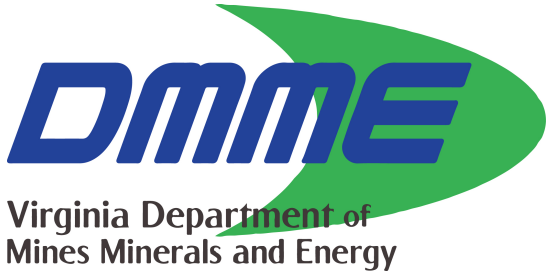
VIRGINIA DEPARTMENT OF MINES, MINERALS & ENERGY
DIVISION OF MINES



PREPARATION PLANT FOREMAN/ DOCK FOREMAN STUDY GUIDE

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INTRODUCTION

PREPARATION PLANT FOREMAN/ DOCK FOREMAN

This guide was written to assist mining personnel to prepare to be certified as a preparation plant foreman or a dock foreman. Both of these foremen must refer to the Coal Mine Safety Laws of Virginia and "Title 30, Code of Federal Regulations" for specific requirements that pertain to their respective areas of responsibility. This guide contains general mining laws and safety practices as required for these foremen.

It is recommended that instructors teaching a preparation plant or dock foreman class provide students with supplemental information including the Coal Mine Safety Laws of Virginia and Part 77, Title 30, Code of Federal Regulations.

Chapters 14.1, 14.2, and 14.4 of the Coal Mine Safety Laws of Virginia relate directly to the mining industry as associated with preparation plant and dock foreman, and applicants should be familiar with the general content of these laws. The purpose of the mine safety laws and safe mining practices is to promote the safety and health of those personnel employed at preparation plants and dock locations.

Within both State and Federal laws are found official definitions of common terms, qualifications and duties of preparation plant or dock foreman, examination and certification requirements for various tasks and specific standards for surface areas, preparation plants, docks and surface equipment.

The preparation plant foreman certification examination will include a first aid section with questions selected from the standardized "First Aid For Miners Study Guide".

The dock foreman certification examination will include a first aid section with questions selected from the "MSHA-First Aid, Safety Manual No. 3".

A preparation plant or dock foreman shall have a thorough knowledge of the mining laws, mining practices and general safety standards associated with their respective areas of responsibility.

PREPARATION PLANT/DOCK FOREMAN STUDY GUIDE

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SECTION 1 – DEFINITIONS

Accident – Means (i) a death of an individual at a mine; (ii) a serious personal injury; (iii) an entrapment of an individual for more than thirty minutes; (iv) an unplanned inundation of a mine by liquid or gas; (v) an unplanned ignition or explosion of gas or dust; (vi) an unplanned fire not extinguished within thirty minutes of discovery; (vii) an unplanned ignition or explosion of a blasting agent or an explosive; (viii) 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; (ix) a coal or rock outburst that causes withdrawal of miners or which disrupts regular mining activity for more than one hour; (x) 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 banks; (xi) damage to hoisting equipment in a shaft or slope which endangers an individual or which interferes with the use of the equipment for more than thirty minutes; and (xii) an event at a mine which causes death or bodily injury to an individual not at a mine at the time the event occurs.

§ 45.1-161.8

Active workings – Any place in a mine where miners are normally required to work or travel.

§ 45.1-161.8

Agent – Any person charged by the operator with responsibility for the operation of all or a part of a mine or the supervision of the miners in a mine.

§ 45.1-161.8

Approved – A device, apparatus, equipment, condition, method, course or practice approved in writing by the Chief or Director.

§ 45.1-161.8

Armored cable – A cable provided with a wrapping of metal, plastic, or other approved material.

§45.1-161.8

Authorized person – A person assigned by the operator or agent to perform a specific type of duty or duties or to be at a specific location or locations in the mine who is trained and has demonstrated the ability to perform such duty or duties safely and effectively.

§ 45.1-161.8

Berm – A pile or mound of material designated to provide a warning of over travel but is not designed to stop vehicle travel.

30 CFR 77.2(d)

Bin – A container for storage of bulk material.

4 VAC 25-125-10

Bunker – A vessel for the bulk storage of material; the lowermost portion is usually constructed in the form of a hopper.

4 VAC 25-125-10

Cable – A stranded conductor (single-conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable).

§ 45.1-161.8

Certified person – A person holding a valid certification from the Board of Coal Mining Examiners authorizing him to perform the task to which he is assigned.

§ 45.1-161.8

Circuit – A conducting part or a system of conducting parts through which an electric current is intended to flow.

§ 45.1-161.8

Circuit breaker – A device for interrupting a circuit between separable contacts under normal or abnormal conditions.

§ 45.1-161.8

Coal mine – A surface coal mine or an underground coal mine.

§ 45.1-161.8

Electrical grounding – To connect with the ground to make the earth part of the circuit.

30 CFR 77.2 (p)

Experienced surface miner – A person with more than six months experience working at a surface mine or the surface area of an underground mine.

§ 45.1-161.8

Federal Mine Safety Law – The Federal Mine Safety and Health Act of 1977 (P.L. 95-164) and regulations promulgated thereunder.

§ 45.1-161.8

Fuse – An over-current protective device with a circuit-opening fusible member directly heated and destroyed by the passage of over-current through it.

§ 45.1-161.8

Ground – A conducting connection between an electric circuit or equipment and earth or to some conducting body which serves in place of earth.

§ 45.1-161.8

Grounded – A connection to earth or to some connecting body which serves in place of the earth.

§ 45.1-161.8

Hazardous conditions – Conditions that are likely to cause death or serious personal injury to persons exposed to such conditions.

§ 45.1-161.8

Hopper – A vessel not primarily intended for storage into which materials are fed; usually constructed in the form of an inverted pyramid or cone terminating in an opening through which the material is discharged.

Imminent danger – The existence of any condition or practice in a mine which could reasonably be expected to cause death or serious personal injury before such condition or practice can be abated.

§ 45.1-161.8

Inactive mine – A mine (i) at which coal or minerals have not been excavated or processed, or work, other than examinations by a certified person or emergency work to preserve the mine, has not been performed at an underground mine for a period of thirty days, or at a surface mine for a period of sixty days, (ii) for which a valid license is in effect, and (iii) at which reclamation activities have not been completed.

§ 45.1-161.8

Interested person – Members of the Mine Safety Committee and other duly authorized representatives of the employees at a mine; Federal Mine Safety and Health Administration employees; mine inspectors; and, to the extent required by this Act, any other person.

§ 45.1-161.8

Mine – Any underground coal mine, surface coal mine, underground mineral mine, or surface mineral mine. Mines that are adjacent to each other and under the same management and which are administered as distinct units shall be considered as separate mines. A site shall not be a mine unless the coal or mineral extracted or excavated therefrom is offered for sale or exchange, or used for any other commercial purposes.

§ 45.1-161.8

Mine fire – An unplanned fire not extinguished within thirty minutes of discovery.

§ 45.1-161.8

Mine foreman – A person holding a valid certificate of qualification as a foreman duly issued by action of the Board of Coal Mining Examiners.

§ 45.1-161.8

Mine inspector – A public employee assigned by the Chief or the Director to make mine inspections as required by this Act, and other applicable laws.

§ 45.1-161.8

Mine Safety Act – or Act shall mean this chapter and Chapters 14.2 (§ 45.1-161.105 et.seq.) through 14.7 (§ 45.1-161.304 et. seq.) of this title, and shall include any regulations promulgated thereunder, where applicable.

§ 45.1-161.8

Miner – Any individual working in a mine.

§ 45.1-161.8

Operator – Any person who operates, controls or supervises a mine or any independent contractor performing services or construction at such mine.

§ 45.1-161.8

Rollover protection - A framework, safety canopy or similar protection for the operator when equipment overturns.

30 CFR 77.2 (w)

Safety line – A component consisting of a flexible line for connection to an anchorage at one end to hand vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and serves as a means for connecting other components of a personal fall arrest system to the anchorage.

4 VAC 25-125-10

Serious personal injury – Any injury, other than a sprain or strain, which has a reasonable potential to cause death or an injury which requires an admission to a hospital for twenty-four hours or more for medical treatment.

§ 45.1-161.8

Silo – A tall structure, usually cylindrical and of reinforced concrete construction, in which bulk material is stored and discharged through feeders that draw materials from the bottom.

4 VAC 25-125-10

Stockpile – Any accumulation of material formed to create a reserve for loading or other purposes.

4 VAC 25-125-10

Substation – An electrical installation containing generating or power-conversion equipment and associated electric equipment and parts, such as switchboards, switches, wiring, fuses, circuit breakers, compensators and transformers.

§ 45.1-161.8

Surface coal mine – (i) the pit and other active and inactive areas of surface extraction of coal; (ii) on-site preparation plants, shops, tipples, and related facilities appurtenant to the extraction and processing of coal; (iii) surface areas for the transportation and storage of coal extracted at the site; (iv) impoundments, retention dams, tailing ponds, and refuse disposal areas appurtenant to the extraction of coal from the site; (v) equipment, machinery, tools, and other property used in, or to be used in, the extraction at the site; (vi) private ways and roads appurtenant to such area; (vii) the areas used to prepare a site for surface coal extraction activities. A site shall commence being a surface coal mine upon the beginning of any site preparation activity other than exploratory drilling or other exploration activity that does not disturb the surface and shall cease to be a surface coal mine upon completion of initial reclamation activities.

§ 45.1-161.8

Underground coal mine – (i) the working face and other active and inactive areas of underground excavation of coal; (ii) underground passageways, shafts, slopes, drifts, inclines, and tunnels connected to such areas; (iii) on-site preparation plants, shops, tipples, and related facilities appurtenant to excavation and processing of coal; (iv) on-site surface areas for the transportation and storage of coal excavated at the site; (v) impoundment retention dams, and tailing ponds appurtenant to the excavation of coal from the site; (vi) equipment, machinery, tools, and other property, on the surface and underground, used in, or to be used in, the excavation of coal from the site; (vii) private ways and roads appurtenant to such area; (viii) the areas used to prepare for underground coal excavation activities; (ix) areas used for the drilling of vertical ventilation holes. A site shall commence being an underground coal mine upon the beginning of any site preparation activity other than exploratory drilling or other exploration activity, and shall cease to be an underground coal mine upon completion of initial reclamation activities.

§ 45.1-161.8

Work area – As used in Chapter 14.4 (§ 45.1-161.253 et seq.) of this title, means those areas of a mine which may pose a danger to miners at such areas.

§ 45.1-161.8

SECTION II – QUALIFICATIONS AND RESPONSIBILITIES OF THE PREPARATION PLANT/DOCK FOREMAN

A. GENERAL KNOWLEDGE OF LAW

Preparation Plant Foreman Must Prove He Is Qualified:

Each applicant for a preparation plant foreman certificate shall prove to the Board of coal Mining Examiners by written and oral examinations, that he has a thorough knowledge of coal mining surface activities and that he is otherwise qualified by law.

4 VAC 25-20-10

Dock Foreman Must Prove He Is Qualified:

Each applicant for a dock foreman certificate shall prove to the Board of Coal Mining Examiners by written and oral examinations, that he has a thorough knowledge of coal mining surface activities and that he is otherwise qualified by law.

4 VAC 25-20-10

Requirements For Qualifications:

A preparation plant foreman shall be at least 23 years of age, have at least five years of coal mining experience, one year shall be at a preparation plant, and score 80% or more on the required examination.

4 VAC 25-20-10

A dock foreman shall be at least 19 years of age, have at least one year dock work experience, and score 80% or more on the required examination.

4 VAC 25-20-10

First Aid and Gas Detection Examination:

All applicants for a preparation plant foreman and dock foreman certificate shall pass an examination in first aid and gas detection.

Preparation plant foreman first aid questions will be selected from the standardized "First Aid For Miners Study Guide".

Dock foreman first aid questions will be selected from the "MSHA – First Aid, Safety Manual No. 3."

4 VAC 25-20-10

Personnel Must Not Perform Duties That They Are Not Certified To Perform:

Mine operators, mine agents, preparation plant foremen, and dock foremen shall not allow any person to perform any duty requiring certification until he has been certified. Violating this provision is a misdemeanor (Class 1), and each day of operation without certification is a separate offense.

§ 45.1-161.30

Certification Can Be Revoked:

Complaint may be filed against the holder of a certificate for intoxication while on duty status, neglect of duty, violation of the coal mining laws of this State, use of any controlled substance without the prescription of a licensed physician or other sufficient cause.

§ 45.1-161.35

Knowledge Of And Compliance With State Law:

Preparation plant foremen and dock foremen must ensure that the mining laws of this State pertaining to his duties and health and safety are complied with at all times.

§ 45.1-161.14

Competency Of A Preparation Plant Foremen and a Dock Foremen:

The Board of Coal Mining Examiners requires a preparation plant foreman and a dock foreman to have the competency, skills, and knowledge in order to preserve and protect the health and safety of persons and property.

§ 45.1-161.28

Ensure Certified Assistant Takes Charge in Absence of Foreman:

The Preparation Plant/Dock Foreman shall ensure that a person certified as a preparation plant/dock foreman is in charge during his absence.

§ 45.1-161.30

Furnish Copies of The Mining Laws of Virginia To Employees:

The operator of every mine, or his agent, shall deliver a copy of the Coal Mine Safety Laws of Virginia to every miner upon the commencement of his employment at the mine, unless the miner is already in possession of a copy.

§ 45.1-161.97 B

Foreman Knowledge of Electricity:

The preparation plant/dock foreman should have general knowledge of electrical laws, dangers and safety precautions in regards to electricity. Also, the preparation plant/dock foreman should have some knowledge of electrical equipment in use at the mine site.

General Knowledge

B. SAFETY REPORTS AND RECORDS FOR PREPARATION PLANT/DOCK OPERATIONS:

Responsibility For Reports and Records For Preparation Plant/Dock Operations:

The preparation plant/dock foreman is responsible for records required for preparation plant/dock operations.

§ 45.1-161.257 C

Pre-Shift and On-Shift Examinations:

The results of these examinations shall be recorded in a mine record book by the certified person performing the examination.

On-shift examinations of the work area including surface installations, enclosures or other facilities in which coal is being handled, shall be conducted by certified persons once every production shift and at such other times or frequency as the Chief designates necessary for dangerous conditions.

§ 45.1-161.256 G

Pre-shift examinations shall be conducted by a certified person for certain dangerous conditions designated by the Chief.

§ 45.1-161.256 C

Fire Prevention Inspection:

Fire extinguishers shall be examined at least once every six months. The result of this examination shall be recorded on a permanent tag attached to the extinguisher.

§ 45.1-161.256 H

Daily Examination Record of Silt-Retaining Dams and Refuse Piles:

Silt-retaining dams and mine-refuse piles shall be inspected daily by an authorized person. The result of this examination shall be recorded in a mine record book by the certified person responsible for the examination.

§ 45.1-161.256 D

Records of Inspections:

All records of inspections shall be maintained at the mine site for at least one year.

§ 45.1-161.257 C

Electrical Wiring and Equipment:

Electrical equipment and wiring shall be inspected as often as necessary but at least once a month. The results of this examination shall be recorded in a mine record book by the certified person performing the examination.

§ 45.1-161.256 H

Weekly Examination of Water, Sediment or Slurry Impoundments:

Impoundments and impounding structures shall be examined at intervals not exceeding seven days and the results should be recorded promptly.

30 CFR 77.216 – 3 (1)(c)

Mobile Equipment On-Shift Examinations:

On-shift examinations of all mobile equipment shall be conducted by an authorized person.

§ 45.1-161.256 B

Loading and Haulage Equipment:

Mobile loading and haulage equipment shall be inspected by a competent person before such equipment is placed into operation.

30 CFR 77.1606 (a)

Maintenance of Training and Retraining Records of Mine Personnel:

Training certificates for each miner should be available at the mine office or site, and shall be kept for two years or for 60 days after termination of employment.

30 CFR 48.29 (c)

Training Plans:

Each operator shall have an approved training plan containing training for new miners, newly employed experienced miners, task training, annual refresher training, and hazard training.

30 CFR 48.3(a)

Posting Special Safety Rules:

Special safety rules shall be posted in a conspicuous place at the mine site where the rules can be seen by all miners or the operator shall furnish a printed copy of such rules to each miner.

§ 45.1-161.10

Pump Safety

In recent years accidents have occurred involving exploding fine coal recirculating pumps at preparation plants. These pumps had been cavitating due to line blockage and were running hot when the pumps were deenergized. Cold packing water then entered the pump housing and contacted the hot impellers and hot material inside the pump causing the water to convert to steam.

The area inside the pump housing was insufficient to contain the steam, therefore causing the pumps to explode. Steam requires a much larger area than water when confined in the same area. One gallon of water converted to steam requires a space of 10 feet by 16 feet by 16 feet to prevent an explosion.

Pump Safety Procedures and Practices

- All personnel working with and around pumps must understand the potential hazards and be effectively trained to operate and maintain pumps safely.

- Any pump losing prime can cavitate (run on air) and overheat in a relatively short period of time. This situation can result in an explosion of the pump, especially if cool liquids are suddenly introduced into the pump.

- When working with or around pumps, be alert to unusual sounds (such as marbles rolling around in the pump), steam or other evidence of heating, and any other indication of mechanical or operational problems.

- When a problem is detected, respond immediately and always deenergize at a safe location away from the pump; such as a remote control switch located on another floor in the plant.

- When installing start/stop switches for a pump, especially a stationary pump, install in a safe location away from the pump and in the most protective location for personnel should the pump explode.

- Always follow manufacturer's recommendations for start-up and shut down of pumps. This is especially critical for solids pumps. Providing a clean water bypass and flushing lines after shut down will prevent problems.

- Pumps should be provided with resistance thermal devices and automatic shut off timers to control overheating and potential explosion hazards.

- Where appropriate, pumps should be equipped with automatic floats and air release valves to improve operation and maintain prime in the pump.

- Regular maintenance inspections should be made of pumps to detect signs of structural fatigue such as cracks in the housing, damaged or missing bolts or other components.

- Permissible pumps should be inspected as required to ensure that permissibility standards are maintained.

SECTION II –Qualifications and Responsibilities of the Preparation Plant/Dock Foreman - QUESTIONS FOR REVIEW

1. Q. What action shall be taken by the preparation plant/dock foreman when a mine inspector declares a condition, practice or equipment defect to be an "imminent danger"?

   A. The preparation plant/dock foreman shall clear the area or remove equipment from service as identified by the mine inspector.

   § 45.1-161.87 C

2. Q. How shall an applicant for a preparation plant/dock foreman certificate prove to the Board or Chief that he/she is qualified by law?

   A. That he/she has a thorough knowledge of work activities associated with preparation plant/dock operations.

   § 45.1-161.39

3. Q. Who has the authority to revoke a preparation plant/dock foreman certificate?

   A. The Board of Coal Mining Examiners.

   § 45.1-161.35 A

4. Q. For what reasons shall a preparation plant/dock foreman certificate be revoked?

   A. Intoxication while on duty status, neglect of duty, violation of the coal mining laws of this State, use of any controlled substance without the prescription of a licensed physician, or other sufficient cause.

   § 45.1-161.35 A

5. Q. How much preparation plant experience is required for certification of a preparation plant foreman?

   A. Five years.

   4 VAC 25-20-10

6. Q. How much dock experience is required for certification of a dock foreman?

   A. One year.

   4 VAC 25-20-10

7. Q. What is the minimum percent required to pass a preparation plant/dock foreman examination?

   A. Eighty percent (80%).

   4 VAC 25-20-10

8. Q. Who is responsible for providing a safe and healthy work place during preparation plant operations?

   A. The preparation plant foreman.

   § 45.1-161.28

9. Q. What is the requirement of a preparation plant/dock foreman pertaining to the Coal Mine Safety Laws of Virginia?

   A. That the mining laws are fully complied with at all times.

   § 45.1-161.14 (B)

10. Q. How long shall records of examinations be maintained at the preparation plant/dock operations?

    A. One year

    § 45.1-161.257 (C)

11. Q. Who must take charge in the event that the preparation plant/dock foreman is absent?

    A. Another person certified as a preparation plant/dock foreman.

    § 45.1-161.30

12. Q. Who shall provide all employees with a copy of the Coal Mine Safety Laws of Virginia?

    A. The mine operator or his agent.

    § 45.1-161.97 (B)

13. Q. Who has the responsibility to ensure that all machinery is maintained in a safe working condition, that employees work in a safe manner and that all laws are complied with?

    A. The preparation plant/dock foreman, mine operator or his agent.

    § 45.1-161.14 (B)

14. Q. What action shall be taken by a preparation plant/dock foreman if a serious or fatal accident occurs?

A. The scene shall be left unchanged until an investigation has been conducted.

§ 45.1-161.78

15. Q. What action shall be taken by a preparation plant/dock foreman when a dangerous situation exists that cannot be corrected?

A. The workers shall be withdrawn from that area and the area dangered off.

§ 45.1-161.258 (B)

16. Q. What action shall be taken by a preparation plant/dock foreman should a mine inspector order withdrawal from an imminent danger situation?

A. Immediately withdraw as the mine inspector demands.

§ 45.1-161.87 C

17. Q. Who shall designate an "authorized person"?

A. The mine operator or operator's agent.

§ 45.1-161.8

18. Q. What events or conditions shall be reported immediately to the Chief or his designated representative?

A. Dangerous conditions which cannot be removed.
Accidents including serious personal injury or death.

§ 45.1-161.258 (A)

19. Q. Who is authorized to conduct examinations for methane in surface installations?

A. An authorized person that is certified in "gas detection".

§ 45.1-161.256 (G)

20. Q. Who is allowed to conduct on - shift examinations of all mobile equipment?

A. An "authorized person" designated by the mine operator or his agent.

§ 45.1-161.256 (B)

21. Q. Who shall conduct pre-shift examinations for certain dangerous conditions designated by the Chief?

A. A person certified as a preparation plant/dock foreman.

§ 45.1-161.256 (C)

22. Q. Who has the authority to require pre-shift examinations for certain hazardous conditions at surface facilities?

A. Chief, Division of Mines

§ 45.1-161.256 C

SECTION III – GENERAL MINE PRACTICES AND SAFETY

A preparation plant/dock foreman has an overall responsibility to provide reasonable safe work areas pursuant to State and Federal regulations.

General duties include a broad range of areas over an entire job site, and must address compliance with all applicable safety laws.

A preparation plant/dock foreman must provide guidance, leadership, and safety motivation to all workers. Safety attitudes and safety behaviors must be encouraged and endorsed by the foreman. Through his safety consciousness, work hazards are identified and eliminated to further protect the employees from death or injury.

A preparation plant/dock foreman must provide guidance and insure that all workers are familiar with the safety procedures for starting up and shutting down preparation plants.

A preparation plant/dock foreman must visually inspect stairways, platforms, walkways, grating and surface structures of work areas for signs of deterioration. If evidence indicates possible failure of the structure, then the structure should be repaired, replaced or dangered off.

If deterioration to the structure is questionable as to possible failure, the deteriorated area should be examined by a professional structural engineer to determine the stability of the structure in question.

Also, a preparation plant/dock foreman shall ensure that all machinery is maintained in safe working condition, that employees work in a safe manner and that all laws, safety rules and regulations are complied with.

General mining practices must be in compliance with applicable State and Federal laws and regulations, and the preparation plant/dock foreman must remain focused on the demanding task of promoting safety practices at all times.

Machinery Starting Signals:

Signals or other means shall be used to warn all persons of an operator's intention to operate equipment.

§ 45.1-161.269 (D)

Machinery and Equipment Guards:

The following shall be guarded and maintained adequately:

- Gears, sprockets, pulleys, fan blades or propellers, friction devices and couplings with protruding bolts or nuts;
- Shafting and projecting shaft ends that are within seven feet of floor or platform level;
- Belt, chain or rope drives that are within seven feet of floor or platform;
- Fly wheels where the fly wheels extend more than seven feet above the floor shall be guarded to a height of at least 7 feet;
- Repair pit guards shall be kept in place when the pits are not in use;
- Counterweights;
- Lighting and other electrical equipment that may cause shock hazards or personal injury.

A guard or safety device removed from any machine shall be replaced before the machine is put into operation.

45.1-161.273

Repairs to Machinery:

After making repairs to machinery, all guards and shields shall be replaced before machinery is put back into operation.

§ 45.1-161.273 (C)

Raising Machinery for Repairs:

Machinery raised for repairs shall be securely blocked before getting underneath.

30 CFR 77.405 (a)(b)

Safety Protection Equipment:

Protective equipment should be worn when workers are required to do welding, grinding, stone breaking, oxyacetylene cutting, etc.

§ 45.1-161.259 (C)

Blade Position of a Shovel, Loader, Dragline or Bulldozer When Not in Use:

The blade or bucket of a shovel, loader, dragline or bulldozer should be resting on the ground when not in use.

§ 45.1-161.227 (B)

Control of Dust:

Coal dust shall not be permitted to accumulate excessively on equipment or surface structures.

§ 45.1-161.278 (C)

Employees Working in a Hazardous Area:

Employees working in a hazardous area shall be removed immediately and the area dangered off until it is made safe.

§ 45.1-161.91

Safety Precautions When Danger of Falling Exists:

Any task exposing a worker to a possible fall requires the use of a safety belt and lifeline.

30 CFR 77.1710(g)

First Aid Training:

All operations should have working personnel qualified to administer emergency first aid until more advanced help is available.

§ 45.1-161.263

Head and Foot Protection:

Safety hats and safety-toed boots or shoes shall be worn when entering a preparation plant, dock area or other surface areas of a mine.

§ 45.1-161.259

Maintenance and Repair of Equipment:

All equipment should be stopped and blocked to prevent unexpected movement before attempting to perform any type lubrication, maintenance or repair work.

30 CFR 77.405(a)(b)

Travelways, Stairways, Platforms, Railways, and Walkways:

Handrails or guardrails and toeboards shall be provided on stairways, elevated platforms, floor openings and elevated runways.

§ 45.1-161.275

Oxygen and Acetylene Tank Storage:

Tanks shall be stored in racks designated for such purpose, with caps in place, standing upright, secured to prevent falling over and "No Smoking" signs posted.

§ 45.1-161.267 (L)

Belt and Conveyor Crossover Facilities:

When necessary to cross belts or conveyors, suitable crossing facilities shall be provided for safety.

§ 45.1-161.268

Mobile Equipment Examination:

Equipment shall be examined once each shift by an authorized person designated by the mine operator or his agent.

§ 45.1-161.256

Minimum Age Requirement In Or About A Coal Mine:

The minimum legal age for employment in or around a coal mine is eighteen.

§ 45.1-161.11

Duty of Preparation Plant/Dock Foreman in Relation to Employees:

All employees must be instructed about all company safety rules, safe work procedures, and the dangers relative to their particular job occupation.

§ 45.1-161.14 (A)

New Miner Training:

Each new miner shall receive training in accordance with Part 48, Code of Federal Regulations.

30 CFR 48.21

Scene of Serious or Fatal Accident:

The scene shall be left unchanged until an investigation has been completed.

§ 45.1-161.78

Starting Machinery Where People Work:

Signals should be given where people work to alert everyone that the machinery is ready to operate.

§ 45.1-161.269

Person Working Where Danger of Falling Exists:

A safety belt and lifeline should be worn when persons work, where danger of falling exists.

SHR-MM 10.6

Machinery Maintenance:

Oil, grease, and other combustible materials shall not be allowed to accumulate on machinery.

§ 45.1-161.247

Defective Machinery or Equipment:

Defective machinery or equipment shall be removed from service until repaired.

30 CFR 77.404

Stairways, Platforms, and Walkways:

Stairways, platforms, and walkways shall be kept free of oil, grease, ice, debris, or other possible stumbling and slipping hazards.

§ 45.1-161.275

Welders, Torches, and Other Flame Producing Tools:

Welders, torches and other flame producing tools shall not be used near oil, grease, coal dust or other combustible material.

SHR-MM 4.4

Company Safety Rules:

All company safety rules shall be posted at some conspicuous place or a printed copy provided to all miners.

§ 45.1-161.10

Certified Person in Charge:

A certified preparation plant/dock foreman shall be in charge at all times when employees are working.

§ 45.1-161.30

Employees Assigned to Work in a Hazardous Area:

No employee shall be allowed to work in a hazardous area unless he can communicate with others, can be seen or heard through sight or sound.

30 CFR 77.1700

Emergency Communication Equipment:

All surface operations shall maintain a communication system with the nearest point of medical assistance for use in an emergency.

30 CFR 77.1702

First Aid Training and Equipment:

All employees shall attend training and retraining classes and mine operators shall maintain an adequate supply of first aid equipment at each mine site.

30 CFR 48.12

Eye Protection:

All persons shall wear safety glasses, goggles, face shields or other suitable protective devices in all areas where an eye hazard exists.

§ 45.1-161.259

Snug-Fitting Clothing:

Snug-fitting clothing shall be worn around moving equipment parts and machinery.

§ 45.1-161.259

Serious Accidents or Fatalities:

All serious accidents and fatalities must be reported immediately to the Chief of the Division of Mines or his designated representative.

§ 45.1-161.78

Good Housekeeping:

Good housekeeping shall be practiced in and around all work areas.

§ 45.1-161.260

Intoxicating Beverages or Controlled Drugs:

Intoxicating beverages and drugs shall not be permitted or used around any work area. No person under the influence of alcohol or drugs shall be permitted on the job.

§ 45.1-161.12

Stairways, Elevated Platforms, and Elevated Runways:

Stairways, elevated platforms, and elevated runways shall be equipped with suitable handrails or guardrails.

45.1-161.275

Crossovers, Walkways, Ramps, Stairways, and Ladders:

Crossovers, elevated walkways, elevated ramps, stairways, and ladders shall be of substantial construction and toeboards shall be provided.

§ 45.1-161.275

Proximity of Mining to Gas and Oil Wells and Vertical Ventilation Holes:

Any operator who plans to remove coal or extend mining within 500 feet to any gas or oil well and vertical ventilation hole shall file with the Chief notice of mining to take place. The operator shall not extend or remove any coal in any mine closer than 200 feet to any gas or oil well or a vertical ventilation hole. A petition must be filed for approval of the Chief to conduct mining activities closer than 200 feet to a well or a vertical ventilation hole.

§ 45.1-161.292

General Provisions for Coal Stockpiles and on Stockpiles with Underlying Feeders.

A. Stockpile design and management shall be such that materials can be safely stored moved and handled.

B. Stockpiles shall be maintained so as not to become unstable. Any hazardous condition that is observed on or around such areas shall be immediately reported to the mine foreman in charge. Immediate action shall be taken to correct such conditions when encountered.

C. Stockpiles and stockpile dumping locations shall be visually examined by an authorized person prior to commencing work and as frequently as ground conditions make necessary. If evidence of ground failure is suspected at a stockpile dumping location, loads shall be dumped a safe distance back from the edge of the unstable area of the bank and pushed to the stockpile.

D. Sufficient illumination shall be provided to maintain safe working conditions. When visibility is insufficient, the operation of mobile equipment on stockpiles shall be suspended until conditions permit sufficient visibility.

E. All employees who work on or around stockpiles shall be trained on potential hazards. Hazard training shall also be provided for anyone other than employees that perform work associated with stockpiles, including but not limited to maintenance personnel or contractors.

4 VAC 25-125-20 (A-E)

Safety Precautions for Stockpiles with Underlying Feeders.

A. Telephone or equivalent two-way communications shall be established between equipment operators working on stockpiles and those persons who are operating conveyors, feeders, hoppers or load out facilities drawing from those stockpiles. Communications shall be maintained as necessary to keep such equipment operators advised of potential hazards during draw down activities.

B. No person shall travel on foot directly over areas of coal stockpiles where underlying feeders are in place, except:

(1) on an emergency basis, under direct supervision of a certified foreman while secured by a safety line with coal stockpile feeders deenergized, locked out, and suitably tagged.

C. No person shall operate equipment on a coal stockpile directly over areas where underlying coal feeders are in place without a Stockpile Safety Plan approved by the Chief. The plan shall be submitted by the mine operator or agent and when approved, shall be posted at the mine site. Before any person first works on stockpiles with underlying feeders, the approved plan shall be reviewed with that person. A record shall be maintained of such review for a period of 2 years.

D. The plan shall outline procedures to protect the health and safety of mobile equipment operators working on a stockpile or coal storage area directly over areas where underlying coal feeders are in place: Plan procedures shall be approved and shall include:

(1) A method of determining that no miners or equipment are in the affected area before starting stockpile underlying feeders;

(2) A method of determining the expected draw hole size in correlation to the stockpile size shall be provided;

(3) Safe procedures for breaking through bridged cavities;

(4) Contingencies for safe recovery of personnel should a piece of equipment become entrapped shall be developed and reviewed with all personnel during annual retraining;

(5) Safe procedures for travel by foot, should it be necessary during non-emergencies;

(6) Information on how the operator will comply with the requirements of subsection 4 VAC 25-125-30 E.

E. The following requirements will be met where mobile equipment operators work on stockpiles with underlying feeders:

(1) Beginning with the effective date of this regulation, all mobile equipment manually operated on coal stockpiles, where there is a potential of the equipment falling into a cavity, shall be equipped with an enclosed cab fitted with chemically tempered glass and a window support system. However glass certified to withstand 40 psi may be installed without a window support system provided that such glass is installed in a frame that provides equal strength and support. Other types of glass and window frames or support system may be used provided that an equal or greater amount of protection is afforded.

(2) Mobile equipment shall be equipped with an enclosed cab and doors and windows shall be closed and secured at all times the equipment is in operation on the stockpile.

(3) The equipment cab shall be provided with two self-contained self-rescuers. Equipment operators shall be trained in the donning and use of self rescuers.

(4) The equipment operator shall be provided with a remote control device capable of stopping the flow of coal from the feeder and coal coming onto the stockpile. Such device shall be tested weekly.

(5) Emergency lighting shall be provided for the mobile equipment operator.

(6) Warning signs shall be posted at the entrances to all coal stockpiles with underlying coal feeders.

(7) Underlying free flowing feeders shall be equipped with gates or other controls so that material cannot inadvertently discharge when the feeder is not activated.

(8) When pushing material over the crest of a stockpile or draw hole, the equipment shall be stopped a safe distance from the edge and other material will be used to bump the material over such area.

(9) When underlying feeders are used, the location of each draw off point will be clearly indicated by a marker suspended directly above the underlying feeder.

(10) Visual indicators shall be provided to show the mobile equipment operators which feeders are being used.

(11) The equipment shall have a primary two-way communications system and a back-up communication system supplied by an independent power source.

4 VAC 25-125-30 (A-E)

Storage Bins, Bunkers, Hoppers, and Silos.

Storage bins, bunkers, hoppers, and silos where unconsolidated bulk materials are stored, handled or transported shall be equipped and maintained as follows:

A. Equipped with mechanical devices or other effective means of handling materials so that during normal operations, persons are not required to enter or work where they are exposed to entrapment by caving or sliding of materials.

B. Equipped with supply and discharge operating controls. The controls shall be located so that spills or overruns will not endanger persons.

C. Where persons are required to move around or over any storage bin, bunker, hopper, or silo where unconsolidated bulk material is stored, handled or transported, suitable walkways or passageways shall be provided.

D. Ladders, platforms, or landings shall be provided for maintenance or inspection purposes where persons are required to enter any storage bin, bunker, hopper, or silo where unconsolidated bulk material is stored, handled or transported. No person shall enter the facility until the supply and discharge of materials has ceased and the supply and discharge equipment is deenergized, locked out and suitably tagged. Persons entering the facility shall wear a safety belt or harness equipped with a safety line. A second person, similarly equipped, shall be

stationed near where the safety line is fastened and shall constantly adjust it or keep it tight as needed, with minimum slack.

4 VAC 25-125-40 (A-D)

SECTION III – GENERAL MINE PRACTICES AND SAFETY – QUESTIONS FOR REVIEW

1. Q. What is an “agent”?

   A. Any person assigned by the operator with the responsibility for the operation of all or part of a mine or the supervision of the miners in the mine.

   § 45.1-161.8

2. Q. Who authorizes certified persons to hold a certificate to perform certain tasks?

   A. Board of Coal Mining Examiners

   § 45.1-161.30

3. Q. Who is an “operator”?

   A. Any person who operates, controls, or supervises a mine or any independent contractor performing services or construction at such mine.

   § 45.1-161.8

4. What parts of machinery and equipment shall be guarded?

   A. All exposed gears, belts, drive shafts, fans, etc., that are less than six feet overhead.

   § 45.1-161.273 (A-1)

5. Q. What shall a person do before getting on or departing equipment?

   A. Any person getting on or departing equipment should notify the equipment operator to assure the equipment is stopped.

   § 45.1-161.269 (D)

6. Q. How should diesel fuel be stored?

   A. In closed and marked containers.

   SHR-MM 4.4

7. Q. What shall be provided on all stairs, walkways, and elevated platforms?

   A. Hand or guardrails and toeboards.

   § 45.1-161.275

8. Q. What shall be done before starting machinery?

   A. Signals or other means shall be used to warn all persons.

§ 45.1-161.269 (D)

9. Q. What action shall be taken by the preparation plant/dock foreman when he discovers a fire that cannot be extinguished in thirty minutes?

   A. Notify the Chief or his designated representative immediately.

§ 45.1-161.258

10. Q. After making repairs to machinery, what shall be done?

    A. All guards and shields shall be replaced before machinery is placed into operation.

§ 45.1-161.273 (C)

11. Q. When any machinery is raised for repairs, what shall be done?

    A. It shall be securely blocked.

30 CFR 77.405 (b)

12. Q. When men are required to do welding, torch cutting, grinding, breaking stone, etc., what precaution shall be taken?

    A. Goggles, face shields, or other effective eye protection shall be worn.

§ 45.1-161.259

13. Q. How shall the bucket or blade of a shovel, dragline, bulldozer, or front-end loader be positioned when not operating?

    A. Resting on the ground.

§ 45.1-161.277 (B)

14. Q. What shall be done when you find men working in a hazardous area?

    A. Remove the men immediately, have the hazardous area roped off and marked with “Danger” signs until made safe.

§ 45.1-161.91

15. Q. What are the duties of a preparation plant/dock foreman?

    A. Ensure that all machinery is maintained in safe working condition, that employees work in a safe manner and that all laws are complied with.

§ 45.1-161.14 (A)

16. Q. What should be done before welding on tanks which have contained a flammable or combustible material?

    A. Fill with water or render non-explosive by other means.

§ 45.1-161.16.267

17. Q. Who requires certification of a preparation plant/dock foreman?

    A. Board of Coal Mining Examiners.

§ 45.1-161.268 (H)

18. Q. Should employees at preparation or dock operations be trained in first aid?

    A. Yes.

§ 45.1-161.263

19. Q. What protection for the head and feet shall be worn by all employees?

    A. Safety hard hats and safety-toe shoes.

§ 45.1-161.259 (A)

20. Q. How should preparation plants, shops, and machinery be kept?

    A. Clean and orderly.

§ 45.1-161.260

21. Q. What shall employees wear where a danger of falling exists?

    A. Safety belts and lifelines.

§ 45.1-161.260

22. Q. What shall be done before performing maintenance work on equipment?

    A. Equipment shall be stopped and blocked against motion.

30 CFR 77.405

23. Q. What shall be provided for employees when working around crushers?

    A. A safety belt and lifeline shall be provided when danger of falling exists.

SHR-MM 10.6

24. Q. What shall be done before working in a crusher?

    A. The crusher shall be stopped and incoming power shall be deenergized, locked out and tagged.

§ 45.1-161.280 (E)

25. Q. What shall not be permitted to accumulate excessively on equipment?

    A. Coal dust and other combustible material.

§ 45.1-161.278

26. Q. When men must enter material storage bins, tanks, etc., what safety precaution shall be taken?

    A. Only a man provided with a safety belt and lifeline shall enter such areas. Also, loading devices shall be deenergized, tagged and locked out so they cannot be operated while men are working inside of such areas and always be cautious of breathing hazards in such areas.

SHR-MM 10.6

27. Q. What shall be installed along conveyor belts and elevated runways where employees work or travel?

    A. Non-slip walkways, with handrails or guardrails.

§ 45.1-161.275 (A)

28. Q. How should floor openings be protected?

    A. Floor openings should be enclosed or guarded.

SHR-MM 11.12

29. Q. How should acetylene and oxygen cylinders be used and stored?

    A. Handle cylinders carefully. It is extremely dangerous to allow gas cylinders to fall or to be dropped. Cylinders should stand in a vertical position, well away from

sparks and open flames. Cylinders should be kept on a storage rack and secured in place.

§ 45.1-161.267

30. Q. What shall be worn when welding or performing work with oxyacetylene equipment?

A. Protective clothing and safety equipment.

SHR-MM 10.7

31. Q. How shall travelways and passageways be maintained?

A. Free of stumbling hazards.

§ 45.1-161.260

32. Q. When is it necessary to store materials near a walkway or roadway, how should they be stored?

A. Materials should be stored in a neat and orderly manner to prevent stumbling, slipping and falling hazards.

§ 45.1-161.260

33. Q. How shall all mobile equipment be maintained?

A. In a safe operating condition.

§ 45.1-161.268

34. Q. What shall be done before repairing or adjusting machinery?

A. Machinery should be stopped and blocked against movement.

30 CFR 77.405

35. Q. Where necessary to cross moving belts, conveyors, etc., what shall be provided?

A. Walkways, properly guarded and secured or other effective safe crossover facilities.

§ 45.1-161.268

36. Q. After making repairs to machinery, what shall be done before being put back into operation?

A. All guards and shields which have been removed shall be put back into position.

§ 45.1-161.268

37. Q. What safety equipment should be worn by jack hammer operators?

    A. Safety shoes, safety hats, eye and ear protection.

§ 45.1-161.259

38. Q. How should the employees of a mine be advised of company safety rules?

    A. The rules should be explained and the employees should be instructed at the place of employment by the surface foreman, and a copy of the rules be posted in a conspicuous location or a copy provided to all miners.

§ 45.1-161.10

39. Q. What is the minimum legal age of employment in or around coal mines?

    A. Eighteen (18) years.

§ 45.1-161.11

40. Q. What is the responsibility of the preparation plant/dock foreman in relation to new employees?

    A. To instruct each person in the dangers associated with his work.

SHR-MM 2.1

41. Q. How is an inexperienced person required to work until he is familiar with the dangers associated with his work?

    A. Under the direction of a preparation plant/dock foreman or other experienced worker until, in the judgment of the preparation plant/dock foreman, such person or persons can safely work alone.

SHR-MM 2.1

42. Q. After an injury, what should be done before the injured person is moved?

    A. First aid should be given.

§ 45.1-161.264

43. Q. How should the scene of a fatal accident be left?

    A. Unchanged until an investigation is completed.

§ 45.1-161.78

44. Q. Where should first aid equipment be kept?

    A. In accessible places and in a dry and sanitary condition.

§ 45.1-161.262

45. Q. What protection shall be provided for the eyes when grinding, cutting, welding or striking materials where particles may cause a hazard to the eyes?

    A. Proper protective equipment such as safety glasses, goggles, welding helmet, etc.

§ 45.1-161.259

46. Q. What is the danger of loose clothing?

    A. It may become caught in moving machinery.

§ 45.1-161.259

47. Q. What safety device should be worn by men working in or near the top of shafts or other deep excavations?

    A. Safety belt and lifeline.

SHR-MM 10.6

48. Q. What is a common cause of serious injuries to persons working with machinery?

    A. Getting on or off such equipment.

§ 45.1-161.268

49. Q. How should illumination and signal lights be maintained?

    A. In safe working condition.

30 CFR 77.207

50. Q. What protective devices should be used on gears, belts, and revolving parts of machinery?

    A. Guards.

§ 45.1-161.273

51. Q. What protection shall be observed when reassembling a machine with dangerous or moving parts?

    A. All guards and safety devices shall be replaced before operating.

§ 45.1-161.269

52. Q. What shall not be allowed to accumulate on machinery?

A. Oil, grease, and other combustible material.

§ 45.1-161.267

53. Q. What shall be done with defective machinery or equipment?

A. It shall be removed from service until repaired.

§ 45.1-161.268

54. Q. What protective devices shall be provided for openings in floors or ground that present a falling hazard?

A. Guards or covers.

§ 45.1-161.275

55. Q. How shall steps, landings, and platforms be maintained?

A. Free of oil, grease, ice, debris, coal and other stumbling hazards.

SHR-MM 11.8

56. Q. Where should welders and torches not be used?

A. Where oil, grease, coal dust or other combustible material is present.

§ 45.10161.269

57. Q. What should a truck driver do when starting a new work shift?

A. Check the mechanical condition of the truck especially the brakes, steering, lights, horn, tires, windshield wipers, and other safety devices.

SHR-MM 9.1

58. Q. What safety equipment shall be provided on all self-propelled mobile equipment?

A. Fire extinguisher.

§ 45.1-161.265

59. Q. When necessary to raise truck beds for repairs, what shall be done?

A. The raised bed must be securely blocked.

30 CFR 77.405

60. Q. When necessary to dump material at a stockpile, what shall be done?

    A. A timber of sufficient size should be placed so that the wheels of the truck cannot back over the edge of the stockpile, or a person should be stationed at the stockpile to direct the truck driver to prevent the accidental backing of trucks over the edge of the stockpile, or other effective means shall be used to prevent trucks from tipping over.

§ 45.1-161.276

61. Q. When necessary to park trucks or other mobile equipment, what should be done?

    A. Motor stopped, brakes set and parked in a manner to prevent accidental movement.

§ 45.1-161.277

62. Q. How shall truck brakes be maintained?

    A. Brakes of all trucks shall be maintained to stop such vehicle with a maximum load.

§ 45.1-161.268

63. Q. What equipment shall be provided on equipment when used at night?

    A. When equipment is used on night shifts they must be equipped with proper lights.

§ 45.1-161.269

64. Q. What shall be done with company safety rules?

    A. They shall be posted or each miner shall be provided a copy of such rules.

§ 45.1-161.10

65. Q. What communication system is required at all surface operations?

    A. All surface operations shall maintain a communication system with the nearest point of medical assistance for use in emergency.

30 CFR 77.1701 (a)

66. Q. What is the requirement concerning first aid and first aid equipment?

    A. All employees shall attend training and retraining classes, and mine operators shall maintain an adequate supply of first aid equipment at the mine site.

§ 45.1-161.263

67. Q. How shall travelways at surface installations be designed?

A. A safe means of access shall be provided and maintained to all work areas.

§ 45.1-161.275

68. Q. What shall be worn when eye hazards exist?

A. Safety glasses, goggles, face shields, or other suitable eye protection.

§ 45.1-161.258

69. Q. What action must be taken by the preparation plant/dock foreman or operator when a serious accident or fatality occurs?

A. Reported to the Chief of the Division of Mines or his designated representative by the quickest available means and secure the accident scene.

§ 45.1-161.258

70. Q. What is the requirements concerning the use of alcohol, narcotics, and drugs?

A. Intoxicating beverages and drugs shall not be permitted or used around any work area and any person under the influence of alcohol or drugs shall not be permitted on the mine site.

§ 45.1-161.35 (A)

71. Q. Where mobile equipment operators work on stockpiles with underlying feeders, what shall be provided to show the mobile equipment operators which feeders are being used?

A. Visual indicators of underlying feeder locations.

4 VAC 25-125-30

72.Q. Stockpiles and stockpile dumping locations shall be visually examined by an authorized person prior to:

A. Commencing work and as frequently as ground conditions make necessary.

4 VAC 25-125-20 (c)

73.Q. Where mobile equipment operators work on stockpiles with underlying feeders, the location of each draw off point will be clearly indicated by:

A. A marker suspended directly above the underlying feeder.

4 VAC 25-125-30(E9)

74.Q. Where mobile equipment operators work on stockpiles with underlying feeders, the equipment shall be equipped with an enclosed cab, doors and windows that shall be:

A. Closed and secured at all times that the equipment is in operation on the stockpile.

4 VAC 25-125-30(E2)

SECTION IV – ELECTRICITY

Overhead High-potential Power Lines

Overhead high-potential power lines shall be at least fifteen feet above the ground and twenty feet above driveways and haulage roads, shall be installed on insulators, and shall be supported and guarded to prevent contact with other circuits.

45.1-161-279

Surface Transmission Lines

Surface transmission lines shall be protected against short circuits and lightening.

45.1-161-279

Electric Wiring in Surface Buildings

Electric wiring in surface buildings shall be installed so as to prevent fires and contact hazards.

45.1-161-279

Deenergizing, Locks and Tags of Electrical Circuits

No electrical work shall be performed on low voltage, medium voltage or high voltage distribution circuits or equipment except by a certified person or by a person trained to perform electrical work under the direct supervision of a certified person.

Persons who perform electrical or mechanical work on such circuits or equipment connected to the circuits shall disconnect and lock and suitably tag the circuit prior to performing work on the power circuit or equipment. Locks and tags shall be removed only by the persons who installed them.

45.1-161.280(e)

Electrical Work, Qualified Person

A person who has been certified as a coal mine electrician (Repairman, Maintenance Foreman, Chief Electrician) by the state of Virginia that is deemed to be qualified by 30CFR, Code of Federal Regulations.

77.103 (a)(1)

Hand-held Power Tools

Hand-held power tools shall be equipped with controls requiring constant hand or finger pressure to operate the tools or shall be equipped with friction or other equivalent safety devices.

77.402

Danger Signs at Electrical Installations

Suitable danger signs shall be posted at all major electrical installations.

77.511

Shop and Other Equipment

Mechanically operated grinding wheels shall be equipped with safety washers and tool rests.

Eye shields or goggles shall be provided at stationary grinding wheels for the operators.

45.1-161.273

Electrical Wiring and Equipment

Electrical equipment and wiring shall be inspected as often as necessary but at least once a month. The results of this examination shall be recorded in a mine record book by the certified person performing the examination.

45.1-161.288(A)

SECTION IV – ELECTRICITY – QUESTIONS FOR REVIEW

1. Q. Prior to performing work on electrical equipment, the electrician shall:

   A. Deenergize, lock and suitably tag out the electrical power.

   45.1-161.280.E

2. Q. Electrical equipment, cables and power sources shall be maintained:

   A. In safe operating condition.

   (Surface Mine Foreman Guide)

3. Q. Electrical equipment, cables and power sources shall be maintained:

   A. Free from shock hazards.

   (Surface Mine Foreman Guide)

4. Q. What must a preparation plant foreman/dock foreman do if an employee reports having been shocked by a piece of electrical equipment?

   A. Remove the equipment from service until repaired.

   77.404 A.

5. Q. Mobile equipment including trucks, front-end loaders, bulldozers and portable welding units shall be equipped with:

   A. At least one (1) fire extinguisher.

   77.1109(c)(1)

6. Q. Electric motors, switches, lighting fixtures, and controls shall be protected by:

   A. Dust-tight construction.

   45.1-161.267(I)

7. Q. What shall not be allowed to accumulate on electrical equipment?

   A. Combustible materials, lubricants, flammable liquids.

   45.1-161.278C

8. Q. What safety device shall be on hand-held power tools?

   A. A stop switch designed to de-energize when hand or finger pressure is released.

   45.1-161.123(c)

9. Q. Mechanically operated grinding wheels shall be equipped with:

   A. Substantial retaining loads, safety washers and tool rests.

   45.1-161.273

10. Q. What eye protection shall be provided at stationary grinding wheels?

    A. Eye shields or goggles where there is a hazard or flying materials.

    45.1-161-273.D(3)

11. Q. A surface electrician is considered qualified to perform electrical work if he is:

    A. Qualified/certified as a coal mine electrician by the state of Virginia.

    77.103(a)(1)

12. Q. Circuit breakers and their auxiliary devices protecting high-voltage circuits shall be tested and examined

    A. Monthly.

    77.800-1(a)

13. Q. What is required before work is performed on power circuits and equipment?

    A. Power circuits and electrical equipment shall be de-energized.

    77.500

14. Q. Who can perform electrical work on electrical distribution circuits or equipment?

    A. Qualified person and certified as an electrical repairman by Board of Coal Mine Examiners.

    77.501

15. Q. When work is performed on electrical equipment, who is to disconnect the power to such equipment?

    A. Qualified person.

    77.501

16. Q. What must be posted at all major electrical installations?

A. Suitable danger signs.

77.511

SECTION V. – PRACTICAL EXERCISE

Student Training Guide
PREPARATION PLANT RECORD BOOK
Preparation Plant Examination

Preparation Plant examinations are a vital necessity to preserve the health and safety of all personnel that work at the Plant. The record keeping associated with such examinations are important to verify the examinations and hazardous conditions found and corrective action taken.

Work area examinations are an accepted safety practice in the mining industry and are required by law. These examinations are the primary means of identifying hazardous conditions that can be associated with the processing of coal. The purpose of pre-shift and on-shift examinations is to identify hazardous conditions which may affect the health and safety of miners. Hazardous conditions found during examinations must be corrected or "dangered off" to prevent injury to miners. A record of findings and actions must be recorded in the appropriate books provided.

What is a hazardous condition?

Hazardous condition means conditions that are likely to cause death or serious personal injury to persons exposed to such conditions.

Student Training Guide
Preparation Plant Foreman
Preparation Plant Record Book
Daily and On-Shift Examinations

Burton Johnson, preparation plant foreman, certification number 00000, employed at Beaver Creek Preparation Plant began the daily and on-shift examination at 7:00 A.M. and completed the on-shift examination at the end of the shift at 4:00 p.m. on Friday, November 19, 2004. The plant began operating at 9:00 a.m. Willie Smith is the mine operator.

Burton reviewed the third shift on-shift examination records and found that there were no hazardous conditions reported. Burton traveled to all work areas of the preparation plant, examined the clean coal silo and stockpile, clean coal draw off tunnel, thermal dryer, surge pile, haul roads and refuse dump areas.

Burton examined all surface installations used for coal storage and handling for methane and hazardous conditions. Burton found 1.7% methane at the bottom of the clean coal silo. Burton deenergized all electrical circuits and immediately started the exhaust fan at the bottom of the clean coal silo and the methane was reduced to 0.1%. Burton then examined the clean coal draw off tunnel and found 0.2% methane and excessive float coal dust along the entire length of the conveyor belt. Burton immediately assigned an employee to wash down the entire length of the draw off tunnel conveyor belt. Burton examined the raw coal silo and found 0.1% methane. Burton examined the thermal dryer area and found 0.4% methane.

All floors of the preparation plant were generally clean from cleaning performed on the third shift. Burton found 0.1% methane and excessive loose coal and rock on the walkway on the 8th floor. Burton immediately assigned an employee to remove the loose coal and rock from the walkway.

Burton then examined the clean coal surge pile and found 0.0% methane and the indicator lights for the draw off feeders were

inoperative. Burton immediately had the indicator lights for the surge pile repaired.

Burton traveled to the refuse areas and observed the refuse areas had berms installed and work areas were safe for operation. The aerial tram was operating properly.

Burton observed that the dump area haul roads needed immediate repairs that included scraping and repairing berms. Burton immediately assigned personnel to scrape the haul roads and repair the berms.

Burton returned to the mine office and started recording the results of his daily and on-shift examinations.

The equipment operators had conducted pre-shift and on-shift examinations of all mobile equipment. The triple 7-hauler operator reported the low air warning device was inoperative. Burton immediately assigned the mechanic to repair the low air warning device. The 980 end-loader operator reported that excessive grease and oil had accumulated on the engine of the end-loader. Burton immediately assigned the operator to clean and degrease the engine of the end-loader. All other mobile equipment was examined by equipment operators and reported safe for operation.

Use Indelible Pencil or Ink **Report shall be signed when made**

Student Training Guide
EXAMPLE PREPARATION PLANT
DAILY AND ON-SHIFT EXAMINER'S REPORT

Date of Examination 11-19-04 Facility or Area Examined Beaver Creek Prep. Plant
Time of Examination: From 7:00 (a.m. or xxx) To 4:00 (xxxx or p.m.)

Results of On-shift Examination

LOCATION	HAZARDOUS CONDITION	ACTION TAKEN	CH_4
Clean Coal Silo	1.7% CH4 detected at bottom of silo	Electrical circuits were de-energized and exhaust fan was started and CH4 was reduced to 0.1%	1.7% reduced to 0.1%
Clean Coal Draw Off Tunnel	Excessive float coal dust along belt	Area washed down	0.2 %
Raw Coal Silo			0.1 %
Thermal Dryer Area			
Prep. Plant	8th Floor walkway had excessive loose coal and rock	Loose coal and rock were removed from 8th floor	0.1 %
Surge Pile	Indicator lights for draw off feeders were inoperative	Indicator lights for draw off feeders were repaired	0.0 %
Dump Area Haul Roads and Berms	Haul roads needed scraping Berms needed repairs	Haul roads were scraped Berms were repaired	
* Work Areas *Surface Installations/Enclosures (where coal is handled or stored) *Stock Piles * Surge Piles *Draw Off Tunnels *Bins *Hoppers			

Condition of Mobile Equipment (Pre-operational check):

Type of Equipment	Hazardous Condition	Action Taken
Triple 7 Hauler	Low air warning device inoperative	Low air warning device repaired
980 End Loader	Excessive grease & oil accumulated on engine	Engine area cleaned and degreased

Conditions of Retraining Dams & Refuse Piles (Daily):

Conditions of Haul roads & Dump Areas (Daily):

(Optional) Dump area haul roads and berms had areas that needed immediate repairs. All haul roads were scraped and berms repaired.

Remarks: Preparation Plant started operation at 9:00 a.m.
Fire extinguishers were examined and will be examined within the next 6 months.

Signed By: Burton Johnson Date 11/19/04 Cert. # 00000.
Certified Foreman
Countersigned: Willie Smith .
Operator-Agent

Student Training Guide
Example Preparation Plant Foreman

Daily and On-Shift Examinations

- **Please read the exercise statement provided**
- **Identify hazardous conditions by marking the appropriate boxes**
- **Hazardous condition means conditions that are likely to cause death or serious personal injury to persons exposed to such conditions**
- **All conditions identified as hazardous conditions shall require corrective action to be taken**
- **Any conditions marked below that are NOT hazardous conditions will be discounted**
- **Complete the Daily and On-shift Preparation Plant examination record**

[X]	**1.7% methane detected at bottom of clean coal silo**
[X]	**Excessive float coal dust found along the conveyor belt at the clean coal draw off tunnel**
[ ]	**0.1 % methane found at raw coal silo**
[ ]	**0.4% methane was detected at the thermal dryer area**
[X]	**Excessive loose coal and rock was found on the walkway of the 8th floor of the preparation plant**
[ ]	**Aerial tram was operating properly**
[ ]	**Refuse areas had berms installed and work areas were safe for operation**
[X]	**Dump area haul roads and berms had several areas that needed immediate repairs**
[X]	**Triple 7 hauler low air warning device was inoperative**
[X]	**980 end-loader had excessive grease and oil accumulations on engine**

4 VAC 25-125-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise:

"Bin" means a container for storage of bulk material.

"Bunker" means a vessel for the bulk storage of material; the lowermost portion is usually constructed in the form of a hopper.

"Chief' means the Chief of the Division of Mines of the Department of Mines, Minerals and Energy.

"Division" means the Division of Mines of the Department of Mines, Minerals and Energy.

"Hopper" means a vessel not primarily intended for storage into which materials are fed; usually constructed in the form of an inverted pyramid or cone terminating in an opening through which the material is discharged.

Safety Line" means a component consisting of a ftexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline), and which serves

as a means for connecting other components of a personal fail arrest system to the anchorage.

"Silo" means a tall structure, usually cylindrical and of reinforced concrete construction, in which bulk material is stored and discharged through feeders that draw materials from the bottom.

"Stockpile" means any accumulation of material formed to create a reserve for loading or other purposes.

4 VAC 25-125-20. General Provisions for Coal Stockpiles and on Stockpiles with Underlying Feeders.

A. Stockpile design and management shall be such that materials can be safely stored and handled.

B. Stockpiles shall be maintained so as not to become unstable. Any hazardous condition that is observed on or around such areas shall be immediately reported to the mine foreman in charge. Immediate action shall be taken to correct such conditions when encountered.

C. Stockpiles and stockpile dumping locations shall be visually examined by an authorized person prior to work commencing and as frequently as ground conditions

Warrant. Where there is evidence of ground failure at a stockpile dumping location, loads shall be dumped a safe distance back from the edge of the unstable area of the bank and pushed to the stockpile.

D. Sufficient illumination shall be provided to maintain safe working conditions. When visibility is insufficient, the operation of mobile equipment on stockpiles shall be suspended until conditions permit sufficient visibility.

E. All employees who work on or around stockpiles shall be trained on potential hazards. Hazard training shall also be provided for anyone other than employees that perform work associated with stockpiles, including but not limited to maintenance personnel or contractors.

4 VAC 25-125-30. Safety Precautions for Stockpiles with Underlying Feeders.

A. Telephone or equivalent two-way communications shall be established between equipment operators working on stockpiles and those persons who are operating conveyors, feeders, hoppers or load out facilities drawing from those stockpiles. Communication shall be maintained as necessary to keep such equipment operators advised of potential hazards during draw down activities.

B. No person shall travel on foot directly over areas of coal stockpiles where underlying feeders are in place, except:

(1) in accordance with the provisions of subdivision D.5 of this section or;

(2) on an emergency basis, under direct supervision of a certified foreman while secured by a safety line with coal stockpile feeders de-energized, locked out, and suitably tagged.

C. No person shall operate equipment on a coal stockpile directly over areas where underlying coal feeders are in place without a Stockpile Safety Plan approved by the Chief. The plan shall be submitted by the mine operator or agent and when approved, shall be posted at the mine site. Before any person first works on stockpiles with underlying feeders, the approved plan shalll be reviewed with that person. A record shall be maintained of such review for a period of 2 years.

D. The plan shall outline procedures to protect the health and safety of mobile equipment operators working on a stockpile or coal storage area directly over areas where underlying coal feeders are in place: Plan procedures shall be approved and shall include:

(1) A method of determining that no miners or equipment are in the affected area before starting stockpile underlying feeders;

(2) A method of determining the expected draw hole size in correlation to the stockpile size shall be provided;

(3) Safe procedures for breaking through bridged cavities;

(4) Contingencies for safe recovery of personnel should a piece of equipment become entrapped shall be developed and reviewed with all personnel during annual retraining;

(5) Safe procedures for travel by foot, should it be necessary during non-emergencies;

(6) Information on how the operator will comply with the requirements of subsection 4 VAC 25-125-30 E.

E. The following requirements will be met where mobile equipment operators work on stockpiles with underlying feeders:

(I) Beginning with the effective date of this regulation, all mobile equipment manually operated on coal stockpiles, where there is a potential of the equipment falling into a cavity, shall be equipped with an enclosed cab fitted with chemically tempered glass and a window support system. However glass certified to withstand 40 psi may be installed without a window support system provided that such glass is installed in a frame that provides

equal strength and support. Other types of glass and window frames or support system may be used provided that an equal or greater amount of protection is afforded.

(2) Mobile equipment shall be equipped with an enclosed cab and doors and windows shall be closed and secured at all times the equipment is in operation on the stockpile.

(3) The equipment cab shall be provided with two self-contained self-rescuers. Equipment operators shall be trained in the donning and use of self rescuers.

(4) The equipment operator shall be provided with a remote control device capable of stopping the flow of coal from the feeder and coal coming onto the stockpile. Such device shall be tested weekly.

(5) Emergency lighting shall be provided for the mobile equipment operator.

(6) Warning signs shall be posted at the entrances to all coal stockpiles with underlying coal feeders.

(7) Underlying free flowing feeders shall be equipped with gates or other controls so that material cannot inadvertently discharge when the feeder is not activated.

(8) When pushing material over the crest of a stockpile or draw hole, the equipment shall be stopped a safe distance from the edge and other material will be used to bump the material over such area.

(9) When underlying feeders are used, the location of each draw off point will be clearly indicated by a marker suspended directly above the underlying feeder.

(10) Visual indicators shall be provided to show the mobile equipment operators which feeders are being used.

(II) The equipment shall have a primary two-way communications system and a back-up communication system supplied by an independent power source.

4 VAC 25-125-40. Storage bins, bunkers, hoppers, and silos.

Storage bins, bunkers, hoppers, and silos where unconsolidated bulk materials are stored, handled or transported shall be equipped and maintained as follows:

A. Equipped with mechanical devices or other effective means of handling materials so that during normal operations persons are not required to enter or work where they are exposed to entrapment by caving or sliding of materials.

B. Equipped with supply and discharge operating controls. The controls shall be located so that spills or overruns will not endanger persons.

C. Where persons are required to move around or over any storage bin, bunker, hopper, or silo where unconsolidated bulk material is stored, handled or transported, suitable walkways or passageways shall be provided.

D. Ladders, platforms, or landings shall be provided for maintenance or inspection purposes where persons are required to enter any storage bin, bunker, hopper, or silo where unconsolidated bulk material is stored, handled or transported. No person shall enter the facility until the supply and discharge of materials has ceased and the supply and discharge equipment is de-energized, locked out and suitably tagged. Persons entering the facility shall wear a safety belt or harness equipped with a safety line. A second person, similarly equipped, shall be stationed near where the safety line is fastened and shall constantly adjust it or keep it tight as needed, with minimum slack.