Economic Impact Analysis
Virginia Department of Planning and Budget

4 VAC 25-20 – Board of Coal Mining Examiners Certification Requirements

Virginia Department of Mines, Minerals, and Energy

April 25, 2003

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.G of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.G requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. The analysis presented below represents DPB's best estimate of these economic impacts.

Summary of the Proposed Regulation

The General Assembly allows the Board of Coal Mining Examiners (BCME) in §45.1-161.28 of the Code of Virginia to promulgate regulations requiring certification of persons who work in coal mines and persons whose duties and responsibilities in relation to coal mining require competency, skill, or knowledge in order to perform their task in a manner that protects the health and safety of persons and property. §45.1-161.29 of the Code of Virginia allows the BCME to require examination of all applicants for certification. §45.1-161.34 of the Code of Virginia requires that BCME promulgate regulations establishing requirements for programs of continuing education for holders of certification.

The proposed regulation (1) broadens the scope of reciprocity agreements to include conditions set by the reciprocating party and the state of Virginia, (2) requires all underground shot firers and hoisting engineers to be recertified every five years, (3) amends the existing regulation to exclude certified underground electrical repairmen from performing electrical work

at surface locations, (4) requires all individuals seeking to get a gas detection qualification to demonstrate practical knowledge of mine gases in addition to taking the gas detection examination and demonstrating proper use of gas detection equipment, (5) requires advanced first-aid instructors to use materials and training aids necessary to deliver the required skills and training, (6) includes additional requirements to be met by BCME instructors who teach initial training and continuing education courses, (7) changes the length of time for which initial advanced first-aid certification is valid, and (8) removes a stipulation from the existing regulation that requires the Division of Mines to mail notices to certificate holders regarding continuing education and other requirements to be met in order to keep their certification valid.

The proposed regulation includes a number of administrative changes. The process of appearing for a segmented examination (such as the underground mine foreman and electrical repairman examinations that allow each segment to be taken separately) has been streamlined by requiring that a person retake any failed sections of the examination only after completing the first take of all segments. Notification requirements to be met by the Department of Mines, Minerals, and Energy (DMME) regarding the suspension or revocation of certification have been changed. Instead of mailing out a list of individuals whose certification has been suspended or revoked to all employers, DMME will now be required to provide the list only upon request. Prospective employers can also obtain the list by logging onto the DMME website.

The proposed regulation includes changes that make the existing regulation consistent with changes in the Code of Virginia. It also includes clarifying language such as specifically stating that individuals certified as general coal miners can work on the surface or underground depending on whether they are certified as surface or underground coal miners.

Estimated Economic Impact

(1) The proposed regulation broadens the scope of reciprocity agreements to include conditions set by the reciprocating party and the state of Virginia. Under current policy, DMME grants certification to individuals who are certified in states that accept Virginia certification and are applying for reciprocity in Virginia. Certification is granted without requiring the applicant to take and pass the certification examinations, other those sections relating to Virginia law. However, according to DMME, differences in certification requirements and state laws have led to problems with some out-of-state miners operating in Virginia. The proposed change will

allow states to negotiate reciprocity agreements in order to take into account the differences in state law. Specifically, DMME believes that where significant differences exist between states in the certification requirements for mine foremen, advanced first-aid training, and various electrical categories, the proposed regulation establishes additional requirements to be met before reciprocal certification is granted. Applicants for mine foreman reciprocity will be required to take the mining law and mine record sections of the Virginia certification examination, applicants for advanced first-aid reciprocity who hold a mine emergency technician certification from another state will be required to undertake additional training relevant to Virginia, and applicants for electrical reciprocity will be required to take the practical and mine electrical records sections of the Virginia certification examination. The regulation also allows additional requirements to be imposed on reciprocal certification in categories other than those mentioned above.

The proposed change is likely to make it more difficult to get certified through reciprocity, especially as a mine foreman, in advanced first-aid, and under the various electrical categories. This could discourage out-of-state miners from applying for reciprocal certification in Virginia and reduce the number of out-of-state miners working in Virginia. In 2002, 9 out of 46 initial certifications issued to mine foreman, 17 out of 105 initial certifications issued for advanced first-aid, and 7 out of 57 initial certifications issued for various electrical categories were done under reciprocity. Based on basic economic theory and evidence, fewer out-of-state miners working in Virginia would reduce competition and raise wage levels in Virginia. However, a slack labor market and widespread unemployment in the coal mining industry are likely to limit the likelihood of any increase in wage levels in the short-run. If other states respond by imposing additional conditions on miners certified in Virginia and applying for reciprocal certification, Virginia miners are likely to find it more difficult to get certified in those states, reducing their mobility and ability to work outside Virginia. However, to the extent that requiring out-of-state miners to meet certain Virginia-specific requirements reduces the risk to public health and safety and the environment from their activities, it will produce economic benefits. The net economic impact will depend on whether the benefits of having out-of-state miners familiar with Virginia-specific rules and regulations outweigh the costs of reducing competition (and raising wages) and the ability of Virginia miners to work outside the state.

(2) The proposed regulation requires certified underground shot firers and hoisting engineers to be recertified every five years. Under current policy, underground shot firers and hoisting engineers are certified for life. DMME believes that advances in technology and the attrition of skills over time make recertification necessary. Moreover, according to DMME, a large proportion of those currently certified as underground shot firers and hoisting engineers are not actively engaged in these activities. With the coal mining industry shrinking in Virginia, many individuals formerly employed by the industry have moved to other unrelated jobs. Thus, in order to ensure that certified underground shot firers and hoisting engineers keep their skills up-to-date, especially in the case of individuals no longer working in the coal mining industry, DMME believes it is essential to require recertification. To be recertified, underground shot firers will have to present proof of having performed activities related to their certification in two of the last three years preceding expiration, present verification of having completed an underground mine foreman or other continuing education that includes safety training in underground blasting, or retake and pass the underground shot firer examination. Hoisting engineers will be required to either present proof of having performed activities related to their certification in two of the last three years preceding expiration or retake and pass the practical demonstration section of the hoisting engineer examination.

According to DMME, currently there are 3,567 certified underground shot firers and 346 certified hoisting engineers. Based on factors such as the secular decline in coal mining jobs in Virginia in the last decade and the current age of some of the certificate holders, DMME expects approximately 10% of certificate holders to recertify. No fees will be charged for recertification.

The proposed change is likely to have a net positive economic impact. Underground shot firers and hoisting engineers who have been active in their profession will face a small additional burden of providing written proof that they have been engaged in these activities in two of the last three years. Individuals who have not been active as underground shot firers and hoisting engineers will face a more significant burden of retaking and passing the required examination or enrolling in the required continuing education classes. However, individuals who have not been active in their profession are more likely not to have kept their skills current and thus pose the greater threat to public health and safety and to the environment. Thus, the proposed change will have a net positive economic impact to the extent that it ensures that individuals operating as underground shot firers and hoisting engineers have the skills required to do their job in a

manner that is protective not only of their fellow miners but also of public health and safety and the environment. However, it should be kept in mind that most coal mining businesses probably find it in their interest to have highly qualified individuals working in areas where hazards from coal mine accidents can be catastrophic. Thus, the extent of the positive economic impact will be limited by the fact that these minimum standards may not be binding in most cases as firms would hire underground shot firers and hoisting engineers who have been active in their profession even if they were not required to do so.

(3) The proposed regulation amends the existing regulation to exclude underground electrical repairmen from performing electrical work at surface locations. Currently, individuals certified as underground electrical repairmen can work at both surface and underground locations. However, the current certification requirements for underground repairmen do not meet federal minimum safety standards for performing electrical work at surface locations. Thus, the proposed change is intended to make the regulation consistent with federal minimum safety standards. According to DMME, currently there are 4,740 certified underground electrical repairmen.

There is no data available at this time on the number of accidents caused by underground electrical repairmen working at surface locations. To the extent that federal minimum safety standards do provide some additional safety benefits compared to existing policy, the proposed change will have some economic benefits. It will reduce the risk to other miners and to public health and safety and the environment from underground electrical repairmen performing repairs at surface locations. If, on the other hand, there are no significant additional benefits from meeting federal minimum safety standards, the proposed change will only serve to reduce the flexibility of underground electrical repairmen to work at both surface and underground locations. In order to perform work at surface locations, they will now have to obtain certification as surface electrical repairmen or become certified as an electrical maintenance foreman. The net economic impact of the proposed change will depend on whether the additional benefits of meeting federal minimum safety standards outweigh the additional costs incurred by requiring underground electrical repairmen to get an additional certification in order to perform repairs at surface locations. The lack of data and studies at this time on the additional benefits of meeting federal safety standards over existing standards makes it impossible to

determine whether the proposed change will have a net positive or a net negative economic impact.

(4) The proposed regulation imposes an additional requirement on individuals seeking a gas detection qualification. In addition to taking the gas detection examination and demonstrating proper use of gas detection equipment, they will now be required to demonstrate a practical knowledge of mine gases. The required practical knowledge and the conditions for passing the practical examination are listed in a guidance document made available by DMME.

Following the 1992 mine explosion in a mine near Norton, Virginia that resulted in eight fatalities, changes to the Code of Virginia have tightened gas detection guidelines and requirements. DMME believes that taking the gas detection examination and demonstrating proper use of gas detection equipment alone is not adequate to prepare miners for working in mines and that practical knowledge of mines gases is essential for thorough gas monitoring.

The proposed change will affect individuals seeking to obtain a gas detection qualification. According to certification requirements specified in the regulation, individuals seeking certification under any category other than as a surface blaster, as an instructor, or for advanced first-aid are required to have taken and passed the gas detection examination. In 2002, 519 out of 1,555 applicants were required to take the gas detection examination. The practical examination will be conducted at no additional cost to applicants.

According to data published by the Mine Safety and Health Administration (MSHA), since 1970 there have been 16 coal mine disasters (mine accidents that claim five or more lives), of which 11 were due to an explosion in the coal mine. Moreover, according to MSHA, a major hazard associated with the mine explosions is the accidental ignition of coal dust and mine gases such as methane. Methane emission rates are often unpredictable because the interactions between geologic characteristics, mining and ventilation practices, and methane control systems vary considerably due to site-specific conditions. Thus, requiring miners to have a practical knowledge of mine gases is likely to reduce the risk of a catastrophic mine accident.

The proposed change is likely to have net a positive economic impact. Individuals with a practical knowledge of mine gases will face a small additional burden of demonstrating that they possess the requisite knowledge. Individuals without the requisite knowledge will face a more significant burden of taking and passing an examination testing their practical knowledge of the

mine gases. However, by not having the required knowledge to perform their jobs in a safe and secure manner, these individuals also pose the greatest threat to mine safety and to the safety and health of the public and the environment. Thus, the proposed change will have a net positive economic impact to the extent that it reduces the number of under-qualified individuals operating in coal mines and thus reduces the risk posed to other miners and to public health and safety and the environment from their activities. However, it should be kept in mind that most coal mining businesses probably find it in their interest to have highly qualified individuals working in areas where the consequence of coal mine accidents can be catastrophic. Thus, the extent of the positive economic impact will be limited by the fact that most firms would choose to hire mine workers with a practical knowledge of mine gases even if they were not required to do so.

(5) The proposed regulation requires advanced first-aid instructors to use materials and training aids necessary to deliver the required skills and training. While DMME provides a guidance document listing recommended apparatus to be used in advanced first-aid training classes, the existing regulation does not explicitly require it. Consequently, according to DMME, some instructors were ignoring DMME's recommendation and were teaching advanced first-aid without the necessary equipment. By explicitly requiring the use of equipment and materials recommended by DMME, the proposed change intends to close the existing loophole. According to DMME, the change will affect approximately 10 currently certified advanced first-aid instructors not using the required equipment. Moreover, DMME estimates that it may cost them up to $1,500 to purchase the necessary equipment and materials.

The American Red Cross offers a number of Occupational Safety and Health Administration (OSHA)-recognized advanced first-aid courses that have been adapted to meet the needs of different work environments. These include CPR training for professional rescuers, emergency response training, and training in the use of automatic external defibrillators. The demonstration and use of equipment such as breathing devices, resuscitation masks, and defibrillators are considered an essential part of these courses and necessary in order to impart the required skills.

The proposed regulation makes it mandatory for instructors teaching advanced first-aid to use necessary equipment and materials. Instructors currently using the required equipment will be unaffected by the proposed change. Only instructors not using the required equipment will

have to incur additional costs in purchasing the equipment. However, by providing inadequate advanced first-aid training, these instructors also pose the greatest risk to the safety of mine workers and to public health. By reducing the number of advanced first-aid instructors providing sub-standard training, the proposed regulation will ensure that students coming out of these classes are better trained to provide first-aid. The net economic impact of the proposed change will depend on whether the benefits of having miners better trained in advanced first-aid outweigh the costs of ensuring that they do. There are no studies or data available at this time on the benefits of providing first-aid training and/or different levels of first-aid training to coal miners. However, just one case of a life saved because of better first-aid training provided to miners would be enough to justify the increased costs.

(6) The proposed regulation includes additional requirements to be met by BCME certified instructors conducting initial training and continuing education courses. Individuals not certified in the areas that they are teaching will, if required, need to submit to a DMME review of the material they plan to teach. All BCME certified instructors will also be required to provide students with evaluation or critique forms. DMME has received complaints about the effectiveness of instructors, especially concerning instructors not certified in the areas they teach and advanced first-aid instructors not using necessary equipment. The proposed change is intended to improve the teaching performance of BCME instructors. Currently, there are 95 certified advanced first-aid instructors and 91 certified BCME instructors operating in Virginia.

The proposed change will affect only those instructors not providing training that meets required standards. Sub-standard training could result in under-qualified individuals working in coal mines and thus increase the risk they pose to their fellow miners and to the public and the environment in general. To the extent that the proposed change reduces the number of instructors providing substandard training, it is likely to result in better-trained coal miners and is thus likely to have a positive economic impact. Moreover, requiring instructors to provide students with evaluation forms will increase feedback and provide all instructors, not just substandard instructors, with the opportunity to improve their teaching performance and effectiveness. The net economic impact will depend on whether the benefits provided by the regulation in terms of more effective instructors and better-trained coal miners outweigh the costs associated with implementing the proposed change. There is no data available at this time that would allow us to determine the cost effectiveness of having DMME review teaching

material of instructors not certified in the areas they teach and of having instructors provide students with evaluation forms.

(7) The proposed regulation changes the length of time for which initial advanced first-aid certifications are valid. Under the existing regulation, an initial advanced first-aid certification expires at the end of the year in which the certification was issued. Under the proposed regulation, the certification will expire one year from the month in which it was granted. The proposed change will affect all applicants for initial certification in advanced first-aid. In 2002, DMME received 105 applications for initial certification in advanced first-aid.

The proposed change will have a small net positive economic impact. It will give all individuals with initial certification in advanced first-aid a full year before getting recertified. Under current policy, individuals obtaining initial certification in the second half of the year have less time before getting recertified than individuals obtaining initial certification in the first half of the year. Thus, the proposed change will give all individuals the same amount of time in which to get recertified regardless of the time of the year the certification was issued. Moreover, the proposed change is also likely to reduce the processing time for recertification applications by spreading out recertification requests over the year. According to DMME, under the existing regulation DMME was deluged with applications for recertification over Christmas and New Year.

(8) The proposed regulation removes a stipulation from the existing regulation that requires the Division of Mines to mail notices to certificate holders regarding continuing education and other requirements in order to keep their certification valid. According to DMME, coal miners tend to move around a lot, both within the state and across state lines, and tend not to update their mailing address very frequently. In the past, approximately 60% of notices mailed to certificate holders have been returned. The proposed change will put the onus of meeting requirements for keeping their certification valid on the certificate holders themselves. Information regarding recertification will be made available on the DMME website.

The proposed change is likely to have a net positive economic impact. It will provide some cost savings to DMME by not requiring them to mail out notices to all certificate holders. For the approximately 40% of certificate holders who did receive notices through the mail, information regarding continuing education and other requirements to keep certification up-to-

date will continue to be available at the DMME website, which is accessible from any public library and any computer connected to the internet.

Individuals working in the coal mining industry can create potentially serious public safety and environmental hazards from conducting their activities in an improper or inappropriate manner. The aim of the certification program is to enforce certain compulsory minimum standards for persons employed in the coal mining industry and to reduce the risk to public health and safety and the environment from their activities. According to DMME, fees charged to issue coal mining certifications cover approximately 10% of the costs of running the program. DMME charges applicants no fees other than a $10 examination fee. The cost of obtaining a certification can be viewed as part of the compliance cost incurred by an individual to ensure that the risk to public health and safety and the environment is minimized. Given that current revenues cover only 10% of the cost of the program, individuals certified as coalminers are not paying the actual compliance cost associated with their activities. Putting the onus of keeping the certification valid on certificate holders themselves transfers some of the costs of the certification from DMME to the certificate holders.

Transferring the cost will have a positive economic impact and result in more efficient use of resources. With some of the cost being subsidized by DMME, and hence the taxpayers, individuals operating in the coal mining industry are not paying costs commensurate with the risk posed to public health and safety and the environment from their activities. This could potentially result in many more unsuitable and unqualified individuals entering the industry than if certification fees better reflected actual costs or running the certification program. Thus, transferring more of the cost of certification to the certificate holders will ensure that individuals entering the industry are of a certain quality and the risk to public health and safety and the environment from their activities is kept at a level deemed appropriate.

Businesses and Entities Affected

The proposed regulation will affect all individuals and businesses involved in the coal mining industry.

Individuals certified outside Virginia now have to meet additional requirements before being granted reciprocal certification in Virginia. Broadening the scope to reciprocity agreements could potentially reduce the number of out-of-state miners coming to work in

Virginia, which in turn could reduce competition and raise wage levels in Virginia (in 2002, 50 miners applied for reciprocity in Virginia). If other states also decide to impose additional conditions on reciprocity, it could make it harder for Virginia miners to work outside the state. 3,567 certified shot firers and 346 hoisting engineers will be required to get recertified every five years. 4,740 certified underground electrical repairmen will no longer be allowed to work at surface locations. Individuals requiring a gas detection qualification as a condition for certification (all categories of certification other than surface blasters, BCME instructors, and advanced first-aid training require a gas detection qualification) will now have to demonstrate a practical knowledge of mine gases in addition to existing requirements (in 2002, 519 out of 1,555 applicants were required to take the gas detection examination). Advanced first-aid instructors will be required to use equipment and materials necessary to imparting the required first-aid skills (DMME estimates approximately 10 currently certified advanced first-aid instructors will be affected). BCME certified instructors (95 advanced first-aid instructors and 91 BCME certified instructors) will be required to meet some additional requirements in order to maintain their certification as instructors. Initial advanced first-aid certificate holders will have a full year before applying for recertification (in 2002, DMME received 105 applications for initial certification in advanced first-aid).

Localities Particularly Affected

The proposed regulation will affect all localities in Virginia. However, localities dependent on the coal mining industry will be particularly affected.

Projected Impact on Employment

The proposed regulation may have a small negative impact on employment. The result of modifying the reciprocity clause could eventually result in other states making similar modifications and thus making in harder for Virginia miners to work outside the state. Moreover, additional conditions such as requiring individuals applying for the gas detection qualification to demonstrate a practical knowledge of mine gases are likely to make it more difficult for individuals to be certified under certain categories of coal mining certification.

Effects on the Use and Value of Private Property

The proposed regulation could increase the cost of operating in the coal mining industry. Broadening the reciprocity clause to include additional requirements could restrict the number of

out-of-state miners operating in Virginia, potentially reducing competition and raising wages in Virginia. However, given slack labor market and widespread unemployment in the coal mining industry, the extent of any wage rise is likely to be limited. Moreover, provisions in the proposed regulation such as not allowing underground electricians to work at surface locations could make it more expensive for businesses to hire individuals certified in certain categories. Thus, the proposed regulation could potentially raise the costs of operation and lower the asset value of private firms engaged in coal mining.