

**MINE EMERGENCY RESPONSE  
DEVELOPMENT (MERD)**

**CONTEST GUIDELINES**

**June 2009**

## INTRODUCTION

Consistent with the Mine Improvement and New Emergency Response (MINER) Act, 30 C.F.R. § 49.60 requires mine rescue team members to participate in two local mine rescue contests each year. MSHA believes that mine rescue contests, including Mine Emergency Response Development (MERD) exercises, serve a vital role in achieving the purpose of the MINER Act to improve the safety and health of miners. Historically, mine rescue contests have served to assure that mine rescue teams are well-trained and capable of responding to mine emergencies.

A local mine rescue contest is training that provides an objective evaluation of demonstrated mine rescue team skills and can be a MERD exercise or a practical simulation exercise, such as a fire or explosion drill, where the team participates in simulated mine rescue team exercises and wears breathing apparatus.

In order to fulfill the requirements of a mine rescue contest for the purpose of 30 C.F.R. § 49.60, a MERD exercise must meet the following:

- Be conducted in the United States;
- Use MSHA-recognized rules;
- Use trained judges that time and evaluate the performance of each team, providing written feedback;
- Have a minimum of three teams;
- Have participants wear oxygen breathing apparatus and have other equipment necessary to work the problem;
- Have one or more problems conducted on one or more days; and
- Have a winner.

### **A MERD MUST BE CONDUCTED IN THE UNITED STATES**

For a MERD exercise to be considered a mine rescue contest, it must be conducted in the United States. While a mine rescue team may participate in an international MERD exercise outside of the United States, this participation will not be considered as participation in a local mine rescue contest.

### **A MERD MUST USE MSHA-RECOGNIZED RULES**

For a MERD exercise to be considered a mine rescue contest, it must use MSHA-recognized rules. MSHA recognizes rules developed by the National Contest Rules Committee. MSHA posts these recognized rules on its website. Other rules would need to be recognized by the District Manager for the district in which the MERD exercise is conducted.

MSHA expects MERD exercise rules submitted to the District Manager for recognition to address the following:

- **Establishing a Command Center (CC)**
  - A minimum of one member of the following entities, if applicable: Operator, MSHA, State, and Miners' Representative (role playing for any entity will be acceptable).
  - Written plans for rescue/recovery are developed and coordinated.
  - Team briefings/debriefings are coordinated.
- **Establishing a Fresh Air Base (FAB)**
  - Briefing officer is assigned.
  - Back-up team is identified.
  - Location/maps are available.
- **Working as a team under apparatus**
  - While traveling in any smoke, all team members must be on a lifeline.
  - In air clear of smoke, at least one team member must hold or be attached to a lifeline.
  - Team members cannot travel into or through water over waist deep (water cannot contact apparatus).
  - Air courses separated by stoppings must be examined on both sides (tied in) where accessible to assure the safety of the team.
  - Apparatus checks must be conducted at not more than 20-minute intervals.
  - A minimum of two team members will travel together at all times.
  - Members may explore in pairs (two members) providing:

- The members of each pair shall not be more than 25 feet apart and shall be in sight of each other;
  - The members of each pair shall be in constant communication with the tail captain who maintains constant communication with the FAB; and
  - Prior to advancing, the members of each pair will stop at each connecting crosscut and communication will be established with all team members and the fresh air base.
- **Communications**
  - Communications must be maintained between FAB and CC at all times.
  - Communications must be maintained between FAB and team members.
  - All team members or each group of team members will have a communication device.
- **Accuracy of markings on maps**
  - Team maps will use a legend consistent with the National Mine Rescue Contest Rules.
  - Items mapped must be located at the correct block in the entry, crosscut, and/or intersection.
- **Team effectiveness in solving problem**
  - This evaluation will be in accordance to the MERD exercise submitted to, and recognized by, the District Manager.
- **Team effectiveness in handling first responder activities**
  - This evaluation will be in accordance to the MERD exercise submitted to, and recognized by, the District Manager.
- **Team use of technology**
  - Teams must show proper use of their equipment (apparatus, gas detectors, fire fighting equipment, etc.).
- **Time taken to solve problem**
  - Judges will record the teams' working time to solve the MERD exercise problem.
- **A written examination**
  - The written examination will be according to the MERD exercise submitted to and recognized by the District Manager.
  - The list of source material for written examination questions will be included with the submitted rules.

MERD exercise rules submitted for recognition by the District Manager may also address the following:

- Work as a back-up team;
- Heat stress training;
- Hazards unique to mines;
- Building temporary stoppings and/or seals;

- Fire fighting training;
- Ventilation; and
- Using an airlock to rescue survivors.

### **A MERD MUST USE TRAINED JUDGES WHO TIME, EVALUATE AND PROVIDE WRITTEN FEEDBACK ON THE PERFORMANCE OF EACH TEAM**

For a MERD exercise to be considered a mine rescue contest, it must use trained judges who time and evaluate the performance of each team and provide written feedback. MSHA expects at least two trained judges be assigned to observe each team at a MERD exercise.

Competing while being timed, observed, and judged creates a stressful environment that provides an effective situation for evaluating and testing the team's level of knowledge and skill.

Judges need annual rules training in order to administer the MERD exercise fairly and provide appropriate and meaningful evaluations. MSHA provides annual judges' instructor (train-the-trainer) training at the National Mine Health and Safety Academy, with telecast to other remote locations. MSHA expects MERD organizers to provide additional training specific to the MERD exercise to the judges prior to the exercise. This may include a briefing of judges held prior to the exercise.

Judges do not have to be state or MSHA employees. However, MERD organizers are responsible for assuring that judges are properly trained annually, have the ability to evaluate team performance and certify contest results, and are available in a sufficient number to judge each team. MSHA expects that teams will learn from constructive feedback and their experiences during contests. Contest judges will evaluate each team to determine if the team demonstrates acceptable skills. A copy of the judges' evaluations will be submitted to the District Manager.

### **A MERD MUST HAVE A MINIMUM OF THREE TEAMS**

For a MERD exercise to be considered a mine rescue contest, it must have a minimum of three teams competing.

Each mine rescue team must consist of five members and one alternate who are fully qualified, trained, and equipped for providing emergency mine rescue service. For each participating team, at least five team members must be present and participate in the MERD exercise as a team. Mine rescue teams for anthracite coal mines, which have no electrical equipment at the face or working section, shall consist of at least three

members per team and one alternate. For these anthracite mines, at least three team members must be present and participate in the MERD exercise as a team. Consistent with National Mine Rescue Contest Rules, a maximum of ten members per team can receive credit for participation in a MERD exercise.

MSHA recognizes a team as participating in a MERD exercise when the team is present and competes even if a team member is missing. When a team member is not present at a MERD exercise, that team member will not receive training credit for contest participation. A team member must be under apparatus, or participate as an alternate or briefing officer to receive credit for participation and/or training.

Upon request from the District Manager, the operator shall provide information concerning each designated team's schedule of participation in upcoming local mine rescue contests, including a MERD exercise.

### **A MERD MUST HAVE PARTICIPANTS WEAR OXYGEN BREATHING APPARATUS**

For a MERD exercise to be considered a mine rescue contest, team members must wear an oxygen breathing apparatus. Team members must also have the necessary equipment to participate in the MERD exercise.

The ability to make effective decisions quickly, while under stress and wearing breathing apparatus, is a vital skill for each mine rescue team member to develop.

Apparatus should be worn consistent with the intended design of the problem. A team member must be under apparatus, or participate as an alternate or briefing officer, to receive credit for participation and/or training.

### **A MERD MUST HAVE ONE OR MORE PROBLEMS CONDUCTED ON ONE OR MORE DAYS**

For a MERD exercise to be considered a mine rescue contest, it must have one or more problems conducted on one or more days. MERD exercises conducted on consecutive days may be considered to meet the two-contest requirement, provided that each MERD exercise meets the criteria in 30 C.F.R. § 49.60.

### **A MERD MUST HAVE A WINNER**

For a MERD exercise to be considered a mine rescue contest, it must have a winner.

At each contest, judges should use the following criteria to evaluate team performance:

- Communication with team members;
- Time taken to solve problem;
- Accuracy of markings on maps;
- Team effectiveness in solving problem;
- Team effectiveness in handling first responder activities; and
- Team's use of technology.

Teams receive discounts for mistakes and at the conclusion of the contest receive an overall score. The team with the fewest discounts will be determined the winner.

MSHA may monitor MERD exercises. Teams participating in good faith in a MERD exercise will receive credit for participation in a mine rescue contest.