



Final Regulation Agency Background Document

Agency name	Department of Mines, Minerals and Energy
Virginia Administrative Code (VAC) citation	4 VAC 25 - 40
Regulation title	Safety and Health Regulations for Mineral Mining
Action title	Technical Corrections and Amendments for Clarity, Consistency and Improved Safety Resulting from Periodic Review
Date this document prepared	February 5, 2009

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 36 (2006) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

Please provide a brief summary (no more than 2 short paragraphs) of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation. Also, please include a brief description of changes to the regulation from publication of the proposed regulation to the final regulation.

As a result of periodic review, the Department of Mines, Minerals and Energy (DMME) is amending 4VAC25-40, Safety and Health Regulations for Mineral Mining. The amendments are intended to improve this chapter by making technical corrections, clarifying unclear language, updating references, making the regulation internally consistent and consistent with the Code of Virginia, and strengthening certain provisions relating to mine safety. Sections to be strengthened relate to blasting, mine rescue, and construction and maintenance of mine structures.

Statement of final agency action

Please provide a statement of the final action taken by the agency including (1) the date the action was taken, (2) the name of the agency taking the action, and (3) the title of the regulation.

On May 19, 2009, the Department of Mines, Minerals and Energy amended 4VAC25-40, Safety and Health Regulations for Mineral Mining.

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly chapter numbers, if applicable, and (2) promulgating entity, i.e., agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.

The Department of Mines, Minerals and Energy is authorized to promulgate regulations necessary to the performance of its duties under §45.1-161.3 of the Code of Virginia. §§45.1-161.294 and 45.1-161.305 require that the Director of the Department promulgate regulations to ensure safe working conditions and practices at underground and surface mineral mines, respectively. This authority is mandatory.

Purpose

Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Detail the specific reasons it is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.

The purpose of the regulation at 4VAC25-40, Safety and Health Regulations for Mineral Mining, is to provide for the protection of persons and property on and around mineral (non-coal) mines. The proposed action is the result of periodic review. Even though no public comments were received during the review comment period, agency staff identified sections that would benefit from amendments as proposed herein. The amendments will improve this chapter by making technical corrections, clarifying unclear language, updating references, making the regulation internally consistent and consistent with the Code of Virginia, and strengthening certain provisions relating to mine safety. Because the regulation is specifically intended to protect persons and property from the effects of mining, the agency has determined that the proposed amendments are essential to protect the health, safety and welfare of citizens.

Substance

Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. A more detailed discussion is required under the "All changes made in this regulatory action" section.

This action will amend provisions of an existing regulation. Unclear language in various sections will be clarified. Sections identified for clarification are those dealing with examination and inspection of workings, compliance with regulations, repairing machinery, exposure to airborne contaminants, loaders in operation, scaling bars, and open flame restrictions.

Several sections will be amended to make them internally consistent with other sections and with the Code of Virginia. References to external documents and the Code of Virginia will be corrected to reflect more recent publication dates of those documents; references to federal and other agencies that have

changed their names will be updated. Corrections will be made to typographical and other technical errors.

In Part XV of the chapter, a number of sections will be moved to different articles to more efficiently organize the rules. Six sections dealing with mine rescue and evacuation will be moved from Article 2, Fire Prevention and Control, to Article 9, Safety Program. The heading for Article 6, Loading, Hauling, and Dumping, will be moved from the beginning of 4VAC25-40-3590 to the beginning of 4VAC25-40-3560 to fully encompass sections dealing with hauling. The heading for Article 10, Personnel Hoisting, will be moved from the beginning of 4VAC25-40-4090 to the beginning of 4VAC25-40-4070 to fully encompass sections dealing with hoisting.

During the periodic review, the agency identified sections dealing with mineral mine safety that would benefit from being strengthened. The agency intends to add a section requiring drill logs for boreholes intended for blasting. The agency also intends to amend other sections dealing with blasting to: require reporting of flyrock incidents; require review of drill logs before blasting; require that areas containing loaded boreholes be posted as well as barricaded, if not guarded; require that drill logs be kept as part of the blast record; and require that electronic detonation systems be of an approved type. Regarding underground rescue in mineral mines, the agency intends to amend and generally strengthen sections dealing with mine rescue stations, equipment, crews, and self-contained breathing apparatus. Also for the purpose of improved safety, the agency intends to add one new section requiring that structures be substantial and well maintained.

Issues

Please identify the issues associated with the proposed regulatory action, including:
1) *the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
2) *the primary advantages and disadvantages to the agency or the Commonwealth; and*
3) *other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, please indicate.*

The proposed action will provide certain advantages to the public, particularly those who live near or work in mineral mines. Strengthening sections dealing with preparations for blasting and requiring mine operators to have a plan to control the affects of blasting on adjacent properties are intended to control the effects of blasting on the public. The strengthening of mine safety provisions such as those dealing with underground mine rescue and self-rescue devices will improve worker safety. Correcting existing unclear, inconsistent, or incorrect language will make the regulation more accurate and easy to understand. No disadvantages are foreseen for the public.

Since the amended regulations will be enforced with existing personnel in existing programs, there will be no additional cost or any other anticipated disadvantages for the Commonwealth.

At least one of the amended provisions will cause some mineral mine operators to incur additional costs, but the magnitude of these costs is not considered by the agency to be excessive in proportion to the safety benefits returned.

Changes made since the proposed stage

Please describe all changes made to the text of the proposed regulation since the publication of the proposed stage. For the Registrar’s office, please put an asterisk next to any substantive changes.

No changes have been made since the proposed stage.

Public comment

Please summarize all comments received during the public comment period following the publication of the proposed stage, and provide the agency response. If no comment was received, please so indicate.

Commenter	Comment	Agency response
Sam Hollins, representing the Virginia Transportation Construction Alliance	Mr. Hollins served on the Regulatory Advisory Panel; at the public hearing, he stated that he appreciated the cooperation of the agency and the opportunity to participate in the process.	DMME representatives thanked Mr. Hollins for his kind remarks.

This was the only comment received during the comment period.

All changes made in this regulatory action

Please detail all changes that are being proposed and the consequences of the proposed changes. Detail new provisions and/or all changes to existing sections.

Current section number	Proposed new section number, if applicable	Current requirement	Proposed change and rationale
4VAC25-40-25		Refers to Mineral Mine Safety Law of Virginia, 1997 edition	Change to Mineral Mine Safety Law of Virginia, 2005 edition; updates reference to reflect most current edition.
4VAC25-40-90		Incorporates by reference National Electrical Code, 1996 edition, and Boiler and Pressure Vessel Regulations, 1995	Change to National Electrical Code, 2008 edition, and Boiler and Pressure Vessel Regulations, 2007; updates references to reflect most current editions.
4VAC25-40-120		Only the certified surface foreman may conduct the preshift examination	Change “surface foreman” to “mine foreman”; corrects the requirement and clarifies that it applies to both surface and underground operations; change “pre-shift examination” to “examination made at the beginning of each shift”; makes section consistent with subsequent sections.
4VAC25-40-130		The certified mine foreman shall examine workings for hazards at the beginning of each shift and make a record of the examination	Specifies that the report of examination shall include date, areas examined, time of examination, hazards found, and corrective actions taken, and that the record shall be signed by the foreman; clarifies expected

			contents of records of examination.
4VAC25-40-190		Mine employees shall comply with regulations	Change “mine employees” to “miners”; many workers are contractors and are therefore not actually employees of the mine; clarifies that the requirement applies to all workers
4VAC25-40-260		Areas containing hazards that are not “immediate” obvious shall be barricaded or posted with warnings	Change “immediate” to “immediately”; corrects an error in the existing language.
4VAC25-40-350		Energy sources other than those related to electricity or internal combustion shall be tagged out and signed during repairs	Add references to sections covering electrical and internal combustion energy sources; clarifies that those sources are also subject to tag-out requirements but are covered under separate sections. Changes “signed by the individuals doing the work” to “marked by means that identifies the individuals doing the work”; allows for greater flexibility in using various appropriate tag-out devices.
	4VAC25-40-365	New	New section specifies that structures shall be of substantial construction and maintained in safe condition; intended to improve the safety of workers.
4VAC25-40-410		Current language reads “Benches shall be wide enough to allow safe operation and passage equipment.”	Change to “Benches shall be wide enough to allow safe operation and passage of equipment.” Corrects a typographical error in the existing language.
4VAC25-40-720		Requires control of employee exposure to airborne contaminants by feasible engineering methods. If such methods are not available, requires an “approved program” to be implemented. Requires the wearing of “permissible” respiratory equipment	Clarifies that the “approved program” be one “of controlling employee exposure to airborne contaminants”; provides specificity to a previously vague passage. Replaces “permissible” with “approved”, and adds that the approved equipment be “appropriate for the hazard.” “Approved” is more accurate than “permissible”, which has a specific meaning in federal regulations, and “appropriate for the hazard” adds clarity.
4VAC25-40-780		Requires that structures for storing explosives shall be “constructed substantially”; requires reporting of unaccounted loss of explosives to U.S. Department of Treasury Bureau of Alcohol, Tobacco and Firearms	For consistency with other sections, changes language to “of substantial construction...”; for correctness, updates reference to federal agency that has changed its name to “U.S. Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives”.
4VAC25-40-800		Design of blasts shall prevent flyrock; blast sites shall be inspected and safeguarded before bringing explosives to the site.	Adds a requirement that flyrock incidents shall be reported to the Division of Mineral Mining immediately; this effort to increase public safety near mineral mines is in response to increased incidents of flyrock. For clarity and improved safety, another change specifies that the certified blaster in charge shall conduct the preblast site inspections and shall review drill logs of

			boreholes intended for blasting.
4VAC25-40-810		Detailed records of each surface blast shall be prepared and maintained by the certified blaster	Adds requirements that the blast record shall include drill logs of boreholes, timing of detonation for each detonator, and a record of all anomalies and actions taken to correct them. These changes are proposed for increased safety.
4VAC25-40-880		If seismic monitoring of blasts is not conducted, the maximum weight of explosives used will be limited using a scaled distance formula	Change language to state that seismic monitoring will be conducted unless calculated scaled distance exceeds 90; this reduces allowed ground vibration at inhabited buildings not owned by the mine operator, thereby decreasing likelihood of damage to neighboring properties.
4VAC25-40-890		Limits allowable air blast at nearby inhabited buildings to 129 decibels, or alternate limits as measured by microphones with different frequency responses	Set a single limit of 133 decibels as measured with a 2Hz or lower flat response microphone. This type of microphone is now standard on air blast measuring equipment; other types as listed in the existing language are no longer in use.
	4VAC25-40-893	New	Requires that mine operators maintain an action plan to control the affect of blasting on neighboring properties; intended to increase public safety.
	4VAC25-40-925	New	Requires that electronic detonation systems be approved by the Director and used according to manufacturer's instructions. This is a fairly new technology that is becoming more widespread; the new section assures that the types to be employed have been approved as safe.
	4VAC25-40-1095	New	Lists required information to be included in logs of drill holes intended for blasting; assures that logs adequately describe downhole conditions that may affect the safety of a blast. Intended to ensure safe blasting.
4VAC25-40-1600		Persons shall not work under buckets of loaders in operation	Expands requirement to include that persons shall remain clear of all operating mobile equipment, not just loaders; intended to improve worker safety.
4VAC25-40-2790		Miners shall test the rock walls of their working areas for loose material	Require testing of walls "where possible"; some areas are simply inaccessible, due to height, for example, and cannot be routinely tested.
4VAC25-40-2800		A bar of proper length and blunt on one end shall be provided for scaling, the removal of loose material	Replace "of proper length and blunt on one end" with "of proper length and design". Blunt may not be the most useful design for this purpose.
4VAC25-40-2980		Open flames and candles shall not be left underground	Remove reference to candles, which are no longer used in modern mining, and state that open flame torches shall be attended at all times while lit; this is a clarification for improved safety.
4VAC25-		Mines employing 75 or	Strike and insert language as new 4VAC25-

40-3050		more people underground shall be equipped with 10 sets of self-contained breathing apparatus or be affiliated with a central mine rescue station	40-4061 in Article 9; amend as noted below.
4VAC25-40-3060		Mines not maintaining their own rescue stations shall affiliate with a central or cooperative rescue station	Strike entirely; section is duplicative with new language in 4VAC25-40-4061.
4VAC25-40-3070		Mine rescue apparatus acceptable to MSHA shall be maintained for immediate use; equipment shall be tested monthly	Strike and insert language as new 4VAC25-40-4062 in Article 9; amend as noted below.
4VAC25-40-3080		Mines employing 75 or more people underground shall maintain at least two rescue crews and the crews shall train at least annually. Smaller mines shall have at least one person trained for every 10 working underground	Strike and insert language as new 4VAC25-40-4063 in Article 9; amend as noted below. Provision for small mines is now covered in new 4VAC25-40-4064.
4VAC25-40-3090		Rescue crews shall include supervisory personnel	Strike entirely; section is duplicative with new language in 4VAC25-40-4063.
4VAC25-40-3110		Mine evacuation drills shall be held every six months	Strike and insert language as new 4VAC25-40-4065 in Article 9.
4VAC25-40-3120		All persons who work underground shall receive annual training in evacuation plans	Strike and insert language as new 4VAC25-40-4066 in Article 9; amend as noted below.
4VAC25-40-3800		Ladders inclined more than 70 degrees shall have backguards, landing gates, and landings every 30 feet	Fixed ladders shall have the same safeguards as 4VAC25-40-1990 and 4VAC25-40-2000; makes ladder safety requirements consistent throughout chapter.
4VAC25-40-3830		Rescue areas shall be equipped with compressed air lines and water lines	Amend to "adequate air and water supplies"; allows for bottled air and water to fulfill requirement. Add requirement for telephones in refuge areas for improved communications during emergencies.
4VAC25-40-3840		Mines must have escape and evacuation plans	Add requirement that evacuation plans be available to affiliated mine rescue teams; specify information to be shown on mine maps included in the plans, including all underground workings, ventilation fans, refuge chambers, first aid and firefighting supplies, electrical controls, and fuel and explosives storage areas; require plans for fire prevention, warning, evacuation, and emergency medical assistance; require specific statement of location and availability of mine rescue personnel and their training.
4VAC25-40-3990		One-hour self-rescue devices shall be available	Amend to also require a written plan for the number, type, and location of self-rescue

		to underground personnel	devices, and that they be sufficient for the number of people working underground and the possible hazards of the mine; intended to improve worker safety.
4VAC25-40-4060		Workers required to go underground shall be trained annually in mine emergency procedures and the use of self-rescue devices	Clarify that emergency training shall be in applicable sections of U.S. Bureau of Mines Instruction Guide 19; specify that self-rescue training be given by a competent person using the same model of device as provided to worker; this ensures adequate training for emergencies.
	4VAC25-40-4061		Insert language from existing 4VAC25-40-3050 and amend to specify that affiliated mine rescue stations be able to provide two fully equipped mine rescue teams, and that such affiliation shall be in writing and approved by the Director; ensures adequate mine rescue capabilities.
	4VAC25-40-4062		Insert language from existing 4VAC25-40-3070 and amend to specify that records of equipment tests be kept for at least one year; makes consistent with other recordkeeping requirements in the chapter.
	4VAC25-40-4063		Insert language from existing 4VAC25-40-3080 and amend to clarify that each rescue crew shall be five persons; add requirement that rescue crews shall include supervisory and key mine personnel; this requirement is being moved from 4VAC25-40-3090 to simplify the organization of these sections.
	4VAC25-40-4064		Offer alternative mine rescue capabilities for mines with fewer than 75 people working underground, with approval of Director. This alternative lessens the burden on small businesses.
	4VAC25-40-4065		Insert language from existing 4VAC25-40-3110; mine evacuation drill shall be held every six months.
	4VAC25-40-4066		Insert language from existing 4VAC25-40-3120 and amend to clarify that all persons who work underground shall be instructed in evacuation plans; intended to improve worker safety.
4VAC25-40-4240		Wire ropes shall meet certain minimum strength requirements	Correct two typographical errors: in subsection 2, replace "0.005L " with "0.0005L"; in subsection 3, replace "Tail ropes" with "Tail ropes".
4VAC25-40-4260		Wire ropes shall be examined for damage	Correct one typographical error; in subsection E, second sentence, replace "subsection D" with "subsection B".
4VAC25-40-4400		Buckets used to hoist persons in shafts over 50 feet deep shall have safety catches and protective bonnets	Amend to specify that such buckets shall have adequate guide ropes; this is intended to improve worker safety.

Regulatory flexibility analysis

Please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

The agency considered the alternative of taking no action but determined that this would result in a regulation that was inaccurate, unclear, and inconsistent, and that would provide a lesser degree of worker and public safety than the proposed amendments. A less intrusive and less costly alternative for mine rescue plans for very small mines was considered, was determined to meet the essential purpose of the regulation, and has been included in the final action. In other amended sections, the agency has determined that establishment of less stringent compliance or reporting requirements, less stringent schedules or deadlines for compliance, simplification of compliance or reporting requirements, or otherwise treating small businesses different from other businesses regulated under this chapter would not achieve the essential purposes of the action.

Family impact

Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

The regulation at 4VAC25-40, Safety and Health Regulations for Mineral Mining, is intended to protect the health and safety of people working in or living near active mineral (non-coal) mines in Virginia. The current action, which is aimed at correcting, clarifying and strengthening this chapter, will increase the protection presently offered by the regulation. It will, therefore, provide additional protection to families who have members working in or living near mineral mines. The Department of Mines, Minerals and Energy anticipates that the action will have no impact on the authority and rights of parents, economic self-sufficiency of families, the marital commitment, or disposable family income.