

Emergency Response Plan

<i>Company Name</i>	<i>Mine Name or Number</i>
<i>Date</i>	<i>DM Mine I.D. No.</i>

Detailed Description of Mine Location:

I. Mine Emergency Communications

1. An up-to-date list of emergency contact phone numbers will be posted in a conspicuous location in the mine office. The list, at a minimum, will contain telephone numbers for the Division of Mines (DM), the Mine Safety and Health Administration (MSHA), mine rescue team or teams assigned to the mine, appropriate mine management personnel, pertinent emergency services such as rescue squads and fire departments, local police agencies, and air ambulance.
2. The DM will be contacted promptly (within 15 minutes) after it has been determined that an accident, as defined in §45.1-161.8 of the *Coal Mine Safety Laws of Virginia*, has occurred.
3. Two independent communication methods from each working section to the surface will be maintained at all times.
4. Portable mine phones or other effective communication devices will be provided and maintained for the communication system at the end of the lifeline in the primary escapeway, at designated self-contained self-rescuer (SCSR) storage locations in the mine, and at all refuge alternatives, unless an approved wireless communication system is installed.
5. A functional test will be performed on all emergency communication devices at least weekly. Results of such tests will be recorded in a book maintained at the mine.

II. List of Next of Kin

1. A list of all employees including their name, phone number, and designated emergency contact with phone number and relationship will be maintained at the mine site.
2. Such information will be obtained upon employment, updated annually, and when personnel changes occur.

III. Waterlines

1. Waterlines will be installed parallel to the entire length of all belt conveyors. Waterlines may be installed in entries adjacent to the belt conveyor entry as long as outlets project into the belt conveyor entry.
2. The location of waterlines and cut-off valves will be noted on a map maintained at the mine.
3. Fire fighting outlets will be located at least every 300 feet and denoted by distinctive signs made of reflective material or other equally distinctive reflective indicators that are emphasized in all training exercises and drills.
4. A cut-off valve will be located inby and outby each belt drive installation. Such cut-off valves will be located no closer than 50 feet and no farther than 200 feet of the drive installation.
5. Fire fighting outlets will be substantially protected from damage to threads. All firefighting outlets will be tested at least annually to ensure proper operation.
6. At least 500 feet of fire fighting hose shall be stored at a strategic location immediately available at each belt drive; except that if the belt is less than 500 feet in length, the fire hose may be equal to the length of the belt. The fire fighting hose will be stored in an accessible location away from the drive installation. Water hose and connections will be protected from damage.
7. All fire fighting hose connections will be compatible with installed fire fighting valves. Nozzles will be compatible with fire fighting hose.

IV. Brattices

1. A numbering system beginning one crosscut inby the portal and extending to the loading point on the working sections will identify permanent stoppings installed adjacent to any primary or alternate escapeways.
2. Adequately sized numbers that are readily visible will be located on or at stoppings along the designated primary and alternate escapeways.
3. The location of all manddoors will be clearly marked with reflective signs or materials so that they will be easily identified by anyone traveling in the primary and alternate escapeways and in the entries on either side of the doors.
4. Manddoors will be located at least every fifth crosscut not to exceed 300 feet in seam heights less than 48 inches and 600 feet in seam heights 48 inches or higher.

V. Escapeways

1. An up-to-date map of the entire mine showing designated primary and alternate escapeway routes, outby refuge alternative locations, direction of airflow, stoppings, manddoors, overcasts, regulators, bottom of coal seam contours, and SCSR storage locations will be posted in a conspicuous location on the surface so all miners may be shown and instructed in the use of the primary and alternate escapeway routes.
2. An up-to-date map of the mine will be maintained in a designated location on each working section and areas where mechanized mining equipment is being installed or removed. The map will show the primary and alternate escapeway routes from the section to the surface (or bottom

of shaft or slope), direction of airflow, stoppings, man-doors, overcasts, undercasts, regulators, bottom of coal seam contours, SCSR storage locations and outby refuge alternative locations.

3. All miners will be instructed of any changes made in the mine involving the ventilation system and primary and alternate escapeway routes before traveling underground.
4. The designated escapeways will be reviewed with all newly employed miners. Each newly employed miner will travel the entire length of the primary escapeway within seven (7) days of employment.
5. A record of any instruction to miners regarding escapeway locations, changes to escapeway locations, and the ventilation system at the mine will be entered in a record book maintained at the mine.

VI. Lifelines

1. Continuous lifelines will be installed and maintained throughout the entire length of primary and alternate escapeways from the loading point of each working section and from locations where mechanized mining equipment is being installed or removed to the surface or to the bottom of shafts or slopes.
2. Lifelines will be installed and maintained in such a manner as to facilitate safe walking or crawling and with the miners being able to maintain continuous contact with the lifeline.
3. Lifelines will be equipped with directional indicators, signifying the route of escape, placed at intervals not to exceed 100 feet.
4. Lifelines will be identified with reflective material every 25 feet.
5. Lifelines will be provided with directional indicators aligned with manddoors in a stopping line.
6. Lifelines will be provided with indicators to identify locations of SCSR caches. When such caches are not immediately adjacent to the continuous lifeline, a branch lifeline will lead from the escapeway lifeline to the SCSR storage location.
7. A tether line will be stored at the end of the lifeline, in the primary escapeway, on each working section. Each tether line will be long enough to connect all miners normally assigned to that work area.

VII. Detectors

1. A detection instrument capable of determining the amount of oxygen, methane, and carbon monoxide in the mine atmosphere will be provided to each group of underground miners and to each person who works in a remote location. These instruments will remain operational during the miners' time underground.
2. Gas detection instruments will be calibrated at least monthly in accordance with manufacturers' recommendations.

VIII. Refuge Alternatives

1. All underground miners will be provided with post accident breathable air for a sustained period in a refuge alternative. A refuge alternative(s) will be maintained within 1000 feet of the nearest

working face. The outby refuge alternatives will be located in the primary or alternate escapeway not exceeding one (1) hour of walking or crawling time.

2. Refuge alternatives will not be placed within the direct line of sight of the working face. Also, where feasible, refuge alternatives will not be placed in areas directly across from, nor closer than 500 feet radially to belt drives, take-ups, transfer points, air compressors, explosive magazines, seals, entrances to abandoned areas, and fuel, oil, or other flammable or combustible material storage. Where there is a conflict between placing the refuge alternative within 1000 feet of the nearest working face and placing the refuge alternative no closer than 500 feet radially from the previously indicated areas, placement within 1000 feet of the nearest working face will take preference.

IX. SCSR Storage

1. Each miner working underground will have at least one additional SCSR (other than the SCSR kept within 25 feet) available on the working section. If miners travel on mantrips or other mobile equipment, then the mantrips will be provided with enough SCSRs to ensure that each miner is supplied one additional SCSR. SCSRs stored on mantrips or mobile equipment, which remains on the section, will suffice for the additional SCSR that must be supplied to each miner.
2. When the SCSRs, otherwise required by paragraph 1, are not adequate to provide enough oxygen for all persons to safely evacuate the mine, additional SCSRs will be provided in the primary and alternate escapeways. The location and number of SCSRs stored will be sufficient for the maximum number of miners in the mine and will be provided at intervals to ensure that each miner has a sufficient supply of SCSRs to reach the surface or bottom of shaft or slope.
3. Storage caches will be provided at conspicuous, readily accessible, safe locations.
4. SCSR storage caches will be established such that the distance between caches is a maximum of 30 minutes of walking or crawling time.
5. SCSR storage caches will be established for both primary and alternate escapeways.
6. Each SCSR storage cache and station for mantrips storing SCSRs will be conspicuously designated and direction signs made of reflective material will be posted in each intersection adjacent to each storage location.
7. SCSR storage caches will be located in protected areas and/or containers according to manufacturers' recommendations.
8. The location of SCSR storage caches will be noted on the mine map, which is maintained on the surface and mine emergency escapeway maps.
9. Each additional stored SCSR will provide one hour or more of protection and will be approved by MSHA. The SCSR kept on a person or within 25 feet may be another shorter duration approved type if an additional one hour unit is included in the section cache.

X. SCSR Training

1. Prior to any newly employed miner or visitor traveling underground, authorization by the operator is required. The operator will instruct and train such persons in the use and location

of self rescue devices. Visitors who make multiple visits within a one-year period are only required to receive such training on the first visit and annually thereafter.

2. The training will include instruction and demonstration in the use, care, and maintenance of the self-rescue devices used at the mine.
3. The training in the use of the self- rescue devices will include complete donning procedures in which:
 - a. Each person assumes a donning position.
 - b. Opens the device.
 - c. Activates the device.
 - d. Inserts the mouthpiece or expectations training mouthpiece.
 - e. Applies the nose clip.
 - f. Transfers from one unit to another.
4. A record of the training will be maintained at the mine with the date of the training, names of persons receiving the training, name of the person conducting the training, and the model of the self-rescue device(s) used in the training.

XI. Mine Emergency Evacuation and Fire Fighting Training

1. All miners on all shifts will be instructed in the following where applicable:
 - a. Procedures for evacuating the mine for mine emergencies that presents an imminent danger to miners due to fire, explosion, or gas or water inundation.
 - b. Scenarios of the various mine emergencies (i.e. fires, explosions, gas or water inundations) and best options for evacuation under each type of emergency condition. These options will include conditions in the mine that will require immediate donning of self-rescue devices.
 - c. Procedures for evacuating all miners not required for a mine emergency response.
 - d. Procedures for the rapid assembly and transportation of necessary miners, fire suppression equipment, and rescue apparatus to the scene of the mine emergency.
 - e. Operation of the fire suppression equipment available in the mine.
 - f. Location and use of firefighting equipment and materials.
 - g. Location of escapeways, exits, and routes of travel to the surface, including the location and use of the continuous directional lifeline or equivalent devices.
 - h. Locations, quantity, types, and use of stored SCSRs.
2. The mine emergency evacuation instruction and drills will be conducted by a person who is designated by the mine operator and who has the ability, training, knowledge, or experience to provide training to miners in their area of expertise. Persons conducting training will be able to effectively train and evaluate whether miners can successfully don the SCSR and transfer to additional SCSR devices.

3. Mine emergency evacuation drills will be held at periods of time to ensure that all miners participate in such evacuations at least quarterly.
4. During mine emergency evacuation drills, each miner shall travel the primary or alternate escapeway, from the working section or the miner's workstation, to the surface or the exits at the bottom of shaft or slope. An evacuation drill will not be conducted in the same escapeway as the immediately preceding drill. At a minimum this drill will include:
 - a. Physically locating the continuous directional lifelines or equivalent devices and stored SCSRs.
 - b. Hands-on training in the complete donning of all types of SCSRs used at the mine, which includes assuming a donning position, opening the device, activating the device, inserting the mouthpiece or expectations training mouthpiece, and putting on the nose clip.
 - c. Hands-on training in transferring between all self-rescue devices used at the mine.
 - d. Where miners ride transportation vehicles to travel the escapeway, the person conducting the drill will stop at the locations of SCSR storage caches or other appropriate locations and conduct drills consisting of actual travel on the lifeline and practice with the tether line connected to each miner.
5. A record of the training required in paragraph 4 (listed above) shall be recorded in a book maintained at the mine. The record will be maintained for one (1) year and will include the names of the participants in such drill, models of SCSRs used, and the type of emergency drill.
6. All miners on each working section will be familiar with the use of fire suppression equipment available and fire suppression devices installed on equipment and know the location of such fire suppression equipment and devices.

XII. Evacuation Procedures

1. Account for all miners on the section or located in that work area. Gather all miners at a strategic location.
2. SCSRs should be donned at the first sign of smoke or indication of carbon monoxide. Miners should don a self-rescue device when smoke, odor, fire, or any contaminated atmosphere is encountered. Enough SCSRs will be available to ensure that all miners can safely reach the surface.
3. Prepare to evacuate to the surface:
 - a. Collect SCSRs.
 - b. Collect the escapeway map, if applicable.
 - c. Collect tether line, if applicable.
 - d. Call outside, if possible, report the number of miners in the group and the evacuation route to be traveled.
 - e. Explain to the miners what is known about the emergency situation and which route is to be taken.
 - f. Stress the importance of staying together during the evacuation.
4. Travel by mantrip or utilize other equipment for transportation if at all possible.

5. Select the safest and quickest route to the surface depending on the conditions that exist in the mine:
 - a. The first choice is generally the travel way used normally to enter and exit the mine (usually this is the primary or alternate escapeway).
 - b. The second choice is generally the other escapeway not used normally to enter and exit the mine.
 - c. The third choice would be any other entry not discussed above.
6. If walking or crawling, regulate travel speed to accommodate the slower personnel in the group. Maintain contact with the lifeline, if applicable. Stay together. Monitor the physical conditions of other miners in the group.
7. Continuously monitor the mine atmosphere for oxygen deficiency, methane content, and elevated carbon monoxide levels. Keep in mind that:
 - a. 19.5 percent oxygen is the minimum required by law. Oxygen levels below 17 percent cause faster and deeper breathing and below 15 percent cause dizziness, buzzing noise, rapid pulse, headache, and blurred vision.
 - b. Methane is explosive from 5 percent to 15 percent.
 - c. Carbon monoxide levels above 600 PPM will give noticeable effects after one hour of exposure, and levels above 1500 PPM are dangerous for a one-hour exposure.
8. Contact the surface when communication is available. Give regular updates of location, conditions encountered, status of miners, and transportation means being utilized.
9. When SCSR storage caches are encountered, collect one for each miner in the group. Do not take more, as miners evacuating from other areas of the mine may also require SCSRs to reach the surface. SCSR storage caches are strategically located in order to provide sufficient oxygen for all miners to reach the surface.
10. Continue traveling the selected route unless the way is blocked by water, fire, or other conditions. In this case, retreat to the closest mandoor that leads to other escapeways and attempt to travel to the surface via other routes.
11. If traveling in smoke, maintain contact with the lifeline, attach tether line if available, and maintain communication with other miners. Check through mandoor on the evacuation route for smoke in the adjacent entries and, if clear, the miners should consider utilizing the alternate route.

XIII. Emergency Logistics (Complete with Mine Specific Information)

1. The following plans for logistics in case of an emergency will be maintained at the mine site. The plans will include at a minimum:
 - a. Description of security measures that will be implemented to control emergencies at the mine site.
 - b. Designated location of a command and communication center.
 - c. Designated location for staging and briefing mine rescue teams.

- d. Designated location for emergency medical services.
- e. Designated location and coordinates of nearest landing pad meeting air ambulance specifications
- f. Designated location for shelter and briefing of families.
- g. Strategy for dissemination of information and press releases.

XIV. Mine Emergency Response Drill

1. A Mine Emergency Response Drill (MERD) will be conducted annually, preferably in conjunction with a quarterly mine emergency evacuation drill or at other times selected by the operator.
2. The drill will consist of:
 - a. A simulated mine emergency that causes a deployment (simulated) of mine rescue teams.
 - b. Simulated entrapment of miners in the mine.
 - c. A review of notification procedures required by this plan.
 - d. Review and simulation of activation of the Emergency Logistics Plan described in the previous section.
3. The DM will be notified at least three (3) days prior to conducting the MERD. A DM representative may monitor the simulated drill and give feed back regarding application of the pertinent aspects of this plan.

XV. Emergency Injury Trauma Response

1. Injury trauma response supplies and equipment will be maintained in a single designated location on each working section and areas where mechanized mining units are being installed or removed.
2. Injury trauma response supplies will be stored on mobile equipment, either self-propelled or a suitable service trailer, and readily available for transport to an accident scene.
3. Emergency injury trauma response supplies stored on sections, at a minimum, will include the following:
 - a. Full compliment of required basic first aid and advanced first aid supplies and materials as required by law and regulation.
 - b. An x-ray translucent, air ambulance compatible backboard.
 - c. An approved portable oxygen administration unit.
 - d. An approved Automatic Electric Defibrillation Unit.
 - e. At least two lifting devices (as described in §45.1-161.115) with a combined total of at least 80 tons lifting capacity. Each individual lifting device shall have 20 tons or greater lifting capacity.
 - f. A lifting bar, sledge hammer, and chains

4. A method will be provided and readily available for safely transporting a patient and, if mine conditions allow, designed to accommodate the responder administering treatment including administration of CPR.
5. The location of emergency injury trauma response equipment shall be clearly marked by reflective signs from the loading point to the location of storage.
6. Emergency injury trauma response will be incorporated into mine emergency response drills provided in Section XIV of this plan.