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November 24, 2015

Ms. Sheila A. McConnel, Acting Director
U.S. Department of Labor - Office of Standards
Mine Safety and Health Administration
201 12th Street South, Suite 4E401
Arlington, VA 22209-3939

Re: Proposed Rule; Proximity Detection Systems for Mobile Machines in Underground Coal Mines; RIN 1219-AB78

Dear Ms. McConnel:

Attached are the comments of the United Mine Workers of America on the Proposed Rule for Proximity Detection Systems for Mobile Machines in Underground Coal Mines.

The UMWA appreciates the opportunity to participate in this important rulemaking and asks that you forward our comments to the appropriate person(s) in your Agency for consideration.

Sincerely,

Dennis O'Dell

Dennis O'Dell, Administrator
UMWA Department of Occupational
Health and Safety

Comments of the United Mine Workers of America
On the
Proposed Rule for Proximity Detection Systems for Mobile Machines in Underground Mines
December 1, 2015

The United Mine Workers of America supports the proposed rule for Proximity Detection Systems for coal hauling machines and scoops in underground coal mines. As MSHA points out miners are exposed to pinning, crushing and striking hazards when working near coal hauling machines and scoops. A total of 42 such deaths are attributed to these type accidents from 1984 to 2014. The proximity detection system would have prevented these accidents by stopping machine movement before miners were pinned, crushed or struck by the machine.

As the industry places more emphasis on increasing production with the use of bigger profile equipment and shuttle cars with sideboards, the requirement for proximity detection systems take on an even more urgent need. In the state of West Virginia just this year a bill was passed by the legislature which changed the WV state regulation to permit the use of sideboards on shuttle cars as long as a camera was installed on the equipment. Sideboards obstruct the machine operator's vision to the point that they have very little sightline of their surroundings or direction of travel. The operator has to rely on a camera screen to see what is around them and in their travel way. In mines with wet, muddy conditions, it becomes difficult to keep the cameras clear and functional. We lobbied against this proposal because sideboards will create an increased potential for accidents and cameras will not give the adequate measures of protection that proximity detection will provide. Consequently, the need for a proximity detection system takes on an increased urgency in light of the increased danger of pinning, crushing and striking hazards not only in West Virginia, but in the industry as a whole due to the limitations being placed on the machine operator's view of his surroundings.

The proximity detection system will be a great asset to mines in this country as it currently is in other countries. The United States needs to play catch up with

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the countries which are using these systems and benefiting from them. In the 70's and 80's the leading cause of mine deaths were roof falls until the introduction of the Automated Temporary Roof Support Systems (ATRS). There was a push back from industry concerning the reliability of the ATRS technology as there is today with the Proximity Detection Systems. Since the introduction of the ATRS it is rare to have a mine fatality attributed to a roof fall. Likewise, the proximity detection system can make a difference in eliminating pinning, crushing and striking fatalities.

Note should be made that recent data from the U.S. Bureau of Labor Statistics Career Trends identified the 25 occupations that had the most reported fatalities per 1,000 full-time workers from 2011 to 2013. Number twelve on the list was Mine Shuttle Car Operators. The Job Description was as follows: Operate diesel or electric-powered shuttle car in underground mine to transport materials from working face to mine cars or conveyor. The reported fatalities per 1,000 employees were 0.57. Emphasis should be placed on the fact that the data singles out the position of shuttle car operator and not simply a miner. This proves that pinning, crushing and striking accidents lead as causing the most fatal accidents, just as roof falls led in the 70's and 80's before the requirement of ATRS. The time for proximity detection systems is now. The industry must embrace this new technology to eliminate pinning, crushing and striking injuries and fatalities. The UMWA supports the use of these systems.

Throughout the proposed rule, MSHA asks specific questions regarding the use of Proximity Detection Systems. MSHA solicits comments on a number of issues in the proposed rule. Following is the UMWA's response to some of those issues.

Question - MSHA solicits information and data addressing whether scoops or coal haulage machines cause a hazard to miners on longwall working section such that they may require the use of proximity detection.

Answer - The issue involves whether the proposal should exclude longwall working sections. The proposal would exclude longwall working sections. It was written that somehow in MSHA's experience, coal hauling machines and scoops are not routinely used on longwall working sections.

The Union would disagree with this statement, in fact, on producing longwall sections, scoops are used routinely to haul supplies, timbers, and replacement parts if needed for repairs, water roadways, haul belt structure, and in some mining operations are scoops utilized for the use of daily transporting personal as well as transporting sick and or injured miners from the section. Scoops are also largely used on longwall non-producing set up and tear down sections. These are areas where a lot of potential hazards also exist. It is the Unions belief that MSHA should go back and revisit this area to confirm our statement. MSHA will discover that a scoop is a widely used piece of equipment on the producing--- and non-producing longwall sections. Therefore the Union insists that these areas also be included as scoops being covered by the use of proximity detection.

Question – MSHA solicits comments on whether the proposed requirements should apply to any mobile machines, other than coal hauling machines and scoops, in use on or off the working section. MSHA also solicits comments on whether the proposed requirements should apply to coal hauling machines and scoops in use off the working section.

Answer - The issue concerns whether mobile equipment used off the working section should require proximity detection. There are many construction projects that are done in outby areas of an underground mine. Those often involve belt drive installations, overcasts and ventilation control construction, clean-up of roof falls as well as many others. When a construction job is underway, many pieces of equipment are used including coal hauling machines, such as scoops, to haul supplies and move equipment. These projects will require a number of miners working in the vicinity as would be on a working section. Consequently, there would be as great exposure to miners in these areas as there is on a working section. For this reason, we recommend that the rule require proximity detection systems in construction areas outby the working section.

Question – MSHA solicits comments on other types of mobile machines that should be required to be equipped with proximity detection systems. MSHA specifically solicits comments on circumstances where it may be appropriate to

require loading machines, roof bolting machines, and feeder breakers to be equipped with a proximity detection system.

Answer – From personal working experience as a 20 year underground veteran miner, one of the machines MSHA requested as appropriate would be the loading machine. When I operated the loading machine on the section, there was a lot of foot traffic back and forth while loading coal and it wasn't always easy to see someone moving around the machinery. I personally have had near misses of injuring fellow miners who were passing by during the work day and know of many other operators who have had the same experience. Loading machines are the quickest moving machines on the sections and are all over the place in the manner of seconds. When a loading machine operator isn't loading coal, they are cleaning up loose coal along the ribs, pushing a pile of coal ready to load for the next shuttle car or scoop or backing up to pull miner cable slack. This creates a lot of potential for serious injury or even death, therefore they should be equipped with proximity detection devices.

Another piece of equipment which MSHA needs to include is feeders. The industry has already experienced fatal injuries involving feeders where miners were crushed while falling into them. Because of the lack of adequate protection currently provided as necessary to prevent these type of accidents, why would we wait until another failure causes more deaths before correcting? Therefore the union would insist that loading machines and feeders be included in the final rule.

Question – MSHA solicits comments on the number of persons who may be on the working section during a single shift.

Answer – As MSHA points out it estimates that there are seven miners per working section. The UMWA would agree that a normal working section crew would amount to approximately seven miners with the miner operator, roof bolters, shuttle car operators, and mechanic and section foreman and that there may be occasions when mine inspectors, mine examiners, surveyors, etc. need to visit the section which would increase that number. One would expect that a reasonable number of persons would be limited from entering the working area where

equipment is being utilized and some good sense measure used to limit a crowd of persons at any one time because of the exposure to moving equipment. But any time those visitors enter these area and if they are going to be in the area or route of travel of coal hauling equipment, proximity detection must be provided.

Question – MSHA solicits comments on the proposed phase-in schedules. MSHA also solicits comments on what, if any, modifications may be needed on mobile machines already equipped with proximity detection systems. MSHA also solicits comments on whether the modifications could be made underground, and whether there are any issues that may impact the proposed phase-in schedules.

Answer – The UMWA supports the transitional/phase-in time proposed by MSHA. Experience with proximity detection systems already exists in coal mines in the United States and on machines in mines in South Africa, Canada and Australia. The proposed 36 months will provide adequate time for equipment to be retrofitted with proximity detection systems in a shop or during rebuild. As with the transition for proximity on continuous miners, the phase-in period provides time for the mine operator to retrofit their equipment or add the proximity in normal rebuild operations.

Question – MSHA solicits comments on the propose training for miners who operate or work near machines equipped with proximity detection systems. Comments should address the type, frequency, and content of training in addition to which miners should be trained.

Answer – The Union has always been strong advocates of training and retraining miners when new technologies are introduced. We have learned that initial training has to be given prior to the implementation of the technology, actual hands on training once a miner is to operate or work around the system, and frequent retraining has to occur so that miners can retain and put to use what they have learned. Training must also take place if any changes or modification are made to the systems after the implementation of the devices. Ideally retraining should occur on a daily basis but at least once every quarter or more often if the miner

requests. Training and retraining must be separate of the operator's annual retraining programs. The best and safest workforce is a well-trained workforce. For that reason, incorporating ongoing training into operations can make employees aware of the importance of respecting the equipment while providing employees with helpful information about the devices.

Question – MSHA solicits comments on whether the Agency should require proximity detection systems on machines used in underground metal and nonmetal mines, and if so, which types of machines and in what timeframes.

Answer – The majority of the UMWA represented miners are coal miners, however, it is only logical that proximity detection at metal and nonmetal operations should be required on mobile equipment where miners are exposed to crushing, pinning and striking hazards associated with this equipment. The Agency has an obligation to examine this issue and extend its application.

Question – MSHA solicits comments on whether the Agency should require that miners wear reflective material to make them more visible to equipment operators and, if so, how much and where.

Answer – The majority of coal companies already require miners to wear clothing with reflective material on it. This has become standard requirement through some State Agency regulations and company policies to wear clothing with strips of reflective material on the arms, legs and torso areas of the clothes, and hard hats. Some companies even provide these type of reflective protection for the miners. The reflective material on clothing has made a vast improvement in the visibility of miners and should be a standard requirement. Other mines have gone a step further to require small strobe lights attached to the back of a miner's hat to make them more visible. All of these things have made the miner a lot more visible, however should not be considered as an alternative or to replace the proximity detection. Even though the miner's reflective apparel has made them more visible, there are still blind spots on the high profile machines being used. Further, the use of sideboards which have become commonplace obstruct the operator's view. The

requirement for reflective clothing is a needed improvement over the existing standard which only requires 6 square inches of reflective tape or equivalent on each side and back of a miner's hard hat (see 75.1719-4 (d)). Reflective material should be required on both the arms and legs and torso of miner's clothing. The benefit of making the miner more visible far outweighs any cost involved in complying with such a requirement. Therefore, we would support a standard to require miner clothing to have reflective material.

Question – MSHA solicits comments on whether to require a proximity detection system to cause the machine to slow before causing it to stop and, if so, what requirement would be appropriate. MSHA also solicits comments on effective methods or controls, working in conjunction with the proximity detection system, to protect the on-board operator from sudden stops. MSHA also requests comments on what types of machine movement the proximity detection system should stop, beyond movement related to tramming coal hauling machines and scoops.

Answer – The Union agrees with MSHA that the rule should reflect a mandate that the detection systems shall cause a machine to stop no closer than three feet from a miner as a minimum. Based on feedback from our members, this would provide a minimal distance and margin of safety between a machine and a miner to prevent pinning, crushing, or striking hazards. NIOSH's research on continuous mining machines and roof bolting machines where a minimum 3 foot distance from the machine is used, shows operators can substantially reduce their risk of being struck. Therefore the Union supports MSHA's three feet distance as a minimum.

Question – MSHA solicits comments on the exclusion zone for the on-board operator. MSHA also requests information on issues related to the use of coal hauling machines or scoops, equipped with proximity detection systems, to transport miners to the working section.

Answer – MSHA asked whether an exclusion zone should be considered for the on-board operator and further whether one should be considered for coal hauling

machines or scoops used to transport miners to the working section. It is only logical that the machine with proximity detection systems must provide an exclusion zone for the operator compartment, otherwise the machine would not function for the operator. Further, there are a number of low seam mines that use scoops to transport miners to their working section, some pull them along on the ground on conveyor belt in very low seams. In these situations, an exclusion zone should be considered for the area where miners are transported. The miners could then be required to don the miner wearable proximity unit when they get to the working section where the machines are being used to produce coal and perform work in the section. This is only understandable and the UMWA would not object to such an exclusion.

Question – MSHA solicits comments on the proposed requirement that the proximity detection system provide audible and visual warning signals on miner-wearable components and a visual warning signal on the mobile machines. Early research suggests that providing warnings at varying distances may be appropriate dependent on the machine speed. Machine operators often need to redirect their attention from the front to the rear of the machine, and in some cases, must switch seats when changing directions. As a result, a visual warning signal on the machine may not always be in the operator's direct line of sight. MSHA solicits comments on whether requiring audible warning signals in the machine would help assure that miners, including the machine operator, know that a miner is in the warning zone and the machine is about to stop. MSHA also solicits comments on whether requiring the use of a specific visual warning on the machine, e.g., strobe lights, clustered light-emitting diode (LED) lights, or other types of visual signals, would help assure that the visual warning alerts miners near the machine, including the machine operator.

Answer – The Union supports a mandate that both an audible and visual warning signal should occur when the machine is five feet and closer to a miner. Having both will assure the necessary margins of safety to allow miners an opportunity to be proactive and move away from the machine to avoid danger. With machines being so loud and the use of hearing protection, and audible may not always be heard. The same falls true with a visual warning depending on the location of

miners around the equipment. Having both will give an added protection. They should also be set up on a separate circuit so that if one fails or malfunctions, the other is working. Training is necessary and must be provided by the operator and manufacturer for miners to learn this task.

Question – MSHA considers the proximity detection system to be functioning properly when the system is working as designed and will cause the machine to stop before contacting a miner; provide audible and visual warning signals, distinguishable from other signals, that alert miners, including the machine operator, before causing the machine to stop; provide the required warning signals on the machine; and prevent movement of the machine, except for purposes of repair, if any machine-mounted component is not working as intended. MSHA solicits comments on the proposed requirement.

Answer – The Union supports that a proximity detection system should include a visual system diagnostics to indicate that the system is functioning properly. Each proximity detection system should also be able to perform self-diagnostics to identify software or hardware problems. Miner operators must be trained on the use of this function. A visual signal will allow miners to readily determine that a proximity detection system is functioning properly or not. The visual should be located so that the miner operator will be able to observe it from all locations that he is required to be placed during operations of his equipment. Training is necessary and must be provided by the operator and manufacturer for miners to learn this task.

Question – MSHA solicits comments on the proposed requirements. MSHA requests comments addressing whether requiring both an audible and visual warning signal is needed to assure that all miners on the working section know that the machine-mounted component is not functioning properly.

Answer – The Union supports a mandate that <u>both</u> an audible and visual warning signal should occur when the machine is within activation range of a miner. Having both will assure the necessary margins of safety to allow miners an

opportunity to be proactive and move away from the machine to avoid danger. With machines being so loud and the use of hearing protection, an audible may not always be heard. The same falls true with a visual warning depending on the location of miners around the equipment. Having both will give an added protection. They should also be set up on separate circuits so that if one fails or malfunctions, the other is working. Training is necessary and must be provided by the operator and manufacturer for miners to learn this task.

Question - Proposed §75.1733 (c) would address requirements for proximity detection system checks. MSHA solicits comments on the proposed requirement.

Answer – This proposal requires maintenance checks to be performed on both the machine-mounted components of the proximity detection system and the miner-wearable components. The checks are to be performed at the beginning of each shift, prior to its operation if not in use at the beginning of the shift or no later than one hour of shift change if the shift change occurs without an interruption in production. The UMWA supports this proposal. The proper function of the proximity system is crucial to protect miners from moving equipment, therefore it is only practical that the system must be tested for function prior to each shift.

Question – Proposed §75.1733(c)(2) would require that miner-wearable components be checked for proper operation at the beginning of each shift that the component is to be used and that defects be corrected before the components are used. MSHA solicits comments on the proposed requirements.

Answer – The Union supports this proposal. Because of the importance of operational checks, the proximity detection system must be checked before each shift and any defects corrected. The proximity detection system is essential to protect miners as they work around moving equipment. It is only appropriate that the system be checked for function and maintained in working order each shift it is used.

Question – MSHA solicits comments on the recordkeeping requirements in proposed 75.1733 (d).

Answer - The recordkeeping provision requires that the functional checks required by paragraph (c) be recorded, defects found and corrective actions taken before the end of each shift. This proposal also requires records to identify the persons trained in the installation and maintenance of proximity detection systems. The records must be maintained in a secure book or electronically in a secure computer system not susceptible to alteration and made available to authorized representatives of the Secretary and representatives of the miners. We would also insist that the individual or individuals recording these checks, sign and date the document when entered with the mine foremen counter signing. These records must be kept for one year. These are practical recordkeeping requirements and pretty much standard requirements for any other recordkeeping requirement in the standards. We support this proposal and think it is sufficient to provide proof that the proximity detection system has been checked and fixed if necessary.