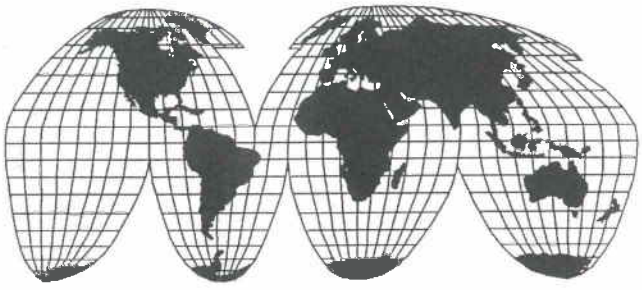
30 CFR Part 46 Instructors Guide with Lesson Plans

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

Instruction Guide Series
IG 37

October 1999

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



30 CFR Part 46 Instructors Guide with Lesson Plans

U.S. Department of Labor
Elaine L. Chao
Secretary

Instruction Guide Series
IG 37

October 1999

CONTENTS

	Page
Introduction	1
Instructors Guide	3
Training Program Guide	7

INTRODUCTION

This guide is designed to assist mine operators and independent contractors, that are covered by the part 46 regulations, in developing effective and mine specific training programs. The target audience 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 you are encouraged to modify or improve the ideas presented or design your own program. The text intentionally avoids educational jargon. Teaching methods were chosen to closely match intuitive methods people use to train employees. Paperwork has been kept to a minimum. Most of the subjects can best be taught on-site or in controlled situations on-the-job.

Each guide leads you in preparing your own class by providing a teaching purpose, suggesting additional teaching materials, a fill-in-the-blank lesson plan, and suggestions for evaluating the effectiveness of the training.

A copy of the guide is found on the MSHA Internet home page at **www.msha.gov.** The guide can be downloaded and the electronic copy revised to provide additional space for inputting your mine specifics. You can also develop your own program using this guide as an outline.

We at MSHA hope you find this guide helpful. In addition, comments and suggestions to improve this guide are welcome.

30 CFR PART 46 INSTRUCTORS GUIDE

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

Introduction

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 part 46 regulation. For additional information, please refer to the text of the regulation at 30 CFR Part 46.

Training Plan (§46.3)

A written part 46 training plan must contain as a minimum the following:

- The company name, mine name, and MSHA mine identification number or independent contractor I.D. number.
- The name and position of the person responsible for the health and safety training at the mine.
- Subject areas
  - general description of the teaching methods
  - course materials
  - approximate time spent on each subject
  - evaluation procedures used to determine the effectiveness of the training
- A list of competent persons who will do the training and the subject areas in which each person is competent to teach. (There are 43 states and the Navajo Nation, who participate in the MSHA State Grant Program, that have provided training to small mines for many years. These states can be a source of training assistance.)

New Miner Training (§46.5)

Each new miner must receive 24 hours of training as described in §46.5.

Before new miners can do any work they must receive at least four hours of training in the following subjects:

- An introduction to the work environment, including a visit and tour of the mine.
- Instruction on the recognition and avoidance of electrical hazards and other hazards present at the mine.
- A review of the emergency medical procedures and escape and emergency evacuation plans in effect at the mine, and instruction in the fire warning signals and fire fighting procedures.
- Instruction in the health and safety aspects of the tasks to be assigned, including the mandatory health and safety standards pertinent to such tasks.
- Instruction in the statutory rights of miners and their representatives under the Act.
- A review and description of the line of authority of supervisors and miners' representatives and the responsibilities of such supervisors and miners' representatives.
- An introduction to your rules and procedures for reporting hazards.

You must provide site-specific hazard awareness training to miners, such as drillers and blasters, who move from one mine to another while remaining employed by the same production operator or independent contractor. You must also provide site-specific hazard awareness training to construction workers or employees of independent contractors who are not miners.

You may provide hazard training through the use of written hazard warnings, oral instruction, signs and posted warnings, walk-around training, or other appropriate means.

Training Records (§46.9)

Part 46 requires that the mine operator/independent contractor record and certify that miners have received health and safety training. A record must be kept for miners for each training class. Each training record must be certified upon completion of new miner, newly-hired experienced miner, annual refresher, upon completion by miners of site-specific hazard awareness training, and at least once every 12 months for task training. You may use the MSHA Form 5000-23 or any form that contains the following information:

- The printed full name of the person trained (first, middle, last name).
- The type of training completed, the duration of the training, the date the training was received, and the name of the competent person who provided the training.
- The mine or independent contractor name, MSHA mine identification number or independent contractor I.D., and location of training (if an institution, the name and address of the institution).
- The statement, "False certification is punishable under section 110(a) and (f) of the Federal Mine Safety and Health Act," printed in bold letters and in a conspicuous manner.
- A statement signed by the person designated as responsible for health and safety training in the MSHA-approved training plan for the mine that states, "I certify that the above training has been completed."

AS A REMINDER: *False certification that training was completed is punishable under 110(a) and (f) of the Act.*

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Introduction to the work environment §46.5(b)(1); §46.6(b)(1)

Course Length: from _____ to _____

Competent Instructor(s) _____

The object of the introduction is to:

Familiarize the miner with the mine site.
Explain and observe the mining process.
Identify and explain the vocabulary for machines, processes, and locations.
Identify any restricted areas or areas where particular caution is necessary.

Begin at the extraction site and follow the product progressively through the mining process until it leaves the mine site.

Use, define, or describe terms that identify the locations, equipment, and operations so the miner will be able to understand instructions and communicate accurately with other miners.

We mine _____ using _____ to remove the product.

The product is then loaded into (onto) _____ using _____.

The product is transported by _____ to _____ for preparation.

The product is prepared by _____ and stored_____.

You should not enter the _____ area when_____ .

Point out restricted areas and general hazards associated with each step of the operation.
Allow time for questions.

Evaluation: Ask the miner to summarize what he/she has seen at each of the major process areas. Correct any confusion, misunderstanding, or errors. Have the miner indicate actual machines, processes, locations, controls, etc., wherever possible.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Recognition and avoidance of hazards §46.5(b)(2); §46.6(b)(2)

Course Length: from _____ to _____

Competent Instructor(s)_____

The purpose of this course is to train the miner to recognize potentially hazardous locations, conditions, or procedures. Once a potentially hazardous location, condition, or procedure is identified, discuss or demonstrate how to avoid the hazards.

Potential hazards should be discussed and considered as:

1. Hazards to the miner.
2. Hazards to others by the miner's actions.

Discuss the differences and examples of different kinds of hazards such as:

- moving vehicles
- exposed "pinch points" and rotating mechanical parts
- releases of energy such as compressed gas, hydraulic lines, energized components, explosives
- environmental such as dust, deep water, high places, slippery areas, welding areas, overhead power lines, etc.
- lifting hazards
- slips and falls
- other: _____

Training Materials: Company safety rules
Company accident reports
MSHA Hazard Recognition Pamphlet
MSHA-produced publication, "Fatal Accidents Involving Small Crushed Stone, Sand and Gravel Operations," OT-41
MSHA Health Hazard Information Cards

Evaluation: Have the miner identify any potential hazards he/she can identify at a work process. Discuss these ideas with the miner and how the miner could avoid being hurt by them.

Take a few minutes to see if you can spot any of the potential causes of an accident in the _____ area.
Why do you think _____ is a potential cause for an injury?
What events would cause this to happen?
What could you do to prevent this from happening?

Discuss the miner's responses and offer any additional insights.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

A review of emergency medical procedures, escape and emergency evacuation plans, fire warning signals, firefighting procedures §46.5(b)(3); §46.6(b)(3)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to train the miner in appropriate steps to take in the event of fire or other emergency that would require the miner to leave the mine or affected area of the mine.

Training Materials: Company mine emergency and evacuation plan
Fire extinguisher
MSHA-produced video, "Emergency Response Planning (Who Needs It?)," VC 838
MSHA-produced video, "Fire Extinguishers," VC 879
MSHA-produced video, "Fire Fighting in the Mineral Industry," VC 827
MSHA-produced safety manual, "Fire Safety," SM 13

If you are hurt on the job, you should first _____; second _____.

If you see a fire or excessive smoke in the buildings or on a piece of machinery you should _____.
If the fire is _____ in size you should fight the fire using _____.
If the fire is an electrical fire you should _____.
If the fire is too large to put out you should _____.
The fire or emergency signal(s) at this mine are _____.
If you hear or see this signal(s) you should _____.

Point out the locations of fire extinguishers. Use an extinguisher to point out restraining pin, operating handle, and nozzle operation.

Evaluation: Have the miner explain or demonstrate the correct procedures for reporting, fighting, and escaping a fire. Also have him/her indicate the locations of fire extinguishers and describe the correct initiation and use of a fire extinguisher. Correct any mistakes and have the miner repeat the correct response.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Health and safety aspects of the task assigned §46.5(b)(4); §46.6(b)(4)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard in turn, and where appropriate, ways to avoid the hazard. Where feasible demonstrate correct procedures. Related health and safety standards will be discussed for each potential hazard.

Training materials: MSHA-produced job safety analysis materials for appropriate jobs
30 CFR Part 56
MSHA-produced "On-the-Job Training Modules" for appropriate jobs

I will demonstrate the job for you and explain what I am doing, why I'm doing it, the expected results of my action and the potential consequences of the action. The job steps will be explained in the order you will normally perform them. I will identify ways you may be hurt doing each step. I will also show you ways to avoid being hurt. Please ask questions at any stage or ask if the step needs to be repeated. I will be asking you to demonstrate and explain each step back to me at the end of the training.

You have been assigned to _____.
The first job step is _____.
You do this by _____.
You could be hurt if _____.
You can keep this from happening by _____.
The MSHA standards that apply to this step are _____.

The second (etc.) job step is _____.
You do this by _____.
You could be hurt if _____.
You can keep this from happening by _____.
The MSHA standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

I have been assigned to _____.
The first job step is _____.
I will do this by _____.
I could be hurt if _____.
I can keep this from happening by _____.

The second (etc.) job step is _____.
I do this by _____.
I could be hurt if _____.
I can keep this from happening by _____.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Instruction in the statutory rights of miners and their representatives §46.5(b)(5); §46.6(b)(5)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to inform the miner of his/her rights under the Federal Mine Health and Safety Act of 1977.

Training Materials: Federal Mine Safety and Health Act of 1977 ("the Act")
MSHA-produced booklet, "A Guide to Miners' Rights and Responsibilities Under the Federal Mine Safety and Health Act of 1977" (Revised 1999), (OT-2)

The Act gives individual miners and their representatives the following rights:

- The right to have a representative of the miners accompany Federal inspectors during inspections at a mine.
- The right to obtain an inspection of a mine where there are reasonable grounds to believe that an imminent danger, or a violation of the Act or a safety or health standard, exists.
- The right to be paid during certain periods of time when a mine or a part of a mine has been closed because of a withdrawal order.
- The right to be protected from discrimination based on the exercise of rights given by the Act.
- The right to receive safety and health training.
- The right to be informed of, and to participate in, enforcement and legal proceedings under the Act.

Discuss any questions or, if necessary, repeat any rights they were unable to follow.

Evaluation: A ten question true and false test. Return the corrected tests to the miner and discuss any misunderstandings or missed questions.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

A review and description of the line of authority of supervisors and miners' representatives and the responsibilities of such supervisors and miners' representatives §46.5(b)(6); §46.6(b)(6)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this course is to acquaint miners with the persons in authority over them, the persons who may represent them for purposes of the Mine Act, and their respective responsibilities. This knowledge is critical for the miner's correct response to instructions and warnings and for the exercise of their rights under the Mine Act.

Your immediate supervisor is _____ and he/she is responsible for _____.

In his/her absence, you will report to _____.

Your supervisor reports to _____ and he/she is responsible for _____.

Your miners' representative is _____; he/she can be contacted _____.

Introduce the miner to each respective supervisor or manager.

Training Materials: Company organizational chart

Evaluation: Have the miner name each supervisor and give a brief description of his/her responsibilities.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Introduction to company rules and procedures for reporting hazards §46.5(b)(7); §46.6(b)(7)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this course is to ensure that the miner knows how to report hazards he/she may encounter while working at the mine.

Training Materials: Copy of the mine reporting and safety procedures
30 CFR Part 50

If you should become aware of a potential hazard while you are working, you should do the following immediately. (List in order appropriate reporting steps including: to whom, what method, what kind of information, etc.) .

Evaluation: Have the miner repeat or list the steps to reporting a hazard. Correct any mistakes before ending the session.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Practice under the close supervision of a competent person §46.5(e); §46.6(d)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to monitor the practice and initial performance of miners when he/she is assigned to a new task. The miner must first receive hazard recognition training specific to the assigned task before practicing the task.

This practice training will be supervised and conducted by a person competent in performing the task. The competent person will be within sight and sound (hearing distance) of the miner during the training.

The miner will be observed for _____ .

Training Materials: MSHA-produced "On-the-Job Training Modules" for appropriate jobs

Evaluation: Practice will continue until the miner can repeatedly and successfully perform each of the job steps required to accomplish the task in the appropriate order.

If the miner performs a significant step incorrectly, or performs a potentially unsafe act or an operation that could endanger others working in same area, the miner will be signaled by _____ and the miner will be retrained in the step or procedure.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

The following courses will be presented no later than 60 days after the new miner or newly-hired experienced miner begins work at the mine:

Instruction and demonstration on the use, care, and maintenance of self-rescue and respiratory devices, if used at the mine §46.5(c)(1); §46.6(c)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to prepare the miner to use the appropriate self-rescue or respiratory device in an emergency or health hazard situation.

Training Materials: MSHA and/or manufacturers' manuals for the appropriate devices

When you are working in the _____ area, you need to wear a _____ respiratory device. You properly put the unit on by _____. The fit is then adjusted by _____. The proper filter for this unit is _____. The filter is replaced by _____. The filter should be replaced every _____.

In an emergency indicated by _____, you will (if the units are cached) indicate the location(s) and put on the _____ self-rescuer using the following steps, in order, _____. You will then evacuate the mine by _____.

Evaluation: Have each miner explain to you when the device is to be used. Then have him/her demonstrate the proper method for putting on the unit, demonstrate adjusting the unit for fit, describe the type of filter used, and demonstrate changing the filter. (In the case of a self-rescue device, have the miner describe the procedure for evacuating the hazardous area.)

Correct any errors and have the miner repeat the process until satisfactory performance is achieved.

30 CFR Part 46
Training Program Guide

New Miner Training (§46.5)
Newly-Employed Experienced Miner (§46.6)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

The following course will be given to new miners no later than 60 days after he/she begins work at the mine.

A review of first aid methods §46.5(c)(2)

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to provide a general overview of first methods.

Training Materials: Company first aid procedures
MSHA or other recognized first aid manual
Bandaging material
Splinting material
A sample of a first aid kit used at the mine
Stretcher

Review the steps an employee should follow if they are injured or encounter an injured person.

Where feasible, have the miner practice each of the first aid methods demonstrated in the class. Training will be prioritized based on the ability to save a life.

Review the fundamental types of first aid methods such as cardiopulmonary resuscitation (CPR), control of breathing, controlling bleeding, treating for shock, treating burns, immobilizing broken bones, etc.

Example:

If you injure yourself here at the mine and you are able to walk, you should _____.
If you injure yourself here at the mine and you are unable to walk, you should _____.
If you find an injured person you should _____.
The first aid kit(s) at this mine are located at _____.
Emergency medical help can be obtained by _____.
Some example accidents that may cause a person not to have a pulse are _____.
The method for determining if a person has a pulse is _____.
If they do not have a pulse you should _____.

Divide into pairs and check for each other's pulse. Let's practice performing one-person cardiopulmonary resuscitation (CPR) using this training mannequin.

Evaluation: Observe the miner practice sessions and make corrections as appropriate. At the completion of the class, have miners volunteer to serve as simulated victims. Describe an example of an accident and the type of injury the victim has received. Have small groups demonstrate on the volunteers the correct first aid procedures.

30 CFR Part 46
Training Program Guide

New Task Training (§46.7)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Health and safety aspects of the task assigned §46.7

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to identify safe work procedures for each major step of the miner's assigned task.

Job hazards will be addressed during job training. Potential hazards will be identified and explained for each job step. Explain how to avoid each hazard, in turn, and (where appropriate) ways to avoid the hazard will be discussed or demonstrated. Related health and safety standards will also be discussed for each potential hazard.

Training materials: MSHA-produced job safety analysis materials for appropriate jobs
30 CFR Part 56
Appropriate company-produced standard operating procedures

Demonstrate each job step in order.
Explain why the step is necessary.
Explain or demonstrate the expected result and the potential consequences of the action.
Identify ways the miner may be hurt doing each step.
Explain or demonstrate ways to avoid being hurt.
Have miner ask questions at any point or indicate if the step needs to be repeated.
Have the miner demonstrate and explain each step in the same fashion to the instructor.

You have been assigned to _____.
The first job step is _____.
You do this by _____.
You could be hurt if _____.
You can keep this from happening by _____.
The mandatory Federal health and safety standards that apply to this step are _____.

The second (etc.) job step is _____.
You do this by _____.
You could be hurt if _____.
You can keep this from happening by _____.
The mandatory Federal health and safety standards that apply to this step are _____.

Evaluation: I want you to demonstrate the job for me. I want you to perform each step, in order, and tell me what you are doing, why you are doing it, what you expect to happen, and any potential problems or dangers that might happen for each step.

I have been assigned to _____.
The first job step is _____.
I will do this by _____.
I could be hurt if _____.
I can keep this from happening by _____.

The second (etc.) job step is _____.
I do this by _____.
I could be hurt if _____.
I can keep this from happening by _____.

30 CFR Part 46
Training Program Guide

Annual Refresher Training (§46.8)

The following lesson plan can be used as a model to train miners for the indicated part 46 training.

Course Length: from _____ to _____

Competent Instructor(s) _____

The purpose of this training is to keep miners informed of conditions at the mine that present potential health or safety hazards. This training will address the working environment, equipment, mining processes, communications, and causes of accidents or near misses that have occurred. Ways to avoid or eliminate the causes of accidents or near misses will also be discussed or presented.

Training Materials: MSHA accident data
Company accident data
State accident data and safety materials
Applicable MSHA safety manuals and hazard awareness publications
Holmes Safety Bulletins
Input from miners or their representatives

We are planning to change the method that we _____. The new process will _____. Some things that you need to be aware of are _____. Do you see any other things that we need to consider or you would like to discuss?

During the last _____ our industry has experienced the following types and numbers of accidents _____. Is there anything we need to consider to prevent these types of accident trends from happening at our mine.

During the last _____ we have experienced the following accidents (near misses) _____. I will briefly describe the events and conditions of each accident (near miss) and we can discuss ways to prevent a recurrence.

Evaluation: Class participation and responses to questions and discussions.