case of an emergency.

It is important to note that you are not required to provide new task training to miners who have received training in a similar task or who have previous work experience in the task and can demonstrate the necessary skills to perform the task in a safe and healthful manner. However, to make this determination it is required that you observe that the miner can perform the task in a safe and healthful manner. However, if an experienced miner is trained on a specific piece of equipment and is then assigned to operate a similar piece of equipment that is a different model or made by a different manufacturer, that miner is required to receive new task training on the new piece of equipment. Although there may be similarities among different types of equipment, each type of equipment has unique operational characteristics. Miners must be trained on the unique characteristics of each piece of equipment they are assigned to operate.

Training under this section may be credited toward portions of new miner training. Although it has a slightly different name, new miners must receive instruction on the health and safety aspects of the tasks to be assigned, including the safe work procedures of such tasks, and the mandatory health and safety standards pertinent to such tasks.

Hands-on training can be used to complete task training. The regulation provides that: "practice under the close observation of a competent person may be used to fulfill the requirement for task training." While training under close observation may be done in a production mode, emphasis should be placed on the training and not the production.

Annual Refresher Training (30 CFR § 46.8)

Each miner must receive eight hours of refresher training at least once every 12 months.

There is one required subject that must be taught and included in your training plan for Annual Refresher training. That subject is "Instruction on changes at the mine that could adversely affect the miner's health or safety." However, your refresher training must also address health and safety subjects relevant to your site-specific mining operations. You can either choose subjects from the recommended subjects listed in the regulation 46.8 or develop your own relevant subjects. Remember, once you list the subjects in your training plan, you are required to teach those subjects during Annual Refresher training every year.

It is not acceptable to list all these subjects on the training plan and choose different subjects from year-to-year. The training plan needs to accurately represent each subject which you plan to cover during annual refresher training.

Site-Specific Hazard Awareness Training (30 CFR § 46.11)

You must provide Site-Specific Hazard Awareness Training to the following:

1. Any person who is not a miner but is present at the mine site.
    a. Office or staff personnel
    b. Scientific workers
    c. Delivery workers
    d. Customers, including commercial over-the-road truck drivers
    e. Construction workers or employees of independent contractors who are not miners under 30 CFR § 46.2.
    f. Maintenance or service workers who do not work at the mine site for frequent or extended periods.
        (1) Frequent exposure is a pattern of exposure to hazards at mining operations occurring intermittently and repeatedly over time.
        (2) Extended exposure is exposure to hazards at mining operations of more than five consecutive work days.
    g. Vendors or visitors
2. Miners who move from one mine to another mine while remaining employed by the same production operator or independent contractor (such as electricians, maintenance personnel, and drillers and blasters).

    Note – it is important to remember to complete a training record for your miners upon completion of training. [30 CFR 46.9(d)(5)]

Site-Specific Hazard Awareness Training is not required for any person who is accompanied at all times by an experienced miner who is familiar with hazards specific to the mine site.

Experienced miners, who are current with their annual refresher training and the appropriate task training and who move from one mine site to another, but remain employed by the same production-operator or independent contractor, are required to receive Site-Specific Hazard Awareness Training at each mine where they work.

Part 46 provides that Site-Specific Hazard Awareness Training may be provided through the use of written hazard warnings, oral instruction, signs and posted warnings, walk-around training, or other appropriate means that alert affected persons to site-specific hazards at the mine. Part 46 allows the flexibility to tailor hazard awareness training to the specific conditions and practices at the mine. In many cases, an effective Site-Specific Hazard Awareness Training program will include a combination of different types of training. The training must be sufficient to alert affected persons to site-specific hazards.

Site-Specific Hazard Awareness Training is information or instructions on:

1. The hazards a person could be exposed to while at the mine
2. Applicable emergency procedures
3. Health and safety risks, such as:
    a. Unique geologic or environmental conditions
    b. Recognition and avoidance of hazards such as:
        (1) Electrical and powered-haulage hazards
        (2) Traffic patterns and control
        (3) Restricted areas
4. Warning and evacuation signals, evacuation and emergency procedures or other special safety procedure.

Training Records (30CFR § 46.9)

Part 46 requires that operators record and certify the training that miners receive. Recording means creating a written record of training. The record must include:

1. Full name of person trained
2. Type of training
3. Duration of training
4. Date the training was received
5. Name of the competent person(s) who provided the training
6. Name of mine or independent contractor

7. MSHA mine identification or independent contractor number
8. Location of training (if not given at mine site, you must give the name and address of institution at which it was given)

Certifying means verifying, by signature, that the training listed on the written record was completed as indicated on the form. Part 46 requires that this certification be done by the person who has been designated by the operator as responsible for health and safety training at the mine **and** whose name appears on the training plan as such.

Training records must be certified at:

1. The completion of new miner training.
2. The completion of newly-hired experienced miner training.
3. The completion of the 8 hours of annual refresher training.
4. At least once every 12 months for new task training or upon request by the miner.
5. The completion of site-specific hazard awareness training **for miners**.

A training record or certificate may be maintained in any format, provided that it contains the information listed in Section 46.9(b).

If an MSHA Form 5000-23 is used, you must add information to the form in order to be compliant with the Part 46 regulation. First, you should indicate somewhere on the 5000-23 form that the training was **Part 46** training. You must also find a place to list all the **competent person(s)** who conducted the training, and the **duration** of the training.

False certification of a training record is punishable under 110 (a) and (f) of the Mine Act. A signed training certificate indicates that the training has been completed according to the training plan and according to the Part 46 regulations. Never sign the training certificate if the training is not completed. You must cover all the required subjects and meet all time requirements (such as with new miner and annual refresher training) before signing a training certificate. Because under 110 (a) and (f) of the Mine Act, false certification could lead to a personal fine and prison time.

Once the training record is certified, **you must provide a copy of it to the miner** and keep a copy on record and available for inspection. After a miner terminates employment, you must provide the miner with a copy of his/her training records upon request and maintain them for inspection for 60 days. As for those still employed, you must maintain a copy of the miner's new miner or experienced miner and task training certificates; however, you only need to maintain the most recent 2 years of annual refresher training certificates.

Compensation for Training (30CFR § 46.10)

Part 46 training must be conducted during normal working hours. While being trained, the miner must be paid at a rate of pay that corresponds to the rate of pay the miner would have received had he/she been performing the normal work tasks.

If training is given at a location other than the normal place of work, persons required to receive such training must be compensated for the additional costs, including mileage, meals, and lodging, they may incur in attending such training sessions. For example, if a miner is paid at time and a half for working on Saturday, the miner must be paid at that same rate for receiving training on Saturday.

Training Materials Available

Introduction to the Work Environment

1. Aggregate Milling Operations (2011) ..... DVD 638
2. Contributions of the American Miner (2004) ..... DVD 508
3. D-TRAIN – Stay Out Stay Alive (SOSA) (2008) ..... DVD 625
4. Dilemma of the Desert – Real Life Experiences SOSA (2008) ..... DVD 627
5. Dimension Stone (2009) ..... DVD 632S
6. Heat Stress in Mining (2012) ..... SM 6
7. Introduction to MNM Mining: A Programmed Text (2008) ..... PI 6
8. We Are… MSHA (2004) ..... DVD 535S

Recognition and Avoidance of Electrical Hazards, and Other Hazards such as Traffic Patterns and Control, Mobile Equipment

1. Accident Prevention (2003) ..... SM 4
2. Back Injuries in the Mining Industry (2000) ..... SM 24
3. Bins and Hoppers Safety (2003) ..... IG 66
4. Blasting Hazard Awareness (1996) ..... IG 73
5. Blind Spots Can Kill (1996) ..... DVD 526
6. Customer and Delivery Truck Drivers Hazard Training (1997) ..... DVD 541S
7. Electrical Hazards (2003) ..... SM 9
8. Electrical Lock-Out Procedures (1976) ..... DVD 570
9. Equipment Guarding (2005) ..... DVD 009
10. Falling Sliding Material, Highwalls and Banks BP-69
11. Fatal MNM Accidents (Construction, Maintenance and Repair 2004-2005) OT-36
12. Fatal PowerPoint (MNM) ..... OT 12
13. Good Berms Save Lives (1998) ..... DVD 504S
14. Junkyard Guards (2005) ..... DVD 513S
15. Lock Out and Tag for Safety (1994) ..... DVD 517
16. Material Handling Safety (2006) ..... IG 89
17. Mine Electricity (1999) ..... CI 8a
18. Personal Protective Clothing and Equipment (2010) ..... SM 14
19. Safety and Health Audit for Aggregate Operators (long version) (2005) ..... IG 14a
20. Safety and Health Audit for Aggregate Operators (short version) (2005) ..... IG 14
21. Safety Observation (2001) ..... IG 84
22. Seat Belt Success Story by Terry Sanders Part 1 (1996) ..... DVD 546S
23. Seat Belt Success Story: Roger Newman Part 2 (1996) ..... DVD 547S
24. SLAM for Life: MSHA Risk Assessment (2005) ..... DVD 520
25. SLAM Risks – Fatalities ..... OT 10
26. SLAM Risks Instructional Guide (2005) ..... DVD 012
27. SLAM Risks the SMART Way: Seat Belt Safety (2007) ..... DVD 600S
28. Slips and Falls on Mobile Equipment BP-70
29. Slips, Trips, and Falls (1994) ..... DVD 518
30. Stay in the Cab and Keep It On! A Survivor's Story (2006) ..... DVD 550
31. Surge Pile Safety (2008) ..... IG 109 CD
32. The Choice is Yours, Reflective Clothing (2005) ..... DVD 524
33. Toolbox Training for Aggregate Miners (2005) ..... IG 93 CD
34. TRAP Take Responsibility for Accident Prevention (2003) ..... IG 62 CD
35. Workplace Examinations (2004) ..... DVD 522S

Emergency Medical Procedures, Escape and Emergency Evacuation Plans, Firewarning Signals and Fire Fighting Procedures

1. Fire Fighting in the Mineral Industry (1970) ..... DVD 579
2. Fire Protection (2002) ..... CI 6 & CI 6a
3. Fire Safety (2002) ..... SM 13
4. Mine Escapeways (1997) ..... SM 11
5. The Magic of Fire (1965) (Historical) ..... DVD 610

Health and Safety Aspects of the Tasks to be Assigned

1. Confined Spaces in Mining (1994) ..... DVD 558
2. Fatal Alert: Entry into Storage Silos (1999) ..... DVD 587
3. Hazard Communication (2003) ..... DVD 003
4. Hearing Conservation (2002) ..... DVD 511S
5. Highway Truck Inspection (2005) ..... DVD 515
6. OJT Module – Cement (2002) ..... IG 42
7. OJT Modules – Dredges (2005) ..... IG 41
8. OJT Modules – Sand, Gravel, & Crushed Stone (2009) ..... IG 40
9. OJT Modules – Surface MNM (2005) ..... IG 43
10. Reducing Dust Inside Enclosed Cabs (2002) ..... DVD 552
11. Rigging, Hoisting, and Towing Safety (2008) ..... IG 107 CD
12. Sampling for Silica and Noise (2007) ..... IG 29
13. Truck Haulage Safety Series (2008) ..... DVD 004
14. Welding Safety (2013) ..... DVD 639
15. What Does the Term Silicosis Mean to You? (1998) ..... DVD 597S
16. Workplace Examinations (2004) ..... DVD 522S

Health (Annual Refresher Recommended Topic)

1. A Little Song about Noise (2005) ..... DVD 525
2. Chemical Hazard Information (2002) ..... DVD 557S
3. Dust - The Invisible Enemy (2000) ..... DVD 533S
4. Hearing Conservation (2002) ..... DVD 511S
5. What Does the Term Silicosis Mean to You? (1998) ..... DVD 597S

Miner's Rights and Responsibilities, Line of Authority and the Responsibilities of Supervisors and Miners' Representatives, and Introduction to Rules and Procedures for Reporting Hazards

1. Guide to Miners' Rights and Responsibilities (2010) ..... OT 2
2. Voice in the Workplace: Miners' Rights and Responsibilities (2011) ..... DVD 641

Ground Control – Working in Areas of Highwalls, Water Hazards, Pits, Spoil Banks, Illumination and Night Work. (Annual Refresher Recommended Topic)

1. Dump Point Safety: Stockpiles and Waste Piles (1997) ..... DVD 537S
2. Hazards and Safety Practices on Surge Piles (1997) ..... DVD 554S
3. Highwall Hazard Recognition (2002) ..... DVD 507S
4. Highwall Hazards (2004) ..... DVD 008
5. NIOSH's Ground Support… It's Important (Miner Mike Saves the Day) (2000) ..... DVD 575
6. Safety On or Near Water (1998) ..... DVD 503S
7. Safety Tips: Working Beside Highwalls (2002) ..... DVD 571S
8. Slope Stability of Waste Dams and Embankments (1979) (Historical) ..... DVD 602
9. What Could Happen: Risk Assessment and Inspecting Highwalls (2004) ..... DVD 500

LESSON PLANS

When you teach, you should always use your MSHA Approved Training Plan as a guide. However, it is recommended that you develop individual lesson plans for each subject you will be teaching. The lesson plan is a detailed plan of action indicating how you will go about teaching and evaluating each particular subject within the training program.

This section provides you with sample lesson plans for the various subjects within Part 46. These lesson plans should give you an idea of some things you should be teaching for each subject. **These lesson plans are not complete**. You should use them to help you get started. Then, either copy and use the blank form located at the end of the book to develop your site-specific lesson plans or create your own using a similar format.

Lesson Plan Basics:

- Course/Subject Name
  - List the name of the lesson.
- Course Length / Duration of Training
  - List approximately how long it will take you to teach this lesson.
  - This helps with time management.
- Objectives
  - List what it is that you want the student to know or be able to do at the end of the lesson.
  - This should be student-centered. "The student will be able to…"
- Course Materials
  - List what training materials you will use while teaching this lesson.
- Resource Materials
  - List other materials that you could use for teaching this lesson (as a back-up) or places you could direct students to find more information.
- Course Outline
  - List what you will do as the instructor to teach the lesson, and/or
  - List the key talking points that you will use to teach this lesson.
  - Note: This information should be related to the objectives listed.
- Evaluation
  - You need to know if the students understood/learned the information you taught.
  - The evaluation questions should have a direct correlation with the listed objectives.

INTRODUCTION TO THE WORK ENVIRONMENT

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

OBJECTIVES: *(The student will be able to…)*

1. Observe the mining process and procedures being used at the mine.
2. Describe hazards at the mine and safety precautions needed.
3. Identify and describe the function of machines, processes, and locations.
4. Identify all restricted areas and other areas where particular caution is necessary.
5. Identify key locations of buildings and safety equipment.
6. Use mining terminology.

COURSE MATERIALS NEEDED:

1. Company Policy Manual
2. Mine Map

RESOURCE MATERIALS AVAILABLE:

1. DVD 508 – Contributions of the American Miner

COURSE OUTLINE: *(What will the instructor do? / Talking points.)*

1. Give a tour of the entire mine site.
    a. Explain the mining process (from start to finish) of how surface mining is accomplished and allow them time to observe the process.
    b. Point out the area the miner will be working.
    c. Introduce and point out hazards the miner will be exposed to in the area and precautions to take.
    d. Point out restricted areas and precautions to take while near them.
2. Explain the basic purpose of each piece of equipment.
3. Explain general hazards associated with each step in the process.
4. Give details about and hazards associated with the product that is being mined.
5. Explain the mining terminology – point out key terms during the tour and show pictures in the classroom of things such as Bench, Highwall, Pit, Spoil/Muck Pile, Man-trip, Tram, Conveyors, Plant, Guarding, etc.
6. Point out key areas such as offices, shops, telephones, location of emergency numbers and exits, first aid kits, eye-wash stations, fire extinguishers, etc.

EVALUATION:

1. Name steps in the mining process.
2. Given a list of verbal descriptions or pictures of various mining equipment, properly identify each piece of equipment.
3. Identify restricted areas and other areas where precautions are needed.

Recognition and Avoidance of Electrical Hazards

Approximate Course Length / Duration of Training: _____

Objectives: (The student will be able to…)

1. Identify contributing factors to electrical accidents.
2. Recognize safe work procedures to help protect from electrical shock.
3. Identify reasons for and company policy regarding lock-out tag-out procedures.

Course Materials Needed:

1. Samples of locks, tags, bad splices, exposed wires, faulty insulation
2. Company Policy Manual
3. Accident or fatal reports showing electrical injury or death at a mine site

Resource Materials available:

1. MSHA – Electrical Hazards (SM 9)
2. MSHA – Lock Out and Tag for Safety (DVD 517)

Course Outline: *(What will the instructor do? / Talking points.)*

1. Show contributing factors to electrical accidents.
    a. Show examples: faulty insulation, connections, splices, and grounding
    b. Working on energized equipment
    c. Operating equipment near overhead power lines, guy wires, and energized trailing cables
    d. Water hazards
    e. Unauthorized work on electrical equipment
    f. Not wearing proper PPE such as special gloves and boots
2. Discuss health effects of electrical shock (shock, burns, eye injury, death).
3. Discuss company policy regarding lock-out - tag-out – try out procedures.
    a. What, When, Where, Why, How?
4. Explain what to do if a co-worker is getting or has been shocked.
5. Discuss electrical cover plates and inspections.
6. Discuss damaged cords and outlets.
7. Discuss how, when, and to whom to report electrical hazards.

Evaluation:

1. Give student several pictures showing electrical hazards. Have student:
    a. Identify the hazards and give examples of how to report the hazards, and
    b. Explain what to do to correct the hazard or prevent someone from being injured from it while waiting for it to be corrected.
2. When do you lock out and tag out?
3. Why do you lock out and tag out?
4. How do you lock out and tag out?
5. How and to whom do you report an electrical hazard?

Recognition and Avoidance of Other Hazards Present at the Mine, Such as Traffic Patterns and Control, Mobile Equipment

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Recognize potentially hazardous locations, conditions, or procedures.
2. Demonstrate how to avoid the identified hazards.
3. List contributing factors of accidents.
4. Identify the types and give examples of accidents occurring at surface mines.
5. Discuss the hazards associated with powered haulage and large machinery.

Course Materials Needed:

1. Company Policy Manual; Company Accident Reports and Near-Miss Reports
2. MSHA Fatalgrams or Fatal Reports
3. Workplace Exam and Pre-Operational Check List

Resource Materials available:

1. MSHA Fatal PowerPoint and MSHA SLAM Risk Fatalities (OT 10)
2. MSHA Data Retrieval System (www.msha.gov) – view violations and accidents
3. Company's Part 50 Reports, MSHA Fatalgrams and Fatal Reports
4. Blind Spots Can Kill (DVD 526); Good Berms Save Lives (DVD 504-S)

Course Outline: *(What will the instructor do? / Talking points.)*

1. Discuss the need of daily workplace exams and pre-op checks.
2. Show and discuss potential hazards to the miner and explain the dangers of leaving hazards uncorrected.
3. Discuss potential hazards to others by the miner's actions.
4. Discuss the hazards and best practices to avoid or prevent accidents, such as:
    a. Moving vehicles and equipment; exposed pinch points and rotating mechanical parts, unguarded machinery or moving parts
    b. Releases of energy such as compressed gas, hydraulic lines, energized components, explosives; environmental hazards such as dust, deep water, high places, slippery areas, welding areas, overhead power lines, etc.
    c. Lifting hazards; slips, trips, and fall hazards; mounting and dismounting; walkways; etc.
5. Accident Contributing Factors: Unsafe environment, unsafe acts, unsafe behaviors
    a. Exposure to extreme heat or cold, other weather conditions, dusty or noisy environments
    b. Horseplay, taking shortcuts, lack of training
    c. Complacency, views it's easier or quicker to do the task the unsafe way
    d. Frustration, fatigue, and rushing

6. Most accidents happen while handling materials, performing haulage activities, operating machinery, using hand tools, and slips and falls.
    a. Use proper lifting techniques, avoid carrying loads too high which blocks vision, and avoid carrying loads that are too heavy.
    b. Never exceed speed limits, when on foot watch out for equipment and communicate with operators, never get on or off moving equipment, don't ride in buckets, etc.
    c. Ensure machinery operators know you are in their work area.
    d. Never walk under raised equipment or in swing areas such as around booms and loaders.
    e. Never leave equipment unattended in a raised position.
    f. Loose clothing and long hair are hazards around moving parts.
    g. Use the proper tool for the job.
7. Discuss dangers of and safety around moving conveyor belts.
8. Discuss seat belt policy and PPE: glasses, gloves, shoes, hard hat, etc.
9. Discuss ladder safety: 3 points of contact, proper angle and location, etc.
10. Discuss company policy concerning alcohol and drugs.
11. Discuss safe methods of using hand tools and power tools; discuss dangers of using defective tools.
12. Discuss maintenance and repair hazards and safety procedures (such as blocking from motion, etc.); Discuss welding hazards.
13. Discuss safety issues regarding cell phone and electronic device usage and company policy regarding their use.
14. Discuss dangers of compressed gas cylinders and chemical storage.
15. Discuss accidents occurring at the mine and preventive measures to be taken.
16. Give details about site-specific traffic patterns to follow while on the mine property.
    a. Speed, direction of movement, using headlights for better visibility, signs and signals showing hazards
    b. Traffic flow patterns, driving on the left or right
    c. Obeying traffic signs and posted speed limits
    d. Who and when they have the right of way
17. Road condition hazards
    a. Wet, muddy, or frozen; narrow; elevation
    b. Berms; drainage problems; debris; and large equipment
18. Distractions while driving and/or operating equipment:
    a. Phones, texting, passengers, radios, etc.

EVALUATION:

1. Name hazards found at the mine site and the precaution you should take to prevent accidents occurring due to those hazards.
2. What is the company policy on the use of cell phones, alcohol and drugs?
3. How can you protect yourself from powered haulage and machinery hazards?
4. Why and when should you use chock blocks?

EMERGENCY MEDICAL PROCEDURES, ESCAPE AND EMERGENCY EVACUATION PLANS, FIREWARNING SIGNALS AND FIRE FIGHTING PROCEDURES

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

OBJECTIVES: (The student will be able to…)

1. Discuss types and signs of mine emergency conditions.
2. Describe characteristics and locations of emergency exits and means of reaching them from the work area.
3. Describe actions to take and demonstrate communications in the event of a mine emergency.
4. Locate and operate nearest fire extinguisher.
5. Locate and use emergency first aid kit and supplies.
6. Identify different types of fires and extinguishers available at mine site.
7. Travel the emergency evacuation routes.

COURSE MATERIALS NEEDED:

1. Mine Map
2. Mine Emergency and Evacuation Plan
3. Fire Extinguisher
4. Emergency scenarios that could occur
5. First Aid Kit and Supplies

RESOURCE MATERIALS AVAILABLE:

1. Handouts and Posters from Vendor
2. Magic of Fire (DVD 610)
3. Fire Safety (SM 13)

COURSE OUTLINE: *(What will the instructor do? / Talking points.*)

1. Describe the different types of mine emergencies and how to detect each.
    a. Fires, explosions, toxic gases, extreme weather, water hazards, etc.
    b. Demonstrate emergency signals (or warning systems) for each situation (*student will hear the audible sound of the alarm and/or see the emergency flashing lights, if used*).
2. Emergency Medical Procedures
    a. Show locations of emergency exits, fire-fighting equipment, first aid kits, MSDS sheets, phones, emergency phone numbers, the physical address of mine, etc.
    b. Explain the company policy, steps to take, and who to call during an emergency.
    c. Remind them to stay calm, assess the situation, collect information, and call for help.
    d. MSHA's One Call Does It All - 1-800-746-1553.

3. Escape and Emergency Evacuations Plans
    a. Explain the site-specific escape and emergency evacuation plan.
        i. Familiarize students with their work area.
        ii. Show the emergency exits and means of reaching them from the work area using the mine map as well as have them identify and walk the exit from their work areas.
        iii. Group students. Give each group a different scenario. Students will consider quietly how each would handle the scenario, then discuss their ideas amongst the group. Formulate what the group believes is the best response. Students will explain what they would do or the path they would take in an emergency.
    b. Escape to a safe location.
    c. Travel the emergency evacuation routes.
    d. Gather at designated meeting area and report all information.
4. Fire Warning Signals
    a. Show locations of alarm devices - how to sound or give fire warning or other emergency signals in order to help warn others.
    b. Show all fire-fighting equipment using the mine map.
5. Fire-Fighting Procedures
    a. Describe and distinguish the different types of fires: Class A, B, C, & D.
    b. Importance of a clear line of retreat
    c. Locate and operate nearest fire extinguisher using the PASS method – Pull Pin, Aim, Squeeze, Sweep – Give each student the chance to practice the method.
6. Demonstrate actions that are expected of the miner during an emergency.
    a. Teach how and when to use communication equipment (phone, radio, etc.)

EVALUATION:

1. Recognize signs that a mine emergency exists.
2. Demonstrate emergency evacuation procedures.
3. Name 4 fire extinguishers locations.
4. Describe or demonstrate proper fire-fighting techniques.
5. Name areas first aid equipment is stored.
6. Name a location where emergency phone numbers are posted.
7. Where is the meeting place that you are expected to go to during an emergency?

HEALTH AND SAFETY ASPECTS OF THE TASKS TO BE ASSIGNED

NAME OF TASK: _____

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

OBJECTIVES: *(The student will be able to…)*

COURSE MATERIALS NEEDED:

1. Equipment Instruction Manual / Operator's Manual
2. Company Policy Manual
3. JSA, JTA, SOP, List of Job Duties and Hazards
4. Mine Map
5. Applicable equipment needed
6. Personal Protection Equipment (PPE) as required for the task
7. HazCom Program and MSDS for all particular chemicals associated with the task.

RESOURCE MATERIALS AVAILABLE:

1. Company Policy Manual
2. Mine Map
3. Ground Control Plans
4. Equipment Instruction Manual
5. Various MSHA Materials

COURSE OUTLINE: *(What will the instructor do? / Talking points.)*

1. Discuss the purpose of the task to be assigned.
2. Allow student to observe from a safe location the task being performed by an experienced person.
3. Discuss hazards, standard operating procedures, and safe work procedures.
4. Discuss mandatory safety and health standards that are pertinent to the task
    a. Dust and Noise Hazards and Standards
    b. Most frequent violations written pertinent to the task
    c. MSHA's Rules to Live By program
5. Discuss site/job-specific HazCom program and hazards:
    a. Discuss the physical and health hazards of all chemicals in the work area.
    b. Discuss protective measures to be taken against these hazards.
    c. Discuss the contents of the HazCom program.
    d. Instruct how to find and use the pertinent MSDS's.
    e. Discuss the specific chemical hazards and above information associated with the task.
6. Discuss all dangers involved in performing the task.
7. Discuss the dangers involved for others working near the task being performed.

8. Discuss specifics for the following as necessary depending on the task to be assigned:
    a. Pre-Operational Checks and Workplace Examinations
    b. Right tool for the job and how to use the tool safely.
    c. PPE – fits properly – explain the purpose and need for each PPE for the job.
    d. Mounting and dismounting procedures
    e. Use of lights, horns, back-up alarms, and blind spots
    f. Standard Operating Procedures
    g. How to operate and use controls
    h. Procedures during maintenance and repair
    i. Parking procedures (chocks, brakes, location)
    j. Step by step instructions on how to perform the task safely.
    k. Visibility problems; Dust; Chock Blocks; Back-up alarms
    l. Never ride in a bucket of a piece of equipment
    m. Never get on or off moving equipment
9. Allow student to practice task under close supervision in a non-production area or during non-production hours.
10. Allow student to practice task under close supervision during production.

EVALUATION:

1. Observe the student performing the task in a non-production and production environment.
2. Observe the student performing the task in various weather conditions.
3. Ask scenario questions that cause the student to apply knowledge learned during training to solve the problem.
4. Have student find a particular MSDS and show where to find the protective equipment needed while working with the chemical.
5. After each practice session, cover areas and topics in which the student needs improvement and point out areas where the student did great.
6. Re-observe the student performing the task after you corrected them.

Introduction to Rules and Procedures for Reporting Hazards

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Identify procedures for reporting hazards.

Course Materials Needed:

1. Company Policy Manual

Resource Materials available:

1. Company Policy Manual
2. SLAM Fatalities (OT 10)

Course Outline: *(What will the instructor do? / Talking points.)*

1. Importance of reporting hazards
2. Discuss near-misses, including the need and how to report them
3. Explain how and to whom to report hazards and unsafe working conditions
    a. Reporting Workplace Examinations
    b. Reporting Pre-Shift or Pre-Operational Checks
    c. Reporting Safety Defects
    d. How to inform management of ALL hazards. Here are a few common hazards:
        i. Haul road hazards, berms, and guardrail problems
        ii. Malfunctioning or non-operating back-up alarms and horns
        iii. Missing electrical cover plates, exposed wires, or damaged cords
        iv. Missing or defective guards around moving machine parts
    e. Explain that mine operators are required to report all mining accidents immediately – within 15 minutes of when the operator knew or should have known about the accident. MSHA's One Call Does it All - 1-800-746-1553 - may be used to report accidents but an official accident report must also be completed and submitted.

        Accidents defined below:
        1. A death of an individual at a mine;
        2. An injury to an individual at a mine which has a reasonable potential to cause death;
        3. An entrapment of an individual for more than thirty minutes or which has a reasonable potential to cause death;
        4. An unplanned inundation of a mine by a liquid or gas;
        5. An unplanned ignition or explosion of gas or dust;
        6. In underground mines, an unplanned fire not extinguished within 10 minutes of discovery; in surface mines and surface areas of

underground mines, an unplanned fire not extinguished within 30 minutes of discovery;

7. An unplanned ignition or explosion of a blasting agent or an explosive;
8. An unplanned roof fall at or above the anchorage zone in active workings where roof bolts are in use; or, an unplanned roof or rib fall in active workings that impairs ventilation or impedes passage;
9. A coal or rock outburst that causes withdrawal of miners or which disrupts regular mining activity for more than one hour;
10. An unstable condition at an impoundment, refuse pile, or culm bank which requires emergency action in order to prevent failure, or which causes individuals to evacuate an area; or, failure of an impoundment, refuse pile, or culm bank;
11. Damage to hoisting equipment in a shaft or slope which endangers an individual or which interferes with use of the equipment for more than thirty minutes; and
12. An event at a mine which causes death or bodily injury to an individual not at the mine at the time the event occurs.

EVALUATION:

1. How do you report a hazard?
2. To whom do you report a hazard?

MINERS' RIGHTS AND RESPONSIBILITIES

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

OBJECTIVES: *(The student will be able to…)*

1. Recognize the rights they have under The Mine Act.
2. Recognize their responsibilities they have under The Mine Act.
3. Locate and state when and how to use the One Call Does It All phone number.

COURSE MATERIALS NEEDED:

1. A Guide to Miners' Rights and Responsibilities under the Federal Mine Safety and Health Act of 1977 (OT 2)
2. Company Policy Manual

RESOURCE MATERIALS AVAILABLE:

1. A Guide to Miners' Rights and Responsibilities (OT 2)
2. Voice in the Workplace (DVD 641)

COURSE OUTLINE: *(What will the instructor do? / Talking points.)*

1. Right to be protected against discrimination when you exercise your rights under the Act, including reporting violations and unsafe condition, at any mine
2. Right to be paid for certain periods of time when a mine or part of a mine has been closed because of a withdrawal order
3. Right to have a representative accompany an MSHA inspector during inspections at your mine
4. Responsibility to comply with all Federal and State laws and regulations, and company safety and health policies
5. Responsibility to notify the operator, supervisor, or other responsible person when your work environment becomes unsafe or unhealthy
6. Responsibility to provide truthful statements and representations during any inspection or investigation, or on any application, record, report, plan, training certificate, or other document required to be kept or filed with MSHA
7. Never give advance notice of an inspection.
8. Explain where smoking is prohibited at the mine and the penalty if caught.
9. "One Call Does It All" – 1-800-746-1553
    a. Name of Company
    b. Name of Mine
    c. Location (city/town and state)
    d. MSHA ID number (if known)

10. **NOTE**: Use the Mine Act and Miners' Rights Guide to finish the list and explain their rights under the Mine Act. (Rights to medical exams, training, inspections, information, etc.)

EVALUATION:

1. Name 3 Rights you have as a miner.
2. Name 2 Responsibilities you have as a miner.

Line of Authority and the Responsibilities of Supervisors and Miners' Representatives

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Identify each supervisor and their responsibilities.
2. Identify the miners' representative and his/her responsibilities.

Course Materials Needed:

1. Company Policy Manual

Resource Materials available:

1. Company Policy Manual
2. A Guide to Miners' Rights and Responsibilities Under the Federal Mine Safety and Health Act of 1977 (OT 2)
3. Voice in the Workplace (DVD 641)

Course Outline: *(What will the instructor do? / Talking points.)*

1. Explain Chain of Command
    a. Who is in charge of each area, section, or shift and what are their responsibilities?
    b. Who is the safety director and what are his/her responsibilities?
    c. How to contact these people?
2. Explain how to submit pre-operation checks, work orders, workplace exams, etc.
3. Explain who their miners' representative is and how to contact him/her.
4. Describe the responsibilities of the miners' representative.

Evaluation:

1. Who are your supervisors?
2. Who are your miners' representatives?
3. How can you contact them?

Instruction and Demonstration on the Use, Care, and Maintenance of Self-Rescue and Respiratory Devices, If used at the mine

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Don the self-rescuer and/or respirator properly.
2. Identify locations where self-rescuer and/or respirator devices are to be used.
3. Recognize when self-rescuer and/or respirator devices are to be used/worn.
4. Identify proper care and maintenance needed for each device.
5. Recognize the potential consequences of not properly donning each device.

Course Materials Needed:

1. Company Policy Manual
2. Mine Map
3. Dust Control Plan
4. PPE

Resource Materials available:

1. Company Policy Manual
2. Surge Pile Safety (2008) – IG 109 CD
3. Dust - The Invisible Enemy (2000) – DVD 533S
4. Sampling for Silica and Noise – A Handbook for MNM – IG 29
5. Truck Haulage Safety Series (2008) – DVD 004
6. What Does the Term Silicosis Mean to You? (1998) – DVD 597S

Course Outline: *(What will the instructor do? / Talking points.)*

1. Show the location where devices can be found.
2. Discuss the importance of wearing the self-rescue and/or respiratory device.
3. Discuss why, when, and where the devices are needed to be used or worn.
4. Demonstrate how to don/wear the self-rescuer or respiratory device.
5. Discuss checks to perform to determine if the device/PPE is in good condition and ready to be used.
6. Discuss the care and maintenance for each device provided.
7. Discuss the potential consequences of not properly donning each device.

Evaluation:

1. Where is the PPE located if you need it?
2. What could happen to increase your need to don a respirator while working at this mine?
3. What are some steps you can do to care for and maintain the device in good condition?
4. How do you determine if you are wearing the device correctly?
5. Have student don the self-rescue and/or respiratory device.

First Aid

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Perform current acceptable patient assessment techniques.
2. Perform current acceptable artificial respiration methods.
3. Perform current acceptable treatment for how to control bleeding.
4. Perform current acceptable treatment of shock.
5. Perform current acceptable treatment of wounds, burns and musculoskeletal injuries.

Course Materials Needed:

1. First Aid Supplies, including blankets and stretcher
2. Rescue Annie
3. Common mining/personal items that could be used as splints or other first aid supplies.

Resource Materials available:

1. Company Policy Manual
2. American Red Cross
3. National Safety Council
4. American Heart Association

Course Outline: *(What will the instructor do? / Talking points.)*

1. Discuss why first aid is important.
2. Discuss and show the location of first aid supplies.
3. Demonstrate and discuss current methods of patient assessment.
4. Demonstrate and discuss artificial respiration techniques.
5. Demonstrate and discuss best methods of how to control bleeding.
6. Demonstrate and discuss the importance of treating and how to treat shock.
7. Demonstrate and discuss methods of treating wounds, burns and musculoskeletal injuries.

Evaluation:

1. Perform patient assessment.
2. Perform artificial respiration.
3. Perform treatments for how to control bleeding.
4. Perform treatments for shock.
5. Perform treatments for wounds, burns and musculoskeletal injuries.

Note: When teaching first aid, always use the most up-to-date techniques available.

Changes at the Mine that Could Adversely Affect the Miner's Health or Safety

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Identify changes that have occurred over the past year at the mine site that could affect the miners' health and/or safety.
2. Identify how they can protect themselves from those changes.
3. Identify changes to behavior or standard procedures that may be necessary to protect them.

Course Materials Needed:

1. Company Policy Manual
2. Mine Map
3. Ground Control Plan

Resource Materials available:

1. Company Policy Manual
2. Mine Map
3. Ground Control Plan

Course Outline: *(What will the instructor do? / Talking points.)*

1. Discuss all changes that have occurred over the past year.
2. Discuss how those changes affect the health and safety of the miners.
3. Discuss how they can protect themselves from the hazards those changes cause.
4. Discuss any changes needed to the standard operating procedures to ensure the safety of all workers.

Evaluation:

1. Name two changes that have occurred in the past year that could affect your health or safety while working at this mine?
2. Name one thing you can do to protect yourself from these hazards.

Ground Control – Working in Areas of Highwalls, Water Hazards, Pits, Spoil Banks, Stock Piles, Illumination and Night Work.

Approximate Course Length / Duration of Training: _____

Objectives: *(The student will be able to…)*

1. Describe hazards and safe work procedures to be followed while working around highwalls, water hazards, pits, stockpiles and spoil banks.
    a. Identify the site-specific ground control hazards.
    b. Identify methods of how to avoid and/or protect against injury.
2. Identify safe operating procedures to follow during night work.

Course Materials Needed:

1. Ground Control Plan (site-specific)
2. Mine Map (site-specific)
3. Highwall Pictures (showing good vs bad: cracks, weathering, etc.)
    a. Generic pictures of hazards not present at the mine site
    b. Site-specific pictures of hazards at the mine site
4. Stock Pile Pictures (showing good vs bad: steepness, size, etc.)
    a. Generic pictures of hazards not present at the mine site
    b. Site-specific pictures of hazards at the mine site

Resource Materials available:

1. Dump Point Inspection Handbook (IG 59)
2. Ground Support… It's Important (Miner Mike Saves the Day) (DVD 575)

Course Outline: *(What will the instructor do? / Talking points.)*

1. Discuss the importance of performing a daily workplace examination.
    a. Pre-shift and on-shift checks
2. Describe hazards and safe work procedures to be followed while working around highwalls, water hazards, pits, and spoil banks.
    a. Sloping, benches, scaling, drainage, explosives, equipment, etc.
    b. Highwalls: cracks, slope failures, weathering, overhangs, cavities, and scaling
    c. Water hazards: drowning, electrocution, slippery roads, drainage, ponds, etc.
    d. Pits: bad weather, traffic, bench width, drainage, grade of haul road
    e. Spoil banks / stockpiles: steepness of pile, heavier materials on top, bad weather
3. Identify safe operating procedures to follow during night work.
    a. Drive slower, keep closer eye on moving equipment, wear reflective clothing; illuminate, turn on equipment lights, dim lights when approaching other equipment, use flares to warn about hazards, etc.

4. Never work between the highwall and a piece of equipment.
5. Avoid undercutting a highwall or stockpile.
6. Highwall Inspections – visually check highwall every time you work near it and listen for falling rocks.
7. Barricading Procedures – block off the dangerous area if necessary.
8. Describe safety equipment location and use: personal floatation device, rescue rings, boats, fall protection, etc.
9. Avoid travelling over ice covered water.
10. Never work alone.
11. Avoid steep unlevel banks.
12. Keep travelways clean and clear of debris and tripping hazards (especially near water).
13. Impoundments
    a. What is an impoundment and why do we have it?
    b. Embankment cracks, slumping or bulging indicate slope failure
    c. Watch for wave erosion

EVALUATION:

1. Describe hazards and safe work procedures to be followed while working around highwalls, water hazards, pits, stockpiles, and spoil banks.
2. Identify cracks in highwall.
3. Identify safe operating procedures to follow during night work.
4. Identify hazards associated with impoundments.

TOPIC TITLE: _____

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

COMPETENT INSTRUCTOR: _____

OBJECTIVES: *(The student will be able to…)*

1. _____
2. _____
3. _____

COURSE MATERIALS NEEDED:

1. _____
2. _____
3. _____
4. _____

RESOURCE MATERIALS AVAILABLE:

1. _____
2. _____

COURSE OUTLINE: *(What will the instructor do? / Talking Points.)*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

EVALUATION:

1. _____
2. _____
3. _____

TOPIC TITLE: _____

APPROXIMATE COURSE LENGTH / DURATION OF TRAINING: _____

COMPETENT INSTRUCTOR: _____

OBJECTIVES: *(The student will be able to…)*

4. _____
5. _____
6. _____

COURSE MATERIALS NEEDED:

5. _____
6. _____
7. _____
8. _____

RESOURCE MATERIALS AVAILABLE:

3. _____
4. _____

COURSE OUTLINE: *(What will the instructor do? / Talking Points.)*

12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____

EVALUATION:

4. _____
5. _____
6. _____

Notes

Notes