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HOUSE BILL NO. 2507

Offered January 12, 2005

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A *BILL to amend and reenact §§ 45.1-161.8, 45.1-161.12, 45.1-161.14, 45.1-161.20, 45.1-161.21, 45.1-161.33, 45.1-161.37, 45.1-161.63, 45.1-161.64, 45.1-161.80, 45.1-161.83, 45.1-161.97, 45.1-161.109, 45.1-161.115 through 45.1-161.118, 45.1-161.122, 45.1-161.124, 45.1-161.126, 45.1-161.135, 45.1-161.147, 45.1-161.154, 45.1-161.156, 45.1-161.163, 45.1-161.165, 45.1-161.172, 45.1-161.175, 45.1-161.176, 45.1-161.186, 45.1-161.194, 45.1-161.195, 45.1-161.198, 45.1-161.200, 45.1-161.207 through 45.1-161.210, 45.1-161.212, 45.1-161.216, 45.1-161.218, 45.1-161.219, 45.1-161.225, 45.1-161.228, 45.1-161.229, 45.1-161.236, 45.1-161.256, 45.1-161.257, 45.1-161.260, 45.1-161.264, 45.1-161.265, 45.1-161.270, 45.1-161.273, 45.1-161.276, 45.1-161.277, 45.1-161.278, 45.1-161.280, 45.1-161.282, 45.1-161.288, 45.1-222, and 45.1-224 of the Code of Virginia; to amend the Code of Virginia by adding sections numbered 45.1-161.233:1, 45.1-221.1, 45.1-224.1, and 45.1-234.1; and to repeal §§ 45.1-161.120, 45.1-161.213, 45.1-221, 45.1-223, and 45.1-225 of the Code of Virginia, relating to coal mining safety.*

Patron—Phillips

Referred to Committee on Agriculture, Chesapeake and Natural Resources

Be it enacted by the General Assembly of Virginia:

1. That §§ 45.1-161.8, 45.1-161.12, 45.1-161.14, 45.1-161.20, 45.1-161.21, 45.1-161.33, 45.1-161.37, 45.1-161.63, 45.1-161.64, 45.1-161.80, 45.1-161.83, 45.1-161.97, 45.1-161.109, 45.1-161.115 through 45.1-161.118, 45.1-161.122, 45.1-161.124, 45.1-161.126, 45.1-161.135, 45.1-161.147, 45.1-161.154, 45.1-161.156, 45.1-161.163, 45.1-161.165, 45.1-161.172, 45.1-161.175, 45.1-161.176, 45.1-161.186, 45.1-161.194, 45.1-161.195, 45.1-161.198, 45.1-161.200, 45.1-161.207 through 45.1-161.210, 45.1-161.212, 45.1-161.216, 45.1-161.218, 45.1-161.219, 45.1-161.225, 45.1-161.228, 45.1-161.229, 45.1-161.236, 45.1-161.256, 45.1-161.257, 45.1-161.260, 45.1-161.264, 45.1-161.265, 45.1-161.270, 45.1-161.273, 45.1-161.276, 45.1-161.277, 45.1-161.278, 45.1-161.280, 45.1-161.282, 45.1-161.288, 45.1-222, and 45.1-224 of the Code of Virginia are amended and reenacted and that the Code of Virginia is amended by adding sections numbered 45.1-161.233:1, 45.1-221.1, 45.1-224.1, and 45.1-234.1 as follows:

§ 45.1-161.8. Definitions.

As used in this chapter and in Chapters 14.3 (§ 45.1-161.105 et seq.) and 14.4 (§ 45.1-161.253 et seq.) of this title, unless the context requires a different meaning:

"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~~ 30 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~~ 30 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 bank; (xi) damage to hoisting equipment in a shaft or slope which endangers an individual or which interferes with use of the equipment for more than ~~thirty~~ 30 minutes; (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; and (xiii) the unintentional fall of highwall that entraps equipment for more than ~~thirty~~ 30 minutes.

"Active areas" means all places in a mine that are ventilated, if underground, and examined regularly.

"Active workings" means any place in a mine where miners are normally required to work or travel.

"Agent" means 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.

"Approved" means a device, apparatus, equipment, condition, method, course or practice approved in writing by the Chief or Director.

"Authorized person" means 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.

"Auxiliary fan" means a supplemental underground fan installed to increase the volume of air to a

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59 *specified location for the purpose of controlling dust, methane, or air quality.*

60 "Blower fan" means a fan with tubing used to direct part of a particular circuit of air to a working
61 place.

62 "Booster fan" means an underground fan installed in conjunction with a main fan to increase the
63 volume of air in one or more circuits.

64 "Cable" means a stranded conductor (single-conductor cable) or a combination of conductors
65 insulated from one another (multiple-conductor cable).

66 "Certified person" means a person holding a valid certificate from the Board of Coal Mining
67 Examiners authorizing him to perform the task to which he is assigned.

68 "Circuit" means a conducting part or a system of conducting parts through which an electric current
69 is intended to flow.

70 "Circuit breaker" means a device for interrupting a circuit between separable contacts under normal
71 or abnormal conditions.

72 "Coal mine" means a surface coal mine or an underground coal mine.

73 "Coal Mine Safety Act" or "Act" shall mean this chapter and Chapters 14.3 (§ 45.1-161.105 et seq.)
74 and 14.4 (§ 45.1-161.253 et seq.) of this title, and shall include any regulations promulgated thereunder,
75 where applicable.

76 "Cross entry" means any entry or set of entries, turned from main entries, from which room entries
77 are turned.

78 "Experienced surface miner" means a person with more than six months of experience working at a
79 surface mine or the surface area of an underground mine.

80 "Experienced underground miner" means a person with more than six months of underground mining
81 experience.

82 "Federal mine safety law" means the Federal Mine Safety and Health Act of 1977 (P.L. 95-164), and
83 regulations promulgated thereunder.

84 "Fuse" means an overcurrent protective device with a circuit-opening fusible member directly heated
85 and destroyed by the passage of overcurrent through it.

86 "Ground" means a conducting connection between an electric circuit or equipment and earth or to
87 some conducting body which serves in place of earth.

88 "Grounded" means connected to earth or to some connecting body which serves in place of the earth.

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

91 "Imminent danger" means the existence of any condition or practice in a mine which could
92 reasonably be expected to cause death or serious personal injury before such condition or practice can
93 be abated.

94 "Inactive mine" means a mine (i) at which coal or minerals have not been excavated or processed, or
95 work, other than examinations by a certified person or emergency work to preserve the mine, has not
96 been performed at an underground mine for a period of ~~thirty~~ 30 days, or at a surface mine for a period
97 of ~~sixty~~ 60 days, (ii) for which a valid license is in effect, and (iii) at which reclamation activities have
98 not been completed.

99 "Inexperienced underground miner" means a person with less than six months of underground mining
100 experience.

101 "Intake air" means air that has not passed through the last active working place of the split of any
102 working section or any worked-out area whether pillared or nonpillared, and by analysis contains not
103 less than nineteen and one-half percent oxygen nor more than one-half of one percent of carbon dioxide,
104 nor any hazardous quantities of flammable gas nor any harmful amounts of poisonous gas.

105 "Interested persons" means members of the Mine Safety Committee and other duly authorized
106 representatives of the employees at a mine; federal Mine Safety and Health Administration employees;
107 mine inspectors; and, to the extent required by this Act, any other person.

108 "Main entry" means the principal entry or set of entries driven through the coal bed or mineral
109 deposit from which cross entries, room entries, or rooms are turned.

110 "Mine" means any underground coal mine or surface coal mine. Mines that are adjacent to each other
111 and under the same management and which are administered as distinct units shall be considered as
112 separate mines. A site shall not be a mine unless the coal extracted or excavated therefrom is offered for
113 sale or exchange, or used for any other commercial purposes. *The area in which coal is excavated under*
114 *an exemption to the permitting requirements of § 45.1-234 shall not be a mine.*

115 "Mine fire" means an unplanned fire not extinguished within ~~thirty~~ 30 minutes of discovery.

116 "Mine foreman" means a person holding a valid certificate of qualification as a foreman duly issued
117 by action of the Board of Coal Mining Examiners.

118 "Mine inspector" means a public employee assigned by the Chief or the Director to make mine
119 inspections as required by this Act, and other applicable laws.

120 "Miner" means any individual working in a mine.

"Mineral" means clay, stone, sand, gravel, metalliferous and nonmetalliferous ores, and any other solid material or substance of commercial value excavated in solid form from natural deposits on or in the earth, exclusive of coal and those minerals which occur naturally in liquid or gaseous form.

"Monthly" means, unless otherwise stated, to have occurred any time during the period of the first through the last day of a calendar month.

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

"Panel entry" means a room entry.

"Permissible" means a device, process, or equipment or method heretofore or hereafter classified by such term by the Mine Safety and Health Administration, when such classification is adopted by the Chief or the Director, and includes, unless otherwise herein expressly stated, all requirements, restrictions, exceptions, limitations, and conditions attached to such classification by the Administration.

"Return air" means air that has passed through the last active working place on each split, or air that has passed through worked-out areas, whether pillared or nonpillared.

"Room entry" means any entry or set of entries from which rooms are turned.

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

"Substation" means 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.

"Surface coal mine" means (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 of coal from the site; (vi) private ways and roads appurtenant to such area; and (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.

"Travel way" means a passage, walk or way regularly used and designated for persons to go from one place to another.

"Underground coal mine" means (i) the working face and other active and inactive areas of underground excavation of coal; (ii) underground travel ways, shafts, slopes, drifts, inclines, and tunnels connected to such areas; (iii) on-site preparation plants, shops, tipples and related facilities appurtenant to the excavation and processing of coal; (iv) on-site surface areas for the transportation and storage of coal excavated at the site; (v) impoundments, 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 a site for underground coal excavation activities; and (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.

"Weekly" means, unless otherwise stated, to have occurred any time during the period of Sunday through Saturday of a calendar week.

"Work area," as used in Chapter 14.4 (§ 45.1-161.253 et seq.) of this title, means those areas of a surface coal mine in production or being prepared for production and those areas of the mine which may pose a danger to miners at such areas.

"Worked-out area" means an area where underground coal mining has been completed, whether pillared or nonpillared, excluding developing entries, return air courses and intake air courses.

"Working face" means any place in a mine in which work of extracting coal from its natural deposit in the earth is performed during the mining cycle.

"Working place" means the area of an underground mine in by the last open crosscut.

"Working section" means all areas from the loading point of a section to and including the working faces.

§ 45.1-161.12. Prohibited acts by miners or other persons; miners to comply with law.

A. No miner or other person shall (i) knowingly damage any shaft, lamp, instrument, air course, or brattice or obstruct airways; (ii) carry in a mine any intoxicating liquors or controlled drugs without the prescription of a licensed physician; (iii) disturb any part of the machinery or appliances in a mine; (iv)

182 open a door used for directing ventilation and fail to close it again; (v) enter any part of a mine against
183 caution; or (vi) disobey any order issued pursuant to the provisions of this Act.

184 B. Each miner at any mine shall comply fully with the provisions of this Act and other mining laws
185 of this Commonwealth that pertain to his duties.

186 C. *Any individual shall, upon the order of the Chief, complete training that addresses the subject of*
187 *any violation issued to the individual as a condition for abatement of the violation.*

188 § 45.1-161.14. Notifying miners of violations; compliance with Act.

189 A. The operator and his agent shall cooperate with the mine foreman and other officials in the
190 discharge of their duties as required by this Act, and shall direct that the mine foreman and all other
191 miners employed at the mine comply with all provisions of this Act, especially when his attention is
192 called to any violation of this Act by the Chief, the Director, or a mine inspector.

193 B. The operator of any mine or his agent shall operate his mines in full conformity with this Act and
194 any other mining law of the Commonwealth at all times. This requirement shall not relieve any other
195 person subject to the provisions of this Act from his duty to comply with the requirements of this Act.

196 C. Nothing in this Act shall be construed to relieve an operator or his agent from the duty imposed
197 at common law to secure the reasonable safety of their employees.

198 D. No operator, agent, or certified person shall knowingly permit any person to work in any part of a
199 mine in violation of written instructions issued by a mine inspector pursuant to this Act.

200 E. *The operator or his agent shall fully comply with any action plan required by the Chief to*
201 *address hazardous conditions or practices.*

202 § 45.1-161.20. Qualifications of inspectors of coal mines.

203 A. Each mine inspector conducting inspections of *underground* coal mines shall have a thorough
204 knowledge of the various systems of working and ventilating underground coal mines ~~and working~~
205 ~~surface coal mines~~; the nature and properties of mine gases and methods for their detection and control;
206 the control of mine roof and ground control; methods of rescue and recovery work in mine disasters;
207 application of electricity and mechanical loading in mining operations; equipment and explosives used in
208 mining; methods for preventing gas and dust explosions in mines; and mine haulage.

209 B. *Each mine inspector conducting inspections of surface coal mines shall have a thorough*
210 *knowledge of the various systems of working surface coal mines; the nature and properties of mine*
211 *gases and methods of their detection and control; ground control; methods of rescue and recovery work*
212 *in surface mine disasters; application of electricity and mechanical loading in mining operations;*
213 *equipment and explosives used in mining; methods for preventing gas and dust explosions in surface*
214 *facilities on mine property; and mine haulage.*

215 § 45.1-161.21. Duties of the Chief.

216 A. The Chief shall supervise execution and enforcement of all laws pertaining to the health and
217 safety of persons employed within or at coal mines within the Commonwealth, and the protection of
218 property used in connection therewith, and to perform all other duties required pursuant to this Act.

219 B. The Chief shall keep a record of all inspections of coal mines made by him and the mine
220 inspectors. The Chief shall make a comprehensive report to the Director. The Chief shall also keep a
221 permanent record thereof properly indexed, which record shall at all times be open to inspection by any
222 citizen of the Commonwealth.

223 C. *The Chief is authorized to compel individuals to complete training that addresses the subject of a*
224 *violation issued to the individual as a condition for abatement of the violation.*

225 D. *The Chief is authorized to require operators to submit for approval action plans to address*
226 *hazardous conditions or practices.*

227 E. *For the purpose of investigating (i) an accident or (ii) a willful act resulting in a notice of*
228 *violation or closure order, the Chief shall have the power to compel the attendance of witnesses and to*
229 *administer oaths or affirmations.*

230 § 45.1-161.33. Reciprocal acceptances of other certifications.

231 A. In lieu of an examination prescribed by law or regulation, the Board of Coal Mining Examiners
232 may issue to any person holding a certificate issued by another state a certificate permitting him to
233 perform similar tasks in ~~this~~ the Commonwealth, provided that (i) the Board finds that the requirements
234 for certification in such state are substantially equivalent to those of Virginia and (ii) holders of
235 certificates issued by the Board are permitted to perform similar tasks in such state, and obtain similar
236 certification from such state if required, upon presentation of the certificate issued by the Board and
237 without additional testing, training, or other requirements not directly related to program administration.

238 B. *If the issuing authority in another state has revoked or suspended a certificate of a person who*
239 *holds a similar Virginia certificate issued pursuant to this section, the person shall notify the Chief of*
240 *such action by the other state within 10 days of such action. The Chief shall schedule a hearing of the*
241 *Board of Coal Mining Examiners to determine whether his Virginia certificate should be revoked or*
242 *suspended.*

243 § 45.1-161.37. General coal miner certification.

A. Every person commencing work in a coal mine in Virginia subsequent to January 1, 1996, shall hold a general coal miner certificate issued by the Board of Coal Mining Examiners. Any person who has been employed to work in a coal mine in Virginia prior to that date may, but shall not be required to, hold a general coal miner certificate.

B. Each applicant for a general coal miner certificate shall prove to the Board that he has knowledge of first aid practices and has a general working knowledge of the provisions of this Act, and applicable regulations, pertaining to coal mining health and safety. *Each applicant shall have completed the new miner training requirements of 30 CFR Part 48 or submit proof of at least one year of experience in a coal mine prior to issuance of the General Coal Miner certification.*

§ 45.1-161.63. Notices to Department; resumption of mining following discontinuance.

A. The operator or his agent shall send notice of intent to discontinue the working of an underground mine for a period of ~~thirty~~ 30 days or a surface mine for a period of ~~sixty~~ 60 days to the Department at least ~~ten~~ 10 days prior to discontinuing the working of a mine with such intent, or at any time a mine becomes an inactive mine. Unless examinations of the mine are being conducted during the period of discontinued use, all surface openings to the discontinued underground mine shall be secured against unauthorized entrance when the activities are discontinued for ~~thirty~~ 30 days or longer. Danger signs shall be posted at each secured entrance.

B. The operator, or his agent, shall send to the Department ~~ten~~ 10 days' prior notice of intent to resume the working of an inactive mine. The ~~working~~ production of coal at such mine shall not resume until a mine inspector has inspected the mine and approved it for resumption of production activities.

C. Emergency actions necessary to preserve a mine may be undertaken without the prior notice of intent and advance inspection required by subsection B. In such event, a mine foreman shall examine a mine for hazardous conditions immediately before miners are permitted to work. The operator, or his agent, shall notify the Department as soon as possible after commencing emergency action necessary to preserve the mine.

D. The operator, or his agent, shall send to the Department ~~ten~~ 10 days' prior notice of any change in the name of a mine or in the name of the operator of a mine.

E. The operator, or his agent, shall send to the Department ~~ten~~ 10 days' prior notice of the opening of a new mine.

F. Any notice required by this section shall be in writing and shall include the name of the mine, the location of the mine, the name of the operator, and the operator's mailing address.

§ 45.1-161.64. Maps of mines required to be made; contents; extension and preservation; use by Department; release; posting of map.

A. Prior to commencing mining activity, the operator of a coal mine, or his agent, shall make, or cause to be made, unless already made and filed, an accurate map of such mine, on a scale to be stated ~~thereon of 100 to 400 feet to the inch.~~ *Beginning July 1, 2007, all maps shall be presented on the Virginia Coordinate System of 1927, South Zone, unless otherwise approved by the Chief.* At intervals not to exceed ~~twelve~~ 12 months and when a coal mine is abandoned, the operator shall submit to the Chief three copies of an up-to-date map of the entire mine in paper format or one copy of the map in an electronic format. *On and after July 1, 2007, only maps in an electronic format will be accepted unless otherwise approved by the Chief.* A registered engineer or registered surveyor shall certify that the map of the mine workings is accurate. Such map shall show the mine name, company name, mine index number, legend identifying the scale of the map, symbols used and the name of the person responsible for the information on the map. The map shall contain information related to active and worked-out areas of the mine, projections for at least twelve months of anticipated development, location of gas wells and all known drill holes, the location of all known mine workings underlying, overlying, and adjacent to the mine property, the direction and quantity of air current, ventilation controls, escapeways, so much of the property lines and the outcrop of the coal of the tract of land on which the mine located as may be within 1000 feet of any part of the workings of such mine, and such other information related to underground and surface activities as deemed necessary by the Chief. If there are no changes in the information required by to be submitted under this section, an updated map shall not be required to be submitted at the time an updated map is due, the operator may submit a notice that there are no changes to the map in lieu of submitting an updated map to the Department.

B. The operator of any surface coal mine, or his agent, shall not be required to submit a map of such mine to the Department unless the mine may intersect (i) underground workings or (ii) workings from auger, thin seam, or highwall mining operations. The map shall be filed and preserved among the records of the Department and made available at a reasonable cost to all persons owning, leasing, or residing on or having an equitable interest in surface areas or coal or mineral interests within 1,000 feet of such mining operation upon written proof satisfactory to the Director and upon sworn affidavit that such person requesting a map has a proper legal or equitable interest; however, the Director shall provide to the person requesting a map only that portion of the map which abuts or is contiguous to the

property in which such requesting party has a legal or equitable interest. In no case shall any copy of the same be made for any other person without the consent of the operator or his agent. The Director shall promptly deliver notice of such request to the operator of such mining operation.

Underground coal mine maps shall show:

- 1. The active workings;*
- 2. All pillared, worked out, and abandoned areas, except as provided in this section;*
- 3. Entries and aircourses with the quantity of airflow, direction of airflow indicated by arrows, and ventilation controls;*
- 4. Contour lines of all elevations;*
- 5. Dip of the coalbed;*
- 6. Escapeways;*
- 7. The locations that are known or should be known of (i) adjacent mine workings within 1,000 feet, (ii) mines above or below, and (iii) water pools above;*
- 8. Either producing or abandoned oil and gas wells located within 500 feet of such mine and in any underground area of such mine; and*
- 9. Such other information as the Chief may require.*

Such map shall identify those areas of the mine that have been pillared, worked out, or abandoned, that are inaccessible, or that cannot be entered safely.

C. The original map, or a true copy thereof, shall be kept by such operator at the active mine, open at all reasonable times for the examination and use of the mine inspector. For coal mines, such map shall be kept up to date by temporary notations and such map shall be revised and supplemented at intervals not to exceed six months. A registered engineer or registered surveyor shall certify that the revised map is accurate. Such certification shall not be required for temporary notations. Additional information required to be shown on underground coal mine maps shall include:

- 1. Mine name, company name, mine index number, and name of the person responsible for information on the map;*
- 2. The scale and orientation of the map and symbols used on the map;*
- 3. The property or boundary lines of the mine;*
- 4. All known drill holes that penetrate the coalbed being mined;*
- 5. All shaft, slope, drift, and tunnel openings and auger and strip mined areas of the coalbed being mined;*
- 6. The location of all surface mine ventilation fans, the location of which may be designated on the mine map by symbols;*
- 7. The location of railroad tracks and public highways leading to the mine and mine buildings of a permanent nature with identifying names shown;*
- 8. The location and description of a least two permanent base line points coordinated with the underground and surface mine traverses, and the location and description of at least two permanent elevation bench marks used in connection with establishing or referencing mine elevation surveys;*
- 9. The location and elevation of any body of water dammed or held back in any portion of the mine; provided, however, such bodies of water may be shown on overlays or tracings attached to the mine maps used to show contour lines as provided under subdivision 12 of this section;*
- 10. The elevations of tops and bottoms of shafts and slopes, and the floor at the entrance to drift and tunnel openings;*
- 11. The elevation of the floor at intervals of not more than 200 feet in (i) at least one entry of each working section and main and cross entries; (ii) the last line of open crosscuts of each working section, and main and cross entries before such sections and main and cross entries are abandoned; and (iii) rooms advancing toward or adjacent to property or boundary lines or adjacent mines; and*
- 12. Contour lines passing through whole number elevations of the coalbed being mined. The spacing of such lines shall not exceed 10-foot elevation levels, except that a broader spacing of contour lines may be approved by the Chief for steeply-pitching coalbeds. Contour lines may be placed on overlays or tracings attached to mine maps.*

D. Such Underground coal mine maps may be used by the Department for the evaluation of the coal resources of the Commonwealth submitted to the Chief shall be on a scale of not less than 100 or more than 500 feet to the inch. Mapping of the underground mine works shall be completed by a closed loop survey method of traversing or other equally accurate methods of traversing. All closed loop surveys shall meet a minimum accuracy standard of one part in 5,000. Elevations shall be tied to either the United States Geological Survey or the United States Coast and Geodetic Survey benchmark system. A registered engineer or licensed land surveyor shall certify that the map of the mine workings is accurate.

E. Copies of such Underground coal mine maps shall be made available at a reasonable cost to the governing body of any county, city or town in which the mine is located upon written request; however, such copies shall be provided on the condition that they not be released to any person who does not

have a legal or equitable interest in surface areas or mineral interests within 1,000 feet of the mining operation without the written consent of the operator or his agent kept up-to-date by temporary notations and revised and supplemented at intervals not to exceed six months based on a survey made or certified by a registered engineer or licensed land surveyor. The governing body shall promptly deliver notice of any request for a copy of such a map to the operator or his agent. Temporary notations shall include:

1. The location of each working face of each working place;
2. Pillars mined or other such second mining;
3. Permanent ventilation controls constructed or removed, such as seals, overcasts, undercasts, regulators, and permanent stoppings, and the direction of air currents indicated; and
4. Escapeways designated by means of symbols.

F. At underground coal mines, an accurate map of the mine showing clearly all avenues of ingress and egress in case of fire shall be posted in a place accessible to all miners.

G. Surface mine operators shall maintain an accurate and up-to-date map of the mine. The map shall show:

1. Name and address of the mine;
2. The property or boundary lines of the active areas of the mine;
3. Contour lines passing through whole number elevations of the coalbed being mined. The spacing of such lines shall not exceed 25-foot elevation levels, except that a broader spacing of contour lines may be approved by the Chief for steeply pitching coalbeds. Contour lines may be placed on overlays or tracings attached to mine maps;
4. The general elevation of the coalbed or coalbeds being mined, and the general elevation of the surface;
5. Either producing or abandoned oil and gas wells and gas transmission lines located on the mine property;
6. The location and elevation of any body of water dammed or held back in any portion of the mine; provided, however, such bodies of water may be shown on overlays or tracings attached to the mine maps;
7. All prospect drill holes that penetrate the coalbed or coalbeds being mined on the mine property;
8. All auger and strip mined areas of the coalbed or coalbeds being mined on the mine property together with the line of maximum depth of holes drilled during auger mining operations;
9. All worked out and abandoned areas;
10. The location of railroad tracks and public highways leading to the mine, and mine buildings of a permanent nature with identifying names shown;
11. Underground mine workings underlying and within 1,000 feet of the active areas of the mine;
12. The location and description of at least two permanent baseline points, and the location and description of at least two permanent elevation bench marks used in connection with establishing or referencing mine elevation surveys;
13. The scale of the map; and
14. Such other information required by the Chief.

H. Surface surveys shall originate from at least two permanent survey monuments on the mine property located with a minimum accuracy standard of one part in 10,000. The monuments shall be clearly referenced on the mine map. Elevations shall be tied to either the United States Geological Survey or the United States Coast and Geodetic benchmark system.

I. The original map, or a true copy thereof, shall be left by the operator at the active mine, open at all reasonable times for the examinations and use of the mine inspector.

J. Such maps may be used by the Department for the evaluation of the coal resources of the Commonwealth.

K. The map shall be filed and preserved among the records of the Department and copies of such maps shall be made available at a reasonable cost.

L. Any person who has conducted mining operations or prepared mine maps and who has a map or surveying data of any worked out or abandoned underground coal mine shall on request make such map or data available to the Department to copy or reproduce such material.

§ 45.1-161.80. Duties of mine inspectors.

Each mine inspector shall:

1. Report immediately, and by the quickest available means, any mine fire, mine explosion, and any accident involving serious personal injury or death to his supervisor;

2. Proceed immediately to the scene of any accident at any mine under his jurisdiction that results in loss of life or serious personal injury, and to the scene of any mine fire or explosion regardless of whether there is loss of life or personal injury. He shall make such investigation and suggestions and render such assistance as he deems necessary for the future safety of the employees, and make a complete report to his supervisor as soon as practicable. He shall have the power to compel the

428 attendance of witnesses, and to administer oaths or affirmations; and

429 3. Provide assistance to mine rescue and recovery operations whenever a mine fire, mine explosion,
430 or other serious accident occurs, and shall monitor the reopening of all mines or sections thereof that
431 have been sealed or abandoned on account of fire or any other cause in accordance with a plan
432 approved by the Chief.

433 § 45.1-161.83. Review of inspection reports and records.

434 Prior to commencing an inspection of a coal mine, a mine inspector shall review the most recent
435 available report of inspection by the Mine Safety and Health Administration. ~~Prior to commencing any~~
436 ~~inspection of a mine, a~~ *During the course of a complete inspection of a coal mine, the* mine inspector
437 shall comprehensively review the records of pre-shift examinations, on-shift exams, daily inspections,
438 and weekly examinations which are required to be maintained pursuant to this Act, for the ~~thirty~~ 30-day
439 period preceding the inspection. The mine inspector may, but shall not be required to, review the
440 records for such additional period as he may deem prudent. The inspector shall review other records
441 relating to safety and health conditions in the mine which are required to be maintained pursuant to this
442 Act during the course of the inspection.

443 § 45.1-161.97. Reports of violations.

444 A. Any person aware of a violation of this Act may report the violation to a mine inspector or to
445 any other employee of the Department, in person, in writing, or by telephone call, at the mine, at an
446 office of the Department or at the mine inspector's residence.

447 B. The operator of every mine, or his agent, shall deliver a copy of this Act to every miner upon the
448 commencement of his employment at the mine, unless the miner is already in possession of a copy.

449 C. The operator of every mine, or his agent, shall display on a sign placed at the mine office, at the
450 bath house, and on a bulletin board at the mine site, a notice containing the office and home telephone
451 numbers of mine inspectors and other Department personnel, and office addresses, which may be used to
452 report any violation of this Act.

453 D. The Department shall keep a record, on a form prepared for such purpose, of every alleged
454 violation of this Act which is reported and the results of any investigation. The Department shall give a
455 copy of the complaint form, with the identity of the person making the report, *and any individuals*
456 *identified in the alleged violation* being omitted or deleted, to the operator of the mine or his agent. The
457 Department shall not disclose the identity of any person who reports an alleged violation to the owner
458 or operator of the mine or his agent, or to any other person or entity. Information regarding the identity
459 of the person reporting the violation shall be excluded from access under the provisions of the Virginia
460 Freedom of Information Act (§ 2.2-3700 et seq.).

461 § 45.1-161.109. Roof control plans.

462 A. *Each underground coal mine shall have a roof control plan approved by the Chief. Each plan*
463 *shall include (i) a minimum standard for adequately controlling the roof, face, and ribs; (ii) a*
464 *description of mining methods used; (iii) a listing and specification of roof and rib support materials;*
465 *(iv) instruction for the installation of temporary and permanent roof supports; (v) a description of any*
466 *pillar recovery methods; (vi) applicable drawings that demonstrate width of openings, roof support*
467 *installation sequences, and pillar recovery sequences; and (vii) any additional requirements deemed*
468 *necessary by the Chief. If changes are to be made in the mining system that necessitate any change in*
469 *the roof control plan, the plan shall be revised and approved by the Chief prior to implementing the*
470 *new mining system.*

471 B. The Chief shall, where he deems necessary, prescribe adequate minimum standards for systematic
472 support of mine roof, suitable to the roof conditions and mining system of each mine. Such standards
473 shall be incorporated into an approved roof control plan for the mine. This section shall not apply to
474 roof control systems installed prior to January 27, 1988, so long as the support system continues to
475 effectively control the roof, face and ribs.

476 B.C. Failure to comply with the approved roof control plan for the mine shall constitute a violation
477 of this section.

478 C.D. The approved roof control plan shall be posted conspicuously at the mine and a copy shall be
479 available at each working section of the mine.

480 D.E. The minimum standards and plan shall provide for temporary support at all active workings,
481 without regard to natural condition.

482 E.F. If the minimum standards do not afford adequate protection, such additional supports as shall be
483 necessary shall be installed. Such additional supports shall be described in the plan.

484 § 45.1-161.115. Supplies of materials for supports.

485 A. The operator, or his agent, shall provide at or near the working places an ample supply of suitable
486 materials of proper size with which to secure all roofs, ribs and faces of working places in a safe
487 manner. Suitable supply materials shall be provided for variations in seam height. If the operator, or his
488 agent, fails to provide such suitable materials, the mine foreman shall cause the miners to withdraw
489 from the mine, or the portion thereof affected, until such material or supplies are received.

B. Safety posts, jacks or temporary crossbars shall be set close to the face before other operations are begun and as needed thereafter, if miners go in by the last permanent roof support.

C. Unless an automated temporary roof support system is used, safety posts or jacks shall be used to protect the miners when roof material is being taken down, crossbars are being installed, roof bolt holes are being drilled, roof bolts are being installed, or when any other work is being performed that would reasonably require roof support to protect the miners involved.

D. The operator, or his agent, shall make immediately available for emergency use at each mine site ~~two 40-ton jacks or at least two equivalent~~ lifting devices with a combined total of at least 80 tons lifting capacity. Each individual lifting device shall have 20 tons or greater lifting capacity.

§ 45.1-161.116. Examination and testing of roof, face, and ribs.

A. The operator, or his agent, shall instruct all miners how to make visual examinations and sound and vibration testing of roof, face and ribs.

B. Miners exposed to danger from falls of roof, face, and ribs shall *visually* examine and, *if conditions permit*, test the roof, face, and ribs *by sounding the roof* before starting work or before starting a machine and as frequently thereafter as may be necessary to ensure safety. When hazardous conditions are found, miners discovering them shall correct such conditions immediately by taking down the loose material, by proper timbering, or installation of proper roof support before work is continued or any other work is done, or shall vacate the place.

C. At least once each shift, or more often if necessary, the mine foreman or other certified person shall examine and test the roof, face and ribs of all active working sections where coal is being produced while miners are working therein. Any place in which a hazardous condition is found by the mine foreman shall be made safe in his presence or under his direction, or the miners shall be withdrawn from such place. Such hazardous conditions and corrective actions taken shall be recorded in the on-shift record book at the mine.

§ 45.1-161.117. Mapping of roof falls.

Unplanned roof falls that are required to be reported in accordance with § 45.1-161.78 shall be marked on a map ~~of~~ *maintained at* the mine to indicate the specific location of the fall.

§ 45.1-161.118. Unsafe conditions.

A. No person shall work or travel under unsupported roof except to install temporary supports in accordance with the approved roof control plan. *Areas inby the breaker line where second mining has been or is being conducted shall be considered unsupported.*

B. If roof, face, or rib conditions are found to be unsafe, no person shall start any other work until the conditions have been corrected by taking down loose material or securely supporting the roof, face, or ribs.

C. A bar of proper length shall be used to pull down any loose material discovered.

§ 45.1-161.122. Mining in proximity to abandoned areas.

A. The mine foreman shall ensure that boreholes are drilled in each advancing working place that is (i) ~~within fifty~~ 50 feet of abandoned areas in the mine as shown by surveys made and certified by a registered engineer or surveyor, (ii) within 200 feet of abandoned areas in the mine which have not been certified as surveyed or, (iii) within 200 feet of any mine workings of an adjacent mine located in the same coal bed unless the adjacent area of the mine has been pre-shift examined. The boreholes shall be at least ~~twenty~~ 20 feet in depth and always maintained not less than ~~ten~~ 10 feet in advance of the face, and not more than eight feet apart unless approved by the Chief. One borehole shall also be drilled for each cut on sides of the active workings that are being driven toward, and in proximity to, an abandoned mine or part of a mine which may contain flammable gas or which is filled with water.

B. Sufficient holes shall be drilled through to accurately determine whether hazardous quantities of methane, carbon dioxide and other gases or water are present in the abandoned area. Materials shall be available to plug such holes to prevent an inundation of hazardous quantities of gases or water if detected.

C. All work in the immediate vicinity of a borehole shall cease when a hole drills into abandoned areas. The atmosphere at the back of boreholes drilled into abandoned areas shall be examined, using instruments capable of examining the atmosphere. If the examination detects hazardous quantities of methane, carbon dioxide, or other gases that cannot be removed, an equipped mine rescue team shall be made available in the immediate vicinity prior to mining into the abandoned area. If hazardous quantities of noxious or flammable gases or water are present upon drilling into abandoned areas, constant communication shall be maintained with the surface while mining into the abandoned area. *Mining shall not advance into any abandoned area penetrated by boreholes drilled in accordance with subsection A until a plan has been submitted and approved by the Chief. The plan will include at a minimum: (i) procedures for testing the atmosphere at the back of boreholes drilled into the abandoned area; (ii) the method of ventilation, ventilation controls, and the air quantities and velocities in the affected working section and working place; (iii) procedures for mining-through when hazardous quantities of methane,*

551 carbon dioxide, or other hazardous gases cannot be removed; (iv) dewatering procedures to be used if a
552 penetrated area contains hazardous water accumulation; and (v) the procedures and precautions to be
553 followed during mining-through operation. A copy of the plan shall be made available near the site of
554 the penetration operation and the operator shall review the plan with all miners involved in the
555 operation. Failure to comply with the approved plan shall constitute a violation of this section.

556 D. Any operator, his agent, mine foreman or miner engaged in drilling or mining into inaccessible
557 abandoned areas shall have upon his person a self-contained self-rescuer.

558 § 45.1-161.124. Shop and other equipment.

559 A. The following items of shop and other equipment shall be guarded and maintained adequately:

560 1. Gears, sprockets, pulleys, fan blades or propellers, friction devices and couplings with protruding
561 bolts or nuts;

562 2. Shafting and projecting shaft ends that are within seven feet of floor or platform level;

563 3. Belt, chain or rope drives that are within seven feet of the floor or platform;

564 4. Fly wheels, provided that fly wheels extending more than seven feet above the floor shall be
565 guarded to a height of at least seven feet;

566 5. Circular and band saws and planers;

567 6. Repair pits, provided that guards shall be kept in place when the pits are not in use;

568 7. Counterweights; and

569 8. The approach to mine fans shall be guarded.

570 B. Machinery shall not be repaired or serviced while the machinery is in motion; however, this shall
571 not apply where safe remote devices are used.

572 C. A guard or safety device removed from any machine shall be replaced before the machine is put
573 in operation.

574 D. Mechanically operated grinding wheels shall be equipped with (i) safety washers and tool rests;
575 (ii) substantial retaining hoods, the hood opening of which shall not expose more than a ~~ninety~~ 90
576 degree sector of the wheel; and (iii) eyeshields, unless goggles are worn by the miners. Retaining hoods
577 shall include either a device to control and collect excess rock, metal or dust particles, or a device
578 providing equivalent protection to the miners operating such machinery.

579 E. The operator or his agent shall develop procedures for examining for potential hazards,
580 completing proper maintenance, and properly operating each type of centrifugal pump. The procedures
581 shall, at a minimum, address the manufacturer's recommendations for start-up and shutdown of the
582 pumps, proper actions to be taken when a pump is suspected of overheating, safe location of start and
583 stop switches, and actions to be taken when signs of structural metal fatigue such as cracks in the
584 frame, damaged cover mounting brackets, or missing bolts or other components are detected. All miners
585 who repair, maintain, or operate such pumps shall be trained in these procedures.

586 § 45.1-161.126. Surface storage of explosives.

587 A. Separate surface magazines shall be provided for the storage of explosives and detonators.

588 B. Surface magazines for storing and distributing explosives in amounts exceeding 150 pounds shall
589 be:

590 1. Reasonably bulletproof and constructed of incombustible material or covered with fire-resistive
591 material. The roofs of magazines so located that it is impossible to fire bullets directly through the roof
592 from the ground need not be bulletproof, but where it is possible to fire bullets directly through them,
593 roofs shall be made bullet-resistant by material construction, or by a ceiling that forms a tray containing
594 not less than a four-inch thickness of sand, or by other methods;

595 2. Provided with doors constructed of three-eighth inch steel plate lined with a two-inch thickness of
596 wood, or the equivalent;

597 3. Provided with dry floors made of wood or other nonsparking material and have no metal exposed
598 inside the magazine;

599 4. Provided with suitable warning signs so located that a bullet passing directly through the face of a
600 sign will not strike the magazine;

601 5. Provided with properly screened ventilators;

602 6. Equipped with no openings except for entrance and ventilation; and

603 7. Kept locked securely when unattended; and

604 8. Electrically bonded and grounded if constructed of metal.

605 C. Surface magazines for storing detonators need not be bulletproof, but they shall conform to the
606 other provisions of subsection B regarding the storage of explosives.

607 D. Explosives in amounts of 150 pounds or less or 5,000 detonators or less shall be stored in
608 accordance with preceding standards or in separate locked box-type magazines. Box-type magazines may
609 also be used as distributing magazines when quantities do not exceed those mentioned. Box-type
610 magazines shall be constructed strongly of two-inch hardwood or the equivalent. Metal magazines shall
611 be lined with nonsparking material. No magazine shall be placed in a building containing oil, grease,
612 gasoline, wastepaper or other highly flammable material; nor shall a magazine be placed within twenty

feet of a stove, furnace, open fire or flame.

E. Magazines shall be located not less than 300 feet from any mine opening, ~~occupied building or public road or any road designated by the Chief in order to promote safety.~~ However, in the event that a magazine cannot be practicably located at such a distance, a magazine may be located less than 300 feet from any mine opening, ~~occupied building or road,~~ if it is sufficiently barricaded and approved by the Chief. *Unless approved by the Chief, magazines shall not be located closer to occupied buildings, public roads, or passenger railways than allowed in the "American Table of Distances for Storage of Explosive Materials."*

F. The supply kept in distribution magazines shall be limited to approximately a ~~forty-eight~~ 48-hour supply, and such supplies of explosives and detonators may be distributed from the same magazine, if separated by at least a four-inch substantially fastened hardwood partition or equivalent barrier.

G. The area surrounding magazines for not less than ~~twenty-five~~ 25 feet in all directions shall be kept free of rubbish, dry grass or other materials of a combustible nature.

H. If the explosives magazine is illuminated electrically, vapor-proof lamps shall be installed and wired so as to present minimum fire and contact hazards.

I. Only nonmetallic tools shall be used for opening wooden explosives containers. Extraneous materials shall not be stored with explosives or detonators in an explosives magazine.

§ 45.1-161.135. Clearance on haulage roads.

A. Track haulage roads in entries, rooms, and crosscuts shall have a continuous clearance on one side of at least ~~twenty-four~~ 24 inches from the farthest projection of moving traffic. The clearance shall be kept free of any obstruction to a height permitted by the height of the coal seam. *When not possible to maintain such clearance, close clearance signs shall be posted inby and outby the affected area.*

B. Track haulage roads in entries, rooms, and crosscuts shall have a continuous clearance, on the side opposite the clearance required by subsection A, of at least six inches from the farthest projection of moving traffic. When not possible to maintain such clearance, close clearance signs shall be posted inby and outby the affected area.

C. Haulage roads where trolley lines are used shall have the clearance required by subsection A on the side of the track opposite the trolley lines. This requirement shall not apply where the trolley lines are 6 1/2 feet or more above the rail.

D. The clearance space on all track haulage roads shall be kept free of loose rock, loose coal, supplies, and other loose materials. If the clearance space exceeds ~~twenty-four~~ 24 inches, not more than ~~twenty-four~~ 24 inches of the clearance space shall be required to be kept free of such materials.

E. All parallel tracks shall be installed so as to provide a clearance of at least twenty-four inches between the outermost projections of passing traffic.

F. Ample clearance shall be provided (i) at conveyor loading heads, (ii) at conveyor control panels, and (iii) along conveyor lines.

G. Belt conveyors shall be equipped with control switches to automatically stop the driving motor in the event the belt is stopped by slipping on the driving pulley, by breakage or other accident.

§ 45.1-161.147. Operation of equipment.

A. Operators of self-propelled haulage equipment shall face in the direction of travel except when the equipment is being loaded and is under the boom of the loading equipment.

B. Track haulage cars which ~~are regularly coupled and uncoupled~~ *require coupling and uncoupling* shall be equipped with automatic couplers ~~which couple on impact and uncouple without the need for persons to go between the ends of such equipment or devices designed to allow coupling and uncoupling without exposing miners between equipment.~~ *Specialty cars designed with safe clearance when connecting to other cars are excluded from the provisions of this subsection.*

C. Persons operating self-propelled haulage equipment shall sound a warning before starting such equipment and on approaching curves, sidetracks, doors, curtains, manway crossings, or any other place where persons are or are likely to be.

D. All rail equipment shall be operated at speeds which are safe for the condition of the rail installation, grades and clearances encountered. When rail equipment is being operated at normal safe speeds, a distance of 300 feet shall be maintained from the rear of other rail equipment in operation except trailing locomotives that are an integral part of the trip.

E. All persons shall stand in the clear during switching operations.

F. No two pieces of self-propelled mobile mining equipment traveling in opposite directions inside a coal mine shall be allowed to pass each other while both are in motion on the same haulage road *unless a minimum of 24 inches is maintained between the vehicles.*

§ 45.1-161.154. Hoisting ropes.

A. Hoisting ropes on all cages or trips shall be adequate in size to handle the load and have a proper factor of safety. Ropes used to hoist or lower coal and other materials shall have a factor of safety of not less than five to one; ropes used to hoist or lower miners shall have a factor of safety of not less

674 than ~~ten~~ 10 to one.

675 B. The hoisting rope shall have at least three full turns on the drum when extended to its maximum
676 working length. The rope shall make at least one full turn on the drum shaft or around the spoke of the
677 drum, in case of a free drum, and be fastened securely by means of clamps.

678 C. The hoisting rope shall be fastened to its load by a spelter-filled socket or by a thimble and
679 adequate number of clamps properly spaced and installed.

680 D. Any ~~hoisting rope attached to~~ a cage, man-car, or trip used for hoisting or lowering men or
681 ~~materials with a single rope~~ shall be provided with two bridle chains or ~~cables wire ropes~~ connected
682 securely to the rope at least three feet above the socket or thimble and to the crosspiece of the cage or
683 to the man-car or trip.

684 E. When equipment or supplies are being hoisted or lowered in the slope, safety chains or ~~cables~~
685 ~~wire ropes~~ shall be provided and connected securely to the hoist rope. In addition, visible or audible
686 warning devices shall be installed in the slope where they may be seen or heard by persons approaching
687 the slope track entry from any access.

688 § 45.1-161.156. Slope and shaft conditions.

689 A. All shafts shall be equipped with safety gates at the top and at each landing. ~~Where possible, such~~
690 ~~Safety gates shall be self-closing and~~ shall be kept closed except when the cage is being loaded or
691 unloaded.

692 B. Positive-acting stopblocks or derails shall be installed near the top and at intermediate landings of
693 slopes and surface inclines and at the approaches to all shaft landings.

694 C. Positive-acting stopblocks or derails shall be installed on the haulage track in the slope near the
695 top of the slope. The stopblocks or derails shall be in a position to hold or stop any load, including
696 heavy mining equipment, to be lowered into the mine until such time as the equipment is to be lowered
697 into the mine by the hoist.

698 D. At the bottom of each hoisting shaft and at intermediate landings, a runaround shall be provided
699 for safe passage from one side of the shaft to the other. This passageway shall be not less than five feet
700 in height and three feet in width.

701 E. Ice shall not be permitted to accumulate excessively in any shaft where miners are hoisted or
702 lowered.

703 § 45.1-161.163. Separation of openings.

704 A. In drift or slope mines, openings shall be separated by not less than ~~fifty~~ 50 feet of natural strata,
705 unless specifically approved by the ~~Chief in the roof control plan~~. All connections between openings not
706 used for the coursing of air, travel, or haulage shall be closed with stoppings of fireproof material.

707 B. In shaft mines, openings shall be separated by not less than 200 feet of natural strata.

708 § 45.1-161.165. Maintenance of mine openings.

709 Mine openings that are used for entering and leaving the mine ~~and other required travelways~~ shall
710 be kept in good condition and shall at all times be maintained in a safe condition.

711 § 45.1-161.172. Underground illumination.

712 A. Electric-light wires shall be supported by suitable insulators or installed in conduit, fastened
713 securely to the power conductors and shall not contact combustible materials.

714 B. Electric lights shall be *guarded and* installed so that they do not contact combustible materials.

715 ~~C. Lamp sockets with exposed metal parts shall not be used underground.~~

716 § 45.1-161.175. Protective clothing.

717 A. All miners shall wear protective hats while underground and while in those areas on the surface
718 where there is a danger of injury from falling objects.

719 B. *Every person entering an underground mine must wear reflective materials adequate to be visible*
720 *from all sides. The reflective material shall be placed on hard hats and at least one other item such as*
721 *belts, suspenders, jackets, coats, coveralls, shirts, pants, vests, or other item of outer clothing.*

722 C. Protective footwear shall be worn by miners while on duty in and around a mine where falling
723 objects may cause injury.

724 ~~ED.~~ All employees inside or outside of mines shall wear approved-type goggles or shields where
725 there is a hazard from flying particles.

726 ~~DE.~~ Welders and helpers shall use proper shields or goggles to protect their eyes.

727 ~~EF.~~ Miners engaged in haulage operations and miners employed around moving equipment on the
728 surface and underground shall wear snug-fitting clothing.

729 ~~FG.~~ ~~Protective gloves~~ *Gloves* shall be worn when material which may injure the hands is handled.
730 *Gloves with gauntlet cuffs shall not be worn around moving equipment. Gloves shall be worn when*
731 *handling energized cables.*

732 ~~GH.~~ Miners exposed for short periods to hazards from inhalation of gas, dust, fumes, and mist shall
733 wear approved respiratory equipment. When the exposure is for prolonged periods, adequate approved
734 measures to protect miners or to reduce the hazard shall be taken.

735 § 45.1-161.176. Hearing protection.

A. The Chief shall promulgate by regulation such feasible engineering controls and mining equipment noise levels as are deemed necessary. Such noise levels shall meet the minimum noise level standards established by the federal mine safety law.

B. Ear protectors *Approved hearing protection* shall be supplied by the operator to all miners upon request *provided to miners by the mine operator*. Miners shall wear approved hearing protection in areas of excess noise levels in accordance with the mine's hearing conservation program approved under 30 CFR Part 62.

§ 45.1-161.186. Power circuits.

A. All underground power wires and cables shall have adequate current-carrying capacity, shall be guarded from mechanical injury, and shall be installed in a permanent manner.

B. Wires and cables not encased in armor shall be supported by well installed insulators and shall not touch combustible materials, roof, or ribs; however, this shall not apply to ground wires, grounded power conductors, and trailing cables.

C. Power wires and cables installed in belt-haulage slopes shall be insulated adequately and buried in a trench not less than ~~twelve~~ 12 inches below combustible material, unless encased in armor or otherwise fully protected against mechanical injury.

D. Splices and repairs in power cables shall be made in accordance with the following:

1. Mechanically strong with adequate electrical conductivity;
2. Effectively insulated and sealed so as to exclude moisture;
3. If the cable has metallic armor, mechanical protection and electrical conductivity equivalent to that of the original armor; and
4. If the cable has metallic shielding around each conductor, then the new shielding shall be equivalent to that of the original shielding.

E. All underground high-voltage transmission cables shall be:

1. Installed only in regularly inspected airways;
2. Covered, buried, or placed on insulators so as to afford protection against damage by derailed equipment if installed along the haulage road;
3. Guarded where miners regularly work or pass under them unless they are 6 1/2 feet or more above the floor or rail, ~~or are well insulated~~;
4. Securely anchored, properly insulated, and guarded at ends; and
5. Covered, insulated or placed to prevent contact with trolley circuits and other low-voltage circuits.

F. *New high-voltage disconnects installed on or after January 1, 2007, on all underground electrical installations shall automatically ground all three power leads when in the open position.*

FG. All power wires and cables shall be insulated adequately where they pass into or out of electrical compartments, where they pass through doors and stoppings, and where they cross bare power wires.

GH. Where track is used as a power conductor:

1. Both rails of main-line tracks shall be welded or bonded at every joint, and cross bonds shall be installed at intervals of not more than 200 feet. If the rails are paralleled with a feeder circuit of like polarity, such paralleled feeder shall be bonded to the track rails at intervals of not more than 1,000 feet;
2. At least one rail on secondary track-haulage roads shall be welded or bonded at every joint, and cross bonds shall be installed at intervals of not more than 200 feet; and
3. Track switches on entries shall be well bonded.

§ 45.1-161.194. Trailing cables.

A. Trailing cables used underground shall be flame-resistant cables.

B. Trailing cables shall be provided with suitable short-circuit protection and means of disconnecting power from the cable. Power connections made in other than intake air shall be by means of permissible connectors.

C. Temporary splices in trailing cables shall be made in a workmanlike manner, mechanically strong, and well insulated.

D. No more than one temporary, unvulcanized splice shall be allowed in a trailing cable.

E. Permanent splices or repairs in trailing cables shall be made as follows:

1. They shall be mechanically strong with adequate electrical conductivity and flexibility;
2. They shall be effectively insulated and sealed so as to exclude moisture;
3. The finished splice or repair shall be vulcanized or otherwise treated with suitable materials to provide flame-resistant properties and good bonding to the outer jacket; and
4. If the cable has metallic shielding around each conductor, then the new shielding shall be equivalent to that of the original shielding.

F. Trailing cables shall be protected against mechanical ~~injury~~ damage. *Trailing cables damaged in a manner that exposes the insulated inner power conductors shall be repaired promptly or removed from*

797 service.

798 § 45.1-161.195. Inspection of electric equipment and wiring; checking and testing methane monitors.

799 A. Electric equipment and wiring shall be inspected by a certified person at least weekly if located
800 underground, and at least monthly if located on the surface, and more often if necessary to assure safe
801 operating conditions, and any ~~defect~~ *hazardous condition* found shall be *promptly corrected or the*
802 *equipment or wiring shall be removed from service.* Records of such examination shall be maintained at
803 the mine for a period of one year.

804 B. A functional check of methane monitors on electrical face equipment shall be conducted to
805 determine that such monitors are de-energizing the electrical face equipment properly. Such check shall
806 be made on each production shift and shall be conducted by the equipment operator in the presence of a
807 mine foreman, and shall be recorded in the on-shift report of the mine foreman ~~pursuant to~~
808 ~~§ 45.1-161.213.~~

809 C. Weekly calibration tests on methane monitors on electrical face equipment to determine the
810 accuracy and operation of such monitors shall be conducted *with a known mixture of methane at the*
811 *flow rate recommended by the methane monitor manufacturer.* ~~and a~~ A record of the results shall be
812 maintained.

813 D. Required methane monitors shall be maintained in permissible and proper operating condition.

814 § 45.1-161.198. Attention to injured persons.

815 A. When an injury occurs underground, the injured person shall be brought promptly to the surface.
816 Prompt medical attention shall be provided in the event of injury, and adequate facilities shall be made
817 available for transporting injured persons to a hospital if necessary.

818 B. Safe transportation shall be provided to carry an injured person from the site where the injury
819 occurred to the surface of the mine.

820 C. *The operator of each mine shall post directional signs that are conspicuously located to identify*
821 *the routes of ingress to and egress from any mine located off of a public road.*

822 § 45.1-161.200. Fire-fighting equipment.

823 A. Each mine shall be provided with suitable fire-fighting equipment, adequate for the size of the
824 mine.

825 B. The following equipment, at a minimum, shall be immediately available at each mine:

826 1. A water car filled with water and provided with hose and pump, or waterlines and necessary
827 hoses;

828 2. At least three ~~twenty~~ 20-pound dry chemical fire extinguishers;

829 3. Ten ~~fifty~~ 50-pound bags of rock dust, available at doors or other strategic places;

830 4. Bolt cutters which may be used to cut trolley wire in an emergency;

831 5. One pair of rubber gloves to be used with bolt cutters when cutting trolley wire;

832 6. Two sledge hammers; and

833 7. Five hundred square feet of brattice cloth, nails and hammer.

834 C. Clean dry sand, rock dust, or fire extinguishers, suitable from a toxic and shock standpoint, shall
835 be provided and placed at each electrical station, such as substations, transformer stations and permanent
836 pump stations, so as to be out of the smoke in case of a fire in the station.

837 D. Suitable fire extinguishers shall be provided ~~on~~ at all (i) *electrical stations, such as substations,*
838 *transformer stations, and permanent pump stations;* (ii) self-propelled mobile equipment; ~~at~~; (iii) belt
839 heads; and at the inby end of belts; (iv) *areas used for the storage of flammable materials;* (v) *fueling*
840 *stations; and (vi) other areas that may constitute a fire hazard, so as to be on the fresh air side in case*
841 *of a fire.*

842 E. All fire-fighting equipment shall be maintained in a useable and operative condition. Chemical
843 extinguishers shall be examined every six months and the date of the examination shall be indicated on
844 a tag attached to the extinguishers.

845 F. A sufficient number of approved one-hour self-contained self-rescuers shall be readily available,
846 not more than 100 feet away, for the persons involved in the moving or transporting of any unit of
847 off-track mining equipment.

848 § 45.1-161.207. Arcs, sparks and flames.

849 A. The intentional creation of any open arc, open spark or open flame, except as provided in
850 subsection B, shall be prohibited.

851 B. Welding and cutting with arc or flame or soldering underground in other than a fireproof
852 enclosure ventilated with intake air shall be done by or under the direct instruction of a certified ~~person~~
853 ~~foreman or repairman.~~ *Such* A person *certified in gas detection* shall test for methane before and during
854 such operations in underground mines and shall make a diligent search for fire after such operation in
855 all mines. Rock dust or suitable fire extinguishers shall be immediately available during such welding or
856 cutting. Welding operations shall be performed only in well ventilated areas.

857 § 45.1-161.208. Pre-shift examinations.

858 A. *The operator or his agent shall establish eight-hour intervals of time subject to required pre-shift*

859 examinations. Within three hours preceding the beginning of any shift and before anyone on the
 860 oncoming shift, other than a mine foreman conducting examinations required by this section, enters any
 861 underground area of a mine such eight-hour interval during which any person is scheduled to work or
 862 travel underground, a mine foreman foremen shall make a pre-shift examination. No person scheduled to
 863 enter the mine during the eight-hour interval other than the mine foremen conducting the examination
 864 may enter any underground area unless a pre-shift examination has been completed for such established
 865 eight-hour interval.

866 B. During the pre-shift examination, the mine foreman shall (i) examine for hazardous conditions, (ii)
 867 test for methane and oxygen deficiency with a suitable permissible device, and (iii) determine whether
 868 the air is traveling in its regular course and in sufficient volume in each split, at the following locations
 869 which are underground:

870 1. Track entries and other areas where persons are scheduled to work or travel during the oncoming
 871 shift;

872 2. Belt conveyors that will be used to transport persons during the oncoming shift and the entries in
 873 which these belt conveyors are located;

874 3. Working sections and areas where mechanized mining equipment is being installed or removed, if
 875 anyone is being scheduled to work on the section or in the area during the oncoming shift. This includes
 876 working places, approaches to worked-out areas, and ventilation controls on these sections or in these
 877 areas;

878 4. Approaches to worked-out areas along intake air courses if intake air passes by the worked-out
 879 area to ventilate working sections where anyone is scheduled to work during the oncoming shift;

880 5. Seals along intake air courses where intake air passes by a seal to ventilate working sections
 881 where anyone is scheduled to work during the oncoming shift;

882 6. Entries and rooms driven more than ~~twenty~~ 20 feet off an intake air course without a crosscut *and*
 883 *without permanent ventilation controls*, or more than two crosscuts off an intake air course without
 884 permanent ventilation controls where intake air passes through or by these entries or rooms to a working
 885 section where anyone is scheduled to work during the oncoming shift; and

886 7. Where unattended diesel equipment is to operate or areas where trolley wires or trolley feeder
 887 wires are to be or will remain energized during the oncoming shift.

888 C. During the pre-shift examination, the mine foreman shall determine the volume of air entering
 889 each of the following areas if a miner is scheduled to work in the areas during the oncoming shift:

890 1. In the last open crosscut, which means the crosscut in the line of pillars containing the permanent
 891 stoppings that separate the intake air courses and the return air courses, of each set of entries or rooms
 892 on each working section and areas where mechanized mining equipment is being installed or removed;

893 2. On each longwall or shortwall in the intake entry or entries at the intake end of the longwall or
 894 shortwall face immediately outby the face and the velocity of air at each end of the face at the locations
 895 specified in the approved ventilation plan required by the federal mine safety law; and

896 3. At the intake end of any pillar line (i) if a single split of air is used, in the intake entry furthest
 897 from the return air course, immediately outby the first open crosscut outby the line of pillars being
 898 mined, or (ii) if a split system is used, in the intake entries of each split immediately inby the split
 899 point.

900 D. A mine foreman shall make a pre-shift examination of surface areas of underground coal mines in
 901 accordance with the requirements for pre-shift examinations at surface coal mines as provided in
 902 § 45.1-161.256.

903 E. The Chief may require the mine foreman to examine other areas of the mine or examine for other
 904 hazards during the pre-shift examination.

905 F. Any area of the mine where hazardous conditions are found shall be posted with a conspicuous
 906 danger sign where anyone entering the area would pass. Only persons designated by the operator, or his
 907 agent, to correct or evaluate the condition may enter this posted area.

908 G. At each working place examined, the mine foreman shall certify by initials, date, and time, that
 909 the examination was made. In areas to be examined outby a working section, the mine foreman shall
 910 certify by initials, date, and time at enough locations to show that the entire area has been examined.

911 H. Idle and worked-out areas underground shall be inspected for gas and other hazardous conditions
 912 by a mine foreman, immediately before miners are permitted to enter or work in such places. A certified
 913 person shall supervise the correction of conditions that create an imminent danger. The mine operator, or
 914 his agent, may pass beyond the danger signal only in cases of necessity.

915 I. ~~The mine foreman shall place a danger signal or light at the mine entrance upon commencing his~~
 916 ~~pre-shift examination. No miner shall pass this danger signal~~ *Where persons have not been working*
 917 *underground before an established eight-hour interval, no person other than the mine foremen*
 918 *conducting a pre-shift examination may enter the mine* until the examination has been completed and the
 919 ~~mine foreman reports~~ *foremen report* the mine to be clear of danger; however, miners may enter under

920 the direction of ~~the~~ a mine foreman for the purpose of making the mine safe. The Chief shall have the
921 authority in certain mines, in his discretion, to authorize man-trips to proceed to a designated station
922 underground, from which they may not pass until the mine ~~foreman reports~~ *foremen report* the
923 remainder of the areas of the mine to be clear of danger.

924 J. Miners regularly employed on a shift during which a pre-shift examination is being conducted
925 shall be permitted to leave or enter the mine in the performance of their duties.

926 K. In multiple shift operations, certified persons may be used to make the pre-shift examination for
927 the next or succeeding shift.

928 L. Areas of inactive underground coal mines shall be examined for gas and other hazardous
929 conditions by a mine foreman immediately before miners are permitted to enter such areas to take
930 emergency actions to preserve a mine.

931 M. In the performance of his duties under this section, the mine foreman shall have no superior
932 officer, and all miners shall be subordinate to him.

933 § 45.1-161.209. On-shift examinations.

934 A. At least once during each shift, and more often if necessary, a certified person shall examine each
935 underground section where coal is produced and any other area where mechanized mining equipment is
936 being installed or removed during the shift. The certified person shall (i) examine for hazardous
937 conditions, (ii) test for methane and oxygen deficiency with a suitable permissible device, and (iii)
938 determine whether the air is traveling in its regular course and in sufficient volume in each split.
939 Hazardous conditions shall be corrected immediately or the miners shall be withdrawn and the affected
940 area plainly marked with "danger" signs.

941 B. During each shift that coal is produced, a certified person shall examine for hazardous conditions
942 along each underground belt conveyor entry where a belt conveyor is operated. This examination may
943 be conducted at the same time as the pre-shift examination of the belt conveyors and the belt conveyor
944 entries, if the examination is conducted within three hours before the ~~oncoming shift~~ *established*
945 *eight-hour interval. The person conducting the examination shall certify by initials, date, and time at*
946 *enough locations to show that the entire area has been examined.*

947 C. Persons conducting the on-shift examination shall determine at the following locations which are
948 underground:

949 1. The volume of air in the last open crosscut, which means the crosscut in the line of pillars
950 containing the permanent stoppings that separate the intake air courses and the return air courses, of
951 each set of entries or rooms on each working section and areas where mechanized mining equipment is
952 being installed or removed;

953 2. The volume of air on a longwall or shortwall, including areas where longwall or shortwall
954 equipment is being installed or removed, in the intake entry or entries at the intake end of the longwall
955 or shortwall;

956 3. The velocity of air at each end of the longwall or shortwall face at the locations specified in the
957 approved ventilation plan required pursuant to the federal mine safety law; and

958 4. The volume of air at the intake end of any pillar line (i) where a single split of air is used, in the
959 intake entry furthest from the return air course, immediately outby the first open crosscut outby the line
960 of pillars being mined, or (ii) if a split system is used, in the intake entries of each split immediately
961 inby the split point.

962 D. Inspections for methane shall be made before any electrically driven equipment is taken or
963 operated ~~inby the last open crosscut~~. Tests ~~A test~~ shall be made for methane ~~at least once every twenty~~
964 ~~minutes while such equipment is in operation, or more often if necessary before any electrically~~
965 ~~powered equipment is taken inby the last open crosscut, before blasting, and before work is resumed~~
966 ~~after blasting. When longwall or shortwall mining systems are used, these methane tests shall be made~~
967 ~~from under permanent roof support at the shearer, the plow, or cutting head. These methane tests shall~~
968 ~~be made at least once every 20 minutes or more often as necessary for safety while such equipment is in~~
969 ~~operation. When mining has been stopped for more than 20 minutes, methane tests shall be conducted~~
970 ~~prior to the start up of equipment.~~

971 E. Idle or worked-out areas underground, including section belts that have been idle for a period of
972 ~~twenty-four~~ 24 hours, shall be examined by a certified person immediately before miners are permitted
973 to enter or work in such areas. *The person conducting the examination shall certify by initials, date, and*
974 *time at enough locations to show that the entire area has been examined.*

975 F. Examination for gas shall be made by an authorized person certified to make gas tests (i) before
976 taking loading or cutting machines ~~inby the open crosscut nearest the face~~; (ii) before applying power to
977 machinery that remains at or near the face at not more than twenty-minute intervals during cutting,
978 drilling, or mechanical loading; (iii) before drilling with electric drills; (iv) before blasting; (v) after
979 blasting, before other work is resumed; and (vi) at such other times as may be necessary or designated
980 by the operator or mine inspector for adequate safety.

981 G. Examination for hazardous conditions shall be made by an authorized person (i) before taking

loading or cutting machines in by the open crosscut nearest the face; (ii) before applying power to machinery that remains at or near the face; (iii) before drilling with electric drills; (iv) before blasting; (v) after blasting, before other work is resumed; and (vi) at such other times as may be necessary or designated by the operator or mine inspector for adequate safety.

H. Pillar workings shall be examined by a certified person for methane and other hazardous conditions before a fall is made purposely. If methane can be detected at a level of one percent or greater with a permissible methane detection device, it shall be removed, if possible before the fall is made. Where it is not practicable to remove the gas before such fall is made, all electric power shall be cut off that portion of the mine that might be affected, and all miners except those necessary to complete the fall shall be removed from such area.

I. Daily and on-shift examinations of surface areas of underground coal mines shall be made in accordance with the requirements for daily and on-shift examinations at surface coal mines as provided in § 45.1-161.256.

§ 45.1-161.210. Weekly examinations.

A. At least every seven days, a mine foreman shall examine unsealed worked-out areas where no pillars have been recovered.

B. At least every seven days, a mine foreman shall evaluate the effectiveness of bleeder systems used under § 45.1-161.220.

C. At least every seven days, a mine foreman shall examine the following locations for hazardous conditions:

1. In at least one entry of each intake air course, in its entirety, so that the entire air course is traveled.

2. In at least one entry of each return air course, in its entirety, so that the entire air course is traveled.

3. In each longwall or shortwall travel way in its entirety, so that the entire travel way is traveled.

4. At each seal along return and bleeder air courses and at each seal along intake air courses not examined under § 45.1-161.208.

5. In each escapeway so that the entire escapeway is traveled.

6. On each working section not examined under § 45.1-161.208 during the previous seven days.

D. At least every seven days, a certified person shall:

1. Determine the volume of air entering the main intakes and in each intake split;

2. Determine the volume of air and test for methane in the last open crosscut in any pair or set of developing entries or rooms, in the return of each split of air immediately before it enters the main returns and where the air leaves the main returns; and

3. Test for methane in the return entry nearest each set of seals immediately after the air passes the seals.

E. Hazardous conditions shall be corrected immediately. If the condition creates an imminent danger, everyone except those persons necessary to correct the hazardous conditions shall be withdrawn from the area affected to a safe area until the hazardous condition is corrected.

F. Weekly examination is not required during any seven-day period in which no person enters any underground area of the mine. When a mine is idled or in a nonproducing status with entry only for maintenance of the mine, weekly examinations may be conducted in accordance with a plan approved by the Chief.

G. Except for certified persons required to make examinations, no person shall enter any underground area of a coal mine if the weekly examination has not been completed within the preceding seven days. The weekly examination may be conducted at the same time as the pre-shift examination.

H. The person making the weekly examinations shall certify by initials, date, and the time that the examination was made. Certifications and time shall appear at enough locations to show that the entire area has been examined.

I. At the completion of any shift during which a portion of a weekly examination is made, a record of hazardous conditions, their locations, and the corrective action taken, and the results and location of air and methane measurements shall be made. The record shall be made by the person making the examination or by a person designated by the operator and shall be countersigned by the mine foreman. If the record is made by a person other than the examiner, the examiner shall verify the record by initials and date. Records shall be retained for at least one year at a surface location at the mine and made available for inspection by department personnel and representatives of miners.

J. Examinations of surface areas of underground coal mines shall be made in accordance with the requirements for weekly examinations at surface coal mines as provided in § 45.1-161.256.

§ 45.1-161.212. Record of examinations.

A. Any hazardous condition found by the mine foreman or other certified persons designated by the operator for the purposes of conducting examinations under Article 14 (45.1-161.208 et seq.) of this

chapter shall be corrected immediately, or the affected area shall be endangered off until the condition is corrected. If the hazardous condition creates an imminent danger, all persons except those required to perform work to correct the imminent danger shall be withdrawn from the affected area. A record of the hazardous condition found and the corrective actions taken shall be made in a book maintained for this purpose on the surface at the mine. The record shall be made by the completion of the shift on which the hazardous condition is found.

B. Upon completing his the pre-shift examination, the mine foreman shall return to the surface or a designated station underground and report in person to an authorized person before other miners enter the mine. Immediately upon reaching the surface, the mine foreman shall record in ink or indelible pencil the result of his inspection in a book kept on the surface for that purpose.

C. At the completion of any shift during which a portion of a weekly examination is made, a record of hazardous conditions, their locations, the corrective action taken, and the results and location of air and methane measurements shall be made. The record shall be made by the person making the examination or by a person designated by the operator. If the record is made by a person other than the examiner, the examiner shall verify the record by initials and date.

D. The actual level of methane detected in any examination shall be recorded in the book.

E. A mine foreman or other certified person conducting a required examination shall record the results of his examination in ink or indelible pencil in a book kept on the surface for that purpose. Similar records may be kept at designated stations or offices underground.

F. Records shall be countersigned by the supervisor of the examiner creating the records. Where such records disclose hazardous conditions, the countersigning of the records shall be performed no later than the end of the next regularly scheduled working shift following the shift for which the examination records were completed, and the person countersigning shall ensure that actions to eliminate or control the hazardous conditions have been taken. Where such records do not disclose hazardous conditions, the countersigning may be completed within 24 hours following the end of the shift for which the examination records were completed. The operator may authorize another person with equivalent authority of the supervisor to act in the supervisor's temporary absence to read and countersign the records and ensure that action is taken to eliminate the hazardous conditions disclosed in the records.

G. All records of examination shall be open for inspection by interested persons and maintained at the mine site for a minimum of one year.

§ 45.1-161.216. Main fans.

A. The active workings of a mine shall be ventilated by means of main fans.

B. Main fans shall be (i) provided with pressure-recording gauges, (ii) installed on the surface in fireproof housings, and (iii) equipped with fireproof air ducts.

C. In addition to the requirements of subsection B, main fans shall either:

1. Be equipped with ample means of pressure relief, and be offset not less than ~~fifteen~~ 15 feet from the nearest side of the mine opening; or

2. Be directly in front of, or over, the mine opening; however, the opening shall not be in direct line with possible forces coming out of the mine should an explosion occur, and there shall be another opening having a weak-wall stopping or explosion doors that would be in direct line with the forces coming out of the mine should an explosion occur, such opening to be not less than ~~fifteen~~ 15 feet nor more than 100 feet from the fan opening.

3. In mines ventilated by multiple main mine fans, incombustible doors shall be installed so that if any main mine fan stops and air reversals through the fan are possible, the doors on the affected fan automatically close.

D. Main mine fans shall be provided with an automatic device to give alarm when the fan slows down or stops. This device shall be placed so that it will be seen or heard by an authorized person.

E. Main fans shall be on separate power circuits, independent of the mine circuit.

F. The area surrounding main fan installations shall be kept free of combustible material for at least 100 feet in all directions where physical conditions permit.

G. Except for repairs, main Mine fans shall be operated continuously day and night unless written permission is granted by the Chief for planned stoppages, except when intentionally stopped for necessary testing, adjustment, maintenance, or repairs while no miners are underground, or as otherwise approved by the Chief. If the main fan is intentionally stopped for testing, adjustment, maintenance, or repairs, the mine operator shall comply with the requirements set forth in the approved fan stoppage plan for that mine. If the main fan is stopped after all miners are out of the mine, the fan shall be operated for a period of at least two hours specified in the approved fan stoppage plan for that mine before any miner is allowed underground.

H. Where electric power is available, main mine fans shall not be powered by means of internal combustion engines; however, where electric power is not available or for emergency use, main mine fans may be powered with internal combustion engines, if (i) the fan shall be operated exhausting,

unless otherwise permitted by the Chief, and (ii) the engine operating the fan shall be offset at least ten feet from the fan and housed in a separate fireproof structure.

§ 45.1-161.218. Auxiliary fans.

A. The installation or use of ~~booster~~ *auxiliary* fans in any mine shall be prohibited, without the prior written approval of the Chief.

B. The Chief shall ~~prescribe the safeguards and conditions required for his approval of the use of~~ *booster, auxiliary or blower fans with tubing or diffuser, and to make acceptance and compliance with the requirements a condition of the approval. Failure to comply with requirements set forth in the approval will be a violation of this section. Machine mounted scrubbers and spray fan systems may be used for control of coal dust and to enhance ventilation. Such installations are not considered auxiliary fans.*

C. Blower fans with tubing shall not be used underground except to ventilate shaft and slope-sinking operations and their underground connections; the faces of fork tunnels driven between two coal beds or through faults and wants. Where permitted, blower fans with tubing shall be used as follows:

1. Each fan shall be powered with a permissible driving unit and installed on the intake-air side of the entrance of the place to be ventilated not less than sixteen feet from the nearest rib of such entrance;

2. The volume of air in which the fan is placed shall exceed the manufacturers' maximum rated capacity of the fan;

3. The fan tubing shall be maintained in good condition;

4. The discharge end of the tubing shall be kept as close to the face as is practical; and

5. Accumulation of methane shall not be moved by means of a blower fan and tubing, except in mines using auxiliary fans for ventilation.

§ 45.1-161.219. Volume of air.

A. The quantity of air passing through the last open crosscut shall be not less than 9,000 cubic feet per minute; provided, however, that the quantity of air reaching the last open crosscut in pillar-recovery sections may be less than 9,000 cubic feet per minute, if at least 9,000 cubic feet of air per minute is being delivered to the intake end of the pillar line.

B. The air current at working faces shall, under all conditions, have a sufficient volume and velocity to readily dilute and carry away smoke from blasting and any flammable or harmful gases *and dust*.

C. *In longwall and shortwall mining systems:*

1. *The quantity of air shall be at least 30,000 cubic feet per minute reaching the working face unless otherwise approved by the Chief; and*

2. *The velocity of air provided to control dust at designated locations on the longwall or shortwall face shall be maintained in accordance with the provisions of the mine ventilation plan approved by the Mine Safety and Health Administration.*

D. *Ventilation shall be maintained during the installation and removal of mechanized mining equipment.*

§ 45.1-161.225. Ventilation controls.

A. Ventilation shall be so arranged by means of air locks, overcasts, or undercasts that the passage of haulage trips or persons along the entries will not cause interruption of the air current. Air locks shall be ventilated sufficiently to prevent accumulations of methane therein.

B. Air lock doors that are used in lieu of permanent stoppings or to control ventilation within an air course shall be (i) made of noncombustible material or coated on all accessible surfaces with flame-retardant material having a flame spread index of ~~twenty-five~~ 25 or less as tested under ASTM E 162-187 and (ii) of sufficient strength to serve their intended purpose of maintaining separation and permitting travel between or within air courses or entries.

C. To provide easy access between the return, belt and intake escapeway entries, substantially constructed man-doors properly marked so as to be readily detected shall be installed in at least every fifth crosscut in the stopping lines separating such entries.

D. Doors shall be kept closed except when miners or equipment is passing through the doorways. Motor crews and other miners who open doors shall see that the doors are closed before leaving them.

E. Overcasts; ~~and~~, undercasts, *and regulators* shall be *well* constructed ~~tightly~~ of incombustible material, such as masonry, concrete, concrete blocks, or prefabricated metal. They shall (i) be of sufficient strength to withstand possible falls from the roof, (ii) be of ample area to pass the required quantity of air, and (iii) be kept clear of obstructions.

§ 45.1-161.228. Worked-out areas.

A. ~~The openings to worked-out areas shall be posted with danger signs to restrict entry.~~

B. ~~All worked-out areas shall be either sealed or ventilated.~~

C. ~~B.~~ Where practice is to seal worked-out areas, the sealing shall be done in accordance with sealing provisions of the approved bleeder plan.

§ 45.1-161.229. Air quality.

1166 A. All active workings shall be ventilated by a current of air containing not less than ~~nineteen and~~
1167 ~~one-half~~ 19.5 volume percent of oxygen; ~~not more than one-half volume percent of carbon dioxide~~; and
1168 no harmful quantities of other noxious or poisonous gases.

1169 B. The volume and velocity of the current of air in all active workings shall be sufficient to dilute,
1170 render harmless and carry away flammable, explosive, noxious and harmful gases and dust, smoke, and
1171 explosive fumes.

1172 § 45.1-161.233:1. *Intentionally bypassing safety devices; prohibition.*

1173 *No person shall intentionally bypass, bridge, or otherwise impair an electrical or hydraulic circuit*
1174 *that affects the safe operation of electrical or mechanical equipment. This shall not prohibit (i) a*
1175 *certified electrical repairmen from by-passing energized circuits for troubleshooting; (ii) an authorized*
1176 *person from performing repairs or maintenance on equipment once the power is off and the equipment*
1177 *is blocked against motion except where motion is necessary to make adjustment or to move the*
1178 *equipment to a safe location; (iii) an authorized person from bypassing a hydraulic circuit for the*
1179 *purpose of troubleshooting or moving equipment to a safe location in order to make necessary repairs*
1180 *or be taken out of service; or (iv) an authorized person from activating an override feature that is*
1181 *designed by the machine manufacturer to allow the machine to be moved to a safe location in order to*
1182 *make necessary repairs or be taken out of service.*

1183 § 45.1-161.236. Housekeeping; noxious fumes.

1184 A. Good housekeeping shall be practiced in and around buildings, shafts, slopes, yards and other
1185 areas of the mine. Such practices include cleanliness, orderly storage of materials, and the removal of
1186 possible sources of injury, such as stumbling hazards, protruding nails, broken glass and possible falling
1187 and rolling materials.

1188 B. Painting or operations creating noxious fumes shall be performed only in a well ventilated
1189 atmosphere.

1190 C. *All surface mine structures, enclosures, and other facilities shall be maintained in good repair.*

1191 § 45.1-161.256. Safety examinations.

1192 A. On-shift examinations of the work area including pit, auger, thin seam and highwall operations
1193 shall be conducted by certified persons once every production shift and at such other times or frequency
1194 as the Chief designates necessary for hazardous conditions.

1195 B. ~~On-shift~~ *Pre-operational* examinations of all mobile equipment shall be conducted by an
1196 authorized person.

1197 C. Pre-shift examinations shall be conducted by a certified person for certain hazardous conditions
1198 designated by the Chief.

1199 D. Mine refuse piles shall be examined daily by an authorized person on any day on which a person
1200 works at such location.

1201 E. The location of all natural gas pipelines on permitted surface mine areas shall be identified and
1202 conspicuously marked *so that equipment operators can readily see such lines*. Pre-shift examinations
1203 shall be conducted of the location of pipelines whenever ~~active workings are approaching the work area~~
1204 *approaches* within 500 feet unless otherwise approved by the Chief.

1205 F. Air quality examinations shall be conducted by a certified person when a surface coal mining
1206 operation intersects an underground mine, auger hole or other underground workings.

1207 G. Examinations for methane shall be conducted in surface installations, enclosures or other facilities
1208 in which coal is handled or stored once each production shift. Such areas shall also be tested for
1209 methane before any activity involving welding, cutting or an open flame. Examinations pursuant to this
1210 subsection shall be made by an authorized person certified to make gas tests.

1211 H. Electrical equipment and wiring shall be inspected as often as necessary but at least once a
1212 month.

1213 I. Fire extinguishers shall be examined at least once every six months.

1214 J. Areas of inactive surface coal mines shall be examined for hazardous conditions by a mine
1215 foreman immediately before miners are permitted to enter into such areas to take emergency actions to
1216 preserve a mine.

1217 § 45.1-161.257. Records of examinations.

1218 A. Documentation of examinations and testing conducted pursuant to § 45.1-161.256 shall be
1219 recorded in a mine record book provided for that purpose. Documentation shall include hazardous
1220 conditions found in the work area. However, examinations of fire extinguishers shall be conducted by an
1221 authorized person and documentation shall be accomplished by recording the date of the examination on
1222 a permanent tag attached to the extinguisher.

1223 B. The actual methane readings taken during examinations required under this Act shall be recorded
1224 in the mine record book.

1225 C. The surface foreman shall maintain and sign a daily record book. Where such reports disclose
1226 hazardous conditions, the surface foreman shall take prompt action to have such conditions corrected,
1227 barricaded, or posted with warning signs. ~~The reports entered into the book shall be read and~~

countersigned by the operator, or his agent.

D. Records shall be countersigned by the supervisor of the examiner creating the records. Where such records disclose hazardous conditions, the countersigning of the records shall be performed no later than the end of the next regularly scheduled working shift following the shift for which the examination records were completed, and the person countersigning shall ensure that actions to eliminate or control the hazardous conditions have been taken. Where such records do not disclose hazardous conditions, the countersigning may be completed within 24 hours following the end of the shift for which the examination records were completed. The operator may authorize another person with equivalent authority of the supervisor to act in the supervisor's temporary absence to read and countersign the records and ensure that action is taken to eliminate the hazardous conditions disclosed in the records.

When one individual serves in more than one position that is required to countersign such reports, he shall only be required to sign each report once.

E. All records of inspections shall be open for inspection by interested persons and maintained at the mine site for a minimum of one year.

§ 45.1-161.260. Housekeeping.

A. Good housekeeping shall be practiced in and around buildings, shafts, slopes, yards and other areas of the mine. Such practices include cleanliness, orderly storage of materials, and the removal of possible sources of injury, such as stumbling hazards, protruding nails, broken glass and material that may potentially fall or roll.

B. All surface mine structures, enclosures, and other facilities shall be maintained in a safe condition.

§ 45.1-161.264. Attention to injured persons.

A. Prompt medical attention shall be provided in the event of an injury, and adequate facilities shall be made available for transporting injured persons to a hospital where necessary.

B. Safe transportation shall be provided to move injured persons from the site where the injury occurred to areas accessible to emergency transportation.

C. The operator of each mine shall post directional signs that are conspicuously located to identify the routes of ingress to and egress from any mine located off of a public road.

§ 45.1-161.265. Fire-fighting equipment; duties in case of fire; fire precaution in transportation of mining equipment; fire prevention generally.

A. Each mine shall be provided with suitable fire-fighting equipment, adequate for the size of the mine and shall include at least three ~~twenty~~ 20-pound dry chemical fire extinguishers. Equipment and devices used for the detection, warning and extinguishing of fires shall be suitable in type, size and quantity for the type of fire hazard that may be encountered. Such equipment and devices shall be strategically located and plainly identified.

B. ~~Fire~~ Suitable fire extinguishers; suitable from a toxic and shock standpoint, shall be provided and placed at or on all (i) electrical stations, such as substations, transformer stations and permanent pump stations; (ii) self-propelled mobile equipment; (iii) belt heads; (iv) areas used for the storage of flammable materials; (v) fueling stations; and (vi) other areas that may constitute a fire hazard, so as to be out of the smoke in case of a fire.

§ 45.1-161.270. Safety measures on equipment.

A. Rubber tired or crawler mounted equipment shall have rollover protective structures to the extent required by 30 CFR 77.403a.

B. Seat belts provided in mobile equipment shall be maintained in all mobile equipment that are required to have rollover protective structures under subsection A safe working condition. Operators of such equipment shall wear seat belts when the equipment is in motion.

C. Mobile equipment shall be equipped with adequate brakes and parking brakes.

D. Cab windows shall be of safety design, kept in good condition and clean for adequate visibility.

E. Tires shall be deflated before repairs on them are started and adequate means shall be provided to prevent wheel locking rims from creating a hazard during tire inflation.

F. An audible warning device and headlights shall be provided on all self-propelled mobile equipment.

G. An automatic backup alarm, that is audible above surrounding noise levels, shall be provided on all mobile equipment. An automatic reverse-activated strobe light may be substituted for an audible alarm when mobile equipment is operated at night.

H. All equipment raised for repairs or other work shall be securely blocked prior to persons positioning themselves where the falling of such equipment could create a hazardous condition.

§ 45.1-161.273. Shop and other equipment.

A. The following shall be guarded and maintained adequately:

1. Gears, sprockets, pulleys, fan blades or propellers, friction devices and couplings with protruding

- 1289 bolts or nuts.
- 1290 2. Shafting and projecting shaft ends that are within seven feet of floor or platform level.
- 1291 3. Belt, chain or rope drives that are within seven feet of floor or platform.
- 1292 4. Fly wheels. Where fly wheels extend more than seven feet above the floor, they shall be guarded
- 1293 to a height of at least seven feet.
- 1294 5. Circular and band saws and planers.
- 1295 6. Repair pits. Guards shall be kept in place when the pits are not in use.
- 1296 7. Counterweights.
- 1297 8. Mine fans. The approach shall be guarded.
- 1298 9. Lighting and other electrical equipment that may cause shock hazards or personal injury.
- 1299 B. Machinery shall not be repaired or oiled while in motion; provided, however, that this shall not
- 1300 apply where safe remote oiling devices are used.
- 1301 C. A guard or safety device removed from any machine shall be replaced before the machine is put
- 1302 in operation.
- 1303 D. Mechanically operated grinding wheels shall be equipped with:
- 1304 1. Safety washers and tool rests.
- 1305 2. Substantial retaining hoods, the hood opening of which shall not expose more than a ~~ninety~~ 90
- 1306 degree sector of the wheel. Such hoods shall include a device to control and collect excess rock, metal
- 1307 or dust particles, or equivalent protection shall be provided to the employees operating such machinery.
- 1308 3. Eyeshields, unless goggles are worn by the operators.
- 1309 E. *The operator or his agent shall develop procedures for examining for potential hazards,*
- 1310 *completing proper maintenance, and properly operating each type of centrifugal pump. The procedures*
- 1311 *shall, at a minimum, address the manufacturers' recommendations for start-up and shutdown of the*
- 1312 *pumps, proper actions to be taken when a pump is suspected of overheating, safe location of start and*
- 1313 *stop switches, and actions to be taken when signs of structural metal fatigue such as cracks in the*
- 1314 *frame, damaged cover mounting brackets, or missing bolts or other components are detected. All miners*
- 1315 *who repair, maintain, or operate such pumps shall be trained in these procedures.*
- 1316 § 45.1-161.276. Loading and haulage work area requirements.
- 1317 A. Ramps and dumps shall be of solid construction, ample width, ample clearance and head room
- 1318 and shall be kept reasonably free of spillage.
- 1319 B. Berms or guards shall be provided on the outer bank of elevated haulage roads. *Berms constructed*
- 1320 *on or after July 1, 2005, shall be constructed of substantial material to the mid-axle height of the*
- 1321 *largest vehicle regularly used on the haulage road. The width and height of the berm shall be*
- 1322 *constructed on a two-to-one ratio when constructed of unconsolidated material. Other no-less effective*
- 1323 *methods may be used for berms.*
- 1324 C. Berms, bumper blocks, safety hooks or similar means shall be provided to prevent overtravel and
- 1325 overturning at dump stations.
- 1326 D. Dumping locations and haulage roads shall be kept reasonably free of water, debris and spillage.
- 1327 Water, debris or spilled material which create hazards to moving equipment shall be removed.
- 1328 E. *Haulage roads constructed on or after July 1, 2005, shall be constructed at least one and*
- 1329 *one-half times the width of the widest equipment in use, and those haulage roads used for passing shall*
- 1330 *be constructed at least three times the width of the widest equipment in use. In areas where this may*
- 1331 *not be possible, the foreman shall establish procedures for safe travel of haulage vehicles.*
- 1332 F. *Traffic rules, signals, and warning signs shall be standardized at each mine and posted. This shall*
- 1333 *include, but not be limited to, rules for the travel of on-road vehicles operating near off-road haulers in*
- 1334 *work areas.*
- 1335 G. *Dumping stations shall be designed to minimize backing and to provide for perpendicular travel*
- 1336 *to allow the equipment operator to observe the dumping station for changing conditions prior to*
- 1337 *backing. Reflectorized signs, strobe lights, or other available means shall be used to clearly indicate*
- 1338 *dumping locations.*
- 1339 § 45.1-161.277. Equipment operation.
- 1340 A. If truck spotters are used, they shall be well in the clear while trucks are backing into dumping
- 1341 position and dumping. Truck spotters shall use lights at night to direct backing and dumping operations.
- 1342 B. Dippers, buckets, scraper blades and similar movable parts shall be secured or lowered to the
- 1343 ground when not in use.
- 1344 C. Equipment which is to be hauled shall be loaded and protected so as to prevent sliding or
- 1345 spillage. When moving between work areas the equipment shall be secured in the travel position.
- 1346 D. Tow bars shall be used to tow heavy equipment and a safety chain shall be used in conjunction
- 1347 with each tow bar.
- 1348 E. Dust control measures shall be taken so as to not obstruct visibility of equipment operators.
- 1349 F. Dippers, buckets, loading booms, or other heavy loads shall not be swung over cabs of haulage
- 1350 equipment until the driver is out of the cab and is in a safe location unless the equipment is designed

specifically to protect drivers from falling material.

G. Mobile equipment shall not be left idling unattended; the wheels shall be turned into a bank or berm or blocked with the brakes set also.

H. Lights, flares, or other warning devices shall be posted when parked equipment creates a hazard for other vehicles.

§ 45.1-161.278. Control of dust and combustible material.

A. Where mining operations raise an excessive amount of dust into the air, water or water with wetting agent added to it or other effective methods shall be used to allay such dust at its sources.

B. Drilling in rock shall be done wet, or other means of dust control shall be used.

C. ~~Coal~~ Loose coal, coal dust, oil, grease, and other combustible materials shall not be permitted to accumulate excessively on equipment or surface structures.

§ 45.1-161.280. Transformers.

A. Unless surface transformers are isolated by elevation (eight feet or more above the ground), they shall be enclosed in a transformer house or surrounded by a suitable fence at least six feet high. If the enclosure or fence is of metal, it shall be grounded effectively. The gate or door to the enclosure shall be kept locked at all times, unless authorized persons are present.

B. Surface transformers containing flammable oil and installed where they present a fire hazard shall be provided with means to drain or to confine the oil in the event of rupture of the transformer casing.

C. Suitable danger signs shall be posted conspicuously at all transformer stations on the surface.

D. All transformer stations on the surface shall be kept free of nonessential combustible materials and refuse.

E. 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 and to maintain electrical equipment under the direct supervision of a certified person. *All high-voltage circuits shall be grounded before repair work is performed.* Disconnecting devices shall be locked out and suitably tagged by the persons who perform electrical or mechanical work on such circuits or equipment connected to the circuits, except that in cases where locking out is not possible, such devices shall be opened and suitably tagged by such persons. Locks and tags shall be removed only by the persons who installed them or, if such persons are unavailable, by certified persons authorized by the operator or his agent. However, employees may, where necessary, repair energized trolley wires if they wear insulated shoes and lineman's gloves. This section does not prohibit certified electrical repairmen from making checks on or troubleshooting energized circuits or the performance of repairs or maintenance on equipment by authorized persons once the power is off and the equipment is blocked against motion, except where motion is necessary to make adjustments.

§ 45.1-161.282. Circuit breakers and switches.

A. Automatic circuit breaking devices or fuses of the correct type and capacity shall be installed so as to protect all electric equipment and power circuits against excessive overload. Wires or other conducting materials shall not be used as a substitute for properly designed fuses, and circuit breaking devices shall be maintained in safe operating condition.

B. Operating controls, such as switches, starters, and switch buttons, shall be so installed that they are readily accessible and can be operated without danger of contact with moving or live parts.

C. Electric equipment and circuits shall be provided with switches or other controls of safe design, construction and installation.

D. Insulating mats or other electrically nonconductive material shall be kept in place at each power-control switch and at stationary machinery where shock hazards exist.

E. Suitable danger signs shall be posted conspicuously at all high-voltage installations.

F. All power wires and cables shall have adequate current-carrying capacity, shall be guarded from mechanical injury and installed in a permanent manner.

G. Power circuits shall be labeled to indicate the unit or circuit they control.

H. Persons shall stay clear of an electrically powered shovel or other similar heavy equipment during an electrical storm.

I. *All devices installed on or after July 1, 2005, which provide either short circuit protection or protection against overload, shall conform to the minimum requirements for protection of electric circuits and equipment of the National Electric Code in effect at the time of their installation.*

J. *All electric conductors installed on or after July 1, 2005, shall be sufficient in size to meet the minimum current-carrying capacity provided for in the National Electric Code in effect at the time of their installation.*

K. *All trailing cables purchased on or after July 1, 2005, shall meet the minimum requirements for ampacity provided in the standards of the Insulated Power Cable Engineers Association - National Electric Manufacturers Association in effect at the time such cables are purchased.*

§ 45.1-161.288. Inspection of electric equipment and wiring; checking and testing methane monitors.

1412 A. Electric equipment and wiring *that extend to underground areas* shall be inspected by a certified
1413 person at least once a week and more often if necessary to assure safe operating conditions, and any
1414 ~~defect~~ *hazardous condition* found shall be corrected *or the equipment or wiring shall be removed from*
1415 *service. This surface inspection is required for trailing cables and circuit breakers used in conjunction*
1416 *with such equipment and wiring.*

1417 B. The Chief may require the operator of a mine to functionally check on a daily basis methane
1418 monitors on electrical face equipment to determine that such monitors are de-energizing the electrical
1419 face equipment properly. Such check shall be made on each production shift and shall be conducted by
1420 the equipment operator in the presence of a foreman, and shall be recorded in the on-shift report of the
1421 ~~section~~ *surface* foreman.

1422 C. The Chief may require the operator of a mine to perform weekly calibration tests on methane
1423 monitors on electrical face equipment to determine the accuracy and operation of such monitors.

1424 § 45.1-221.1. *Definitions.*

1425 *As used in this chapter, unless the context requires a different meaning:*

1426 *"Coal refuse" means waste material resulting from the mining and screening or processing of coal.*

1427 *"Coal slurry" means waste water and impurities produced as the result of coal washing and*
1428 *preparation for market, containing a combination of coal, shale, claystone, siltstone, sandstone,*
1429 *limestone, or related materials that are excavated, moved, and disposed of from underground workings.*

1430 *"Dam" means an artificial barrier or obstruction designed to impound water, coal slurry, or silt to*
1431 *an elevation of five feet or more above the upstream toe of the structure, and has a storage volume of*
1432 *20 acre-feet or more, or is designed to impound water, coal slurry, or silt to an elevation of 20 feet or*
1433 *more measured at the open channel spillway or from the crest of the dam in a closed system, regardless*
1434 *of storage volume.*

1435 *"Impounding water" means to impound water that has been used in carrying out any part of the*
1436 *process necessary in the production or preparation of coal.*

1437 *"Operator" means any person who operates, controls, or supervises a water, coal slurry, or silt*
1438 *retaining dam or mine refuse pile impounding water.*

1439 *"Refuse pile" means a pile of coarse or fine coal refuse that is a result of the mining or screening*
1440 *process that may be stacked, spread, or graded, and covers a minimum of 20 acre-feet or more.*

1441 *"Silt" means fine particles resulting from a mining operation, suspended in or deposited by water.*

1442 *"Water" means liquid or slurry as a result of the processing of coal in mining operations.*

1443 § 45.1-222. Design and construction of water, coal slurry, or silt retaining dams or mine refuse piles
1444 impounding water; designs and other data to be submitted to the Chief.

1445 A. ~~On and after July 1, 1974, new~~ *Water, coal slurry, or silt retaining dams, or dams at mine*
1446 *refuse piles impounding water, or the modification of existing mine water, coal slurry, or silt retaining*
1447 *dams or mine refuse retaining dams piles impounding water shall be designed and constructed by, or*
1448 *under the direction of, a qualified licensed professional engineer, if such retaining dam or refuse pile:*

1449 1. *Is designed to impound water, coal slurry, or silt to a height an elevation of five feet or more*
1450 *above the lowest natural ground level within the impounded area upstream toe of the structure; and*

1451 2. *Has a storage volume of fifty 20 acre-feet or more; or*

1452 3. *Is designed to impound water or silt to a height an elevation of twenty 20 feet or more measured*
1453 *at the open channel spillway or from the crest of the dam in a closed system, regardless of storage*
1454 *volume.*

1455 *The design, construction specifications, and other related data, including final abandonment plans,*
1456 *shall be certified by the licensed professional engineer.*

1457 B. ~~Water or silt retaining dams or a mine refuse pile in existence prior to July 1, 1974, which~~
1458 ~~impound the volume of water or silt specified in subsection A of this section, shall, within 120 days~~
1459 ~~from July 1, 1974, be approved as structurally safe for the volume of water or silt impounded therein by~~
1460 ~~a qualified engineer. The operator shall, in accordance with the requirements of subsection A of this~~
1461 ~~section, make any construction modifications necessary to obtain such approval. No person shall place,~~
1462 ~~construct, enlarge, alter, repair, remove, or abandon such water, coal slurry, or silt retaining dam or~~
1463 ~~mine refuse pile impounding water until the operator has filed an application for and received approval~~
1464 ~~from the Chief for such construction or modification. However, routine repairs that do not affect the~~
1465 ~~engineering design criteria and safety of an approved water, coal slurry, or silt retaining dam or mine~~
1466 ~~refuse pile impounding water are not subject to the application and approval requirements.~~

1467 C. ~~Water and silt retaining dam or mine refuse piles, designs, construction specifications, and other~~
1468 ~~related data, including final abandonment plans, shall be approved and certified by the qualified engineer~~
1469 ~~specified in subsection A of this section, and by the operator or his agent.~~

1470 D. ~~The designs, construction specifications, and other related data approved and certified in~~
1471 ~~accordance with subsection C of this section shall be submitted for approval to the Chief. If the~~
1472 ~~submittal is approved by the Chief, he shall notify the operator in writing. If he disapproves, he shall~~
1473 ~~notify the operator with his written objections thereto and his required amendments. But in no event~~

shall the Chief fail to approve or disapprove the submittal within thirty days following the receipt thereof.

§ 45.1-224. Examination of water, coal slurry, or silt retaining dams or mine refuse piles impounding water; potentially hazardous conditions; plans to be submitted by operators.

A. All water ~~and, coal slurry, or silt~~ retaining dams or mine refuse piles *impounding water* shall be examined ~~weekly for by an authorized person, as defined in § 45.1-161.8, at least every seven days or as otherwise approved by the Chief. Each dam or refuse pile shall be examined for compliance with approved design and maintenance requirements,~~ visible structural weakness, volume overload and other hazards by a ~~qualified person designated by the operator.~~

B. After each examination, the authorized person shall promptly record the results of the examination in a book that shall be available at the dam or refuse pile, or other designated location, for inspection by the Chief or his authorized representative. All examination records shall include a description of any hazardous condition found and any action taken to abate any hazardous condition. Records shall be countersigned by the supervisor of the authorized person creating the records. Where such records disclose hazardous conditions, the countersigning of the records shall be performed no later than the end of the next regularly scheduled working shift following the shift for which the examination was completed, and the person countersigning shall ensure that actions to eliminate or control the hazardous conditions have been taken. The operator of the dam or refuse pile may authorize another person with equivalent authority of the supervisor to act in the supervisor's temporary absence to read and countersign the records and ensure that action is taken to eliminate the hazardous conditions disclosed in the records.

C. When rising water ~~and, coal slurry, or silt~~ reaches ~~eighty~~ 80 percent by volume of the safe design capacity of the dam or refuse pile, such examination shall be made more often as required by the Chief or his ~~designated agent~~ authorized representative.

BD. When a potentially hazardous condition exists, the operator shall *immediately* initiate procedures to:

1. Remove all persons from the area which may reasonably be expected to be affected by the potentially hazardous condition;

2. Eliminate the potentially hazardous condition; and

3. Notify the Chief *and other governing agencies* by the quickest available means *following the protocol established in the site's Emergency Notification and Evacuation Plan.*

C. Records of the inspections required by subsection A of this section shall be kept and certified by the operator or his agent. Such records shall be kept on the surface at the office or designated station of the mine.

DE. The operator of each coal ~~mine site~~ on which a water ~~and, coal slurry, or silt~~ retaining dam or mine refuse pile *impounding water* is located shall ~~adopt~~ submit a plan for carrying out the requirements of § 45.1-222 and subsections A and, B, C, and D of this section. ~~The plan shall be submitted for approval to by the Chief on or before October 31, 1974. The plan shall include:~~

1. ~~The designs, construction specifications, and other related data required under § 45.1-222.~~

2. A schedule and procedures for inspection of the retaining dam by a qualified person under normal conditions and under conditions that could cause flooding;

23. Procedures for evaluating potentially hazardous conditions;

34. Procedures for removing all persons from the area which may reasonably be expected to be affected by the potentially hazardous conditions;

45. Procedures for eliminating the potentially hazardous conditions;

56. Procedures for notifying the Chief *and other governing agencies*; and

67. Any additional information which may be required by the Chief.

EF. Before making any changes or modifications in the *approved plan* ~~approved in accordance with subsection D of this section,~~ the operator shall obtain approval of such changes or modifications from the Chief.

G. The Chief shall notify the operator in writing whether the operator's plan is approved or disapproved. If he disapproves the plan, he shall provide the operator with his written objections thereto and his required amendments.

§ 45.1-224.1. Emergency Notification and Evacuation Plan.

A. On or before July 1 of each year, the operator of any water, coal slurry, or silt retaining dam or mine refuse pile that impounds water that meets the criteria of subsection A of § 45.1-222 shall submit to the Chief an Emergency Notification and Evacuation Plan. If there are no changes to a plan at the time the updated plan is due, the operator may submit a notice that there are no changes to the plan in lieu of submitting an updated plan to the Chief.

B. The plan and attendant maps, appropriate for the level of hazard of the dam or refuse pile, shall describe the water, coal slurry, or silt retaining dam or mine refuse pile that impounds water and

1535 include:

- 1536 1. The name and address of the operator owning, operating, or controlling the structure.
1537 2. The identification numbers of the structure as assigned by the Chief, the Mine Safety and Health
1538 Administration, and the Office of Surface Mining.
1539 3. The location of the structure indicated on (i) a current United States Geological Survey 7
1540 1/2-minute or 15-minute topographic quadrangle map, (ii) an equivalent digital map, or (iii) a
1541 topographic map of a scale approved by the Chief.
1542 4. The name and size in acres of the watershed in which the structure is located.
1543 5. A description of the physical and engineering properties of the foundation materials on which the
1544 structure is to be or was constructed.
1545 6. The location of existing or proposed instrumentation.
1546 7. A statement of the runoff attributable to the probable maximum precipitation of six-hour duration
1547 and the calculations used in determining such runoff.
1548 8. A statement of the runoff attributable to the storm for which the structure is designed and the
1549 calculations used in determining such runoff.
1550 9. The locations of surface and underground coal mines, including the depth and extent of such
1551 workings, under and within 1,000 feet around the perimeter of the dam and area of impounded material,
1552 shown at a scale not to exceed one inch equals 1,000 feet.
1553 10. A map depicting the impoundment area, downstream and adjacent drainways, streambeds, roads,
1554 structures, and other public areas that might be affected should an accident occur at the impoundment.
1555 The map shall be at a scale not to exceed one inch equals 1,000 feet.
1556 11. The name of persons who are familiar with the plan protocols and can take actions necessary to
1557 eliminate the hazard and minimize the impact to miners, the community, and the environment.
1558 12. A location where a command and communication center can be established for the company
1559 team and emergency response personnel to report during an impoundment event.
1560 13. The location of potential evacuation centers where affected parties may take shelter during an
1561 impoundment event.
1562 14. An emergency contact list for agencies that would respond to an impoundment event.
1563 15. A list of miners, businesses, community buildings, residences, and other occupied buildings within
1564 the impact zone that could be affected by an impoundment event, or other effective means of identifying
1565 such impact zone.
1566 § 45.1-234.1. Permits; certain operations prohibited; certain measures required.
1567 A. No permits shall be issued under this title for any mining to occur (i) in an area where the
1568 topography and geology may result in danger to any residence or (ii) at night if or in an area where
1569 there is threat of potential danger to lives or property.
1570 B. Any permit issued under this title shall require (i) prior approval of a detailed plan to protect
1571 individuals and property outside of the permitted area from potential harm and the plan shall include
1572 but not be limited to review of old surface workings, old underground mine workings, slide potentials,
1573 flood and water runoff, and vibration of loose materials and (ii) construction of primary and secondary
1574 protective barriers along the perimeter of mining areas where harmful materials may become loose as a
1575 result of mining activities and pose a threat to lives and property outside of the permitted area.
1576 2. That §§ 45.1-161.120, 45.1-161.213, 45.1-221, 45.1-223, and 45.1-225 of the Code of Virginia are
1577 repealed.