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Robert Stone, Acting Director
Office of Standards, Regulations and Variances
Mine Safety and Health Administration
comments@msha.gov

Subject: Underground Mine Rescue Equipment and Technology RIN 1219-AB44

Dear Mr. Stone:

Kinross Gold USA, Inc. (Kinross) is providing written comments to the Request for Information (RFI) that the Mine Safety and Health Administration (MSHA) published in the January 25, 2006 Federal Register (71 FR 4224.) This RFI is seeking information on issues relevant to underground mine rescue equipment and technology. The following comments are based on Kinross' experience and expertise with hardrock underground mining operations. We currently operate an underground gold mine in Washington State and are developing an exploration decline in Nevada.

The following comments are being provided to respond to the issues and questions raised in the RFI.

A. Rapid Deploy Systems

Based on Kinross' experience, seismic detection systems are the most appropriate technology to use in an underground mine emergency to detect movement underground in order to locate personnel. NIOSH has been at the forefront in the development of this technology. Kinross urges MSHA to seek proper funds from Congress to ensure adequate future funding for seismic detection research programs and for research programs to develop other detection methods.

B. Breathing Apparatus

As stated in the RFI, mine rescue breathing apparatus manufactured by either Dragger or Biomarine are approved for use in the U.S. Equipment used for mine rescue in other countries may be suitable for use in the U.S. For example, there is a Polish-manufactured copy of Dragger equipment that may be suitable. However, Kinross would have reservations about using foreign-manufactured equipment that is not substantially similar to the currently approved Dragger or Biomarine devices.

The apparatus that Kinross uses, the Dragger-BG174A, is the best on the market. The Dragger BG174A has proven to be the most reliable unit for the past 40 years. Statements recently appearing in the media that have suggested there have been no improvements in this equipment are inaccurate. This equipment has been upgraded since its introduction to the industry.

Kinross understands that new models are available from the manufacturer, with the Dragger-BG-4 being the latest technology available. Although this unit has been proven to be effective, Kinross has concerns about the suitability and durability of the plastic parts in a life-threatening environment.

The best way to improve breathing apparatus would be to make it smaller and lighter. It would also be appropriate to expedite the NIOSH and MSHA testing and approval processes so that any improved

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technology could be made available sooner rather than later. The current two- to three-year testing and approval timeframes needs improvement.

C. Self-Contained Self Rescuers (SCSR)

Metal/non-metal mines are required to use self-rescuers that convert carbon monoxide to carbon dioxide. Coal mines use a different type of SCSRs that produce oxygen. The coal SCSRs are bigger and bulkier than the self-rescuer used in metal/non-metal mines. Both units are supposed to last one hour in extreme environments.

Based on Kinross' experience, the SCSR equipment used at the Sago Mine will typically not last for more than one hour if the person is exerting himself or is under duress. If coal-type SCSRs become required in metal/non-metal mines, some of which have raises and small openings, they will have to be made much smaller, lighter, and more able to withstand the everyday use in such mines.

Self-rescuers in metal/non-metal mines must be inspected every 90 days. Kinross feels this is an adequate inspection frequency as long as the mine has a system in place that requires immediate reporting of any damage to a self-rescuer unit. Kinross believes it is appropriate to continue the current practice of having MSHA, NIOSH and the manufacturer determine the service life. Maintaining regular inspections is an integral component of realizing the maximum service life.

D. Rescue Chambers

There is no one-size-fits-all approach to rescue chambers. The size, permanency, and location of the chambers need to fit site-specific conditions at a given operation. Additionally, what works in an underground metal/non-metal mine may not be appropriate or optimal for a coal mine.

Kinross suggests one option that merits consideration is to store oxygen in each refuge chamber. The oxygen requirement for one person, while sitting in a stressful situation, is .42 liters per minute. One jumbo bottle of oxygen will supply 60 people for 12 hours. This suggestion would not require mine operators to supply enormous amounts of oxygen in the underground environment. A simple chart placed in each rescue chamber would show the oxygen flow needed for number of employees present.

E. Communications

Developing better, lighter, and less expensive communication systems should be an ongoing goal. Existing systems should be improved and the feasibility of developing new systems should always be considered. The best system to use at some mines is the "leaky feeder" system which allows constant communication as long as the wires are intact and personnel are in line of sight of the leaky feeder cable.

Another system in use is the pager phone system. This requires a hard line, but the line can be spooled out as the teams advance or connection can be made into existing lines.

Regular uhf- or vhf-radio systems will only work for short distances in underground areas. Information transmitted from the team to the command center should go through the team coordinator, (i.e., the fresh-air base attendant). He/she is trained as a team member and understands what the team is saying. Any command center should have security and if pager phones are being used only the phone in the command center should be active.

The communication through the speaking diaphragm in the Dragger mask works well if the person holds the receiver close to the speaking diaphragm.

MSHA should look into a better system for after-hour notification. Past experience shows that the answering services now in use are not knowledgeable about the industry and take a long time to notify MSHA officials.

A personal emergency device (PED) system was tested in the Idaho Silver Valley in the early 1990's. A transmitter wire was strung on the surface at the Bunker Hill Mine and signals were attempted to be sent underground in the Russell Tunnel area. This was approximately 500 feet underground. This test was a total failure because no signal was received. Development of an inexpensive and effective location device would be a significant achievement. Unfortunately, Kinross is not aware of such a system that is suitable for use in deep mines.

F. Robotics

Kinross does not favor expanding the role of robotics in underground mine rescue. Until a system is developed that will work in an actual mine environment, this technology should not be allowed to hold up a rescue operation to experiment to see if it will work.

G. Thermal Imagers and Infra-Red Imagers

Kinross does not feel that this equipment would be particularly useful at most metal/non-metal underground mine settings. In most incidents in hard rock mines, the location of the problem is fairly evident. Therefore, knowing if it an area is hot is not going to be of much use.

H. New Mine Rescue Equipment

Kinross strongly supports the need to develop new mine rescue equipment. We are, however, concerned that the protracted NIOSH/MSHA review and certification process currently acts as a disincentive that is limiting private-sector interest in developing new technology. Additionally, the limited size of the potential mining industry market may also be impeding technology development. Kinross strongly urges MSHA to evaluate ways to remove these disincentives. Kinross also recommends that MSHA work closely with the appropriate Congressional committees to secure sufficient funds for federal mine safety research programs.

I. Mine Rescue Teams

The equipment that a mine rescue team needs is spelled out in 30 CFR Part 49. Some of the listed items, such as the 1000' communication line that can be used to signal the Fresh Air Base, are no longer optimal. Mine rescue teams are currently required to use a communication line spooled out with head sets attached to the team captain and fresh air base attendant. This assures constant communication with the team. However, the cable is an extra obstacle that the team has to worry about while exploring the mine. A system without the cable would speed up the exploration process. Kinross urges MSHA to focus on developing better technology to replace the current communication cable system.

It is Kinross' understanding that MSHA uses different rules for rescue operations in coal mines versus metal/non-metal mines. In coal mines, we understand that MSHA personnel directly participate as a

member of the rescue team during the exploration process. Once the team gets back to the fresh-air base, the MSHA personnel have to discuss the objective with the next team.

In contrast, in metal/non-metal mine rescue situations, MSHA personnel are not directly involved in the mine rescue. Rather, they participate in as observers. This means that the team returning to the fresh-air base hands an exploration mine map to the next team. The team then decides where they need to explore so they can tie unexplored areas together with a systematic approach. It is essential to tie all access together to assure there are no unexplored areas of the mine that could trap the team due to fire.

From our perspective, the rules for metal/non-metal mines work better because they allow each mine rescue team to advance using information provided by the previous team. This results in a faster rescue with better results. The mine rescue team members are trained as a group and work best when working together, without outside interference.

Kinross feels that a minimum of 12 apparatus at each station is enough. If mines in close proximity can respond with more equipment there is not a need for more. The major problem now is the cost of new apparatus. To outfit a team (12 apparatus) will cost the operator \$100,000. The requirement that the station have 12 battery lamps is redundant. This came from the time of the carbide light. Each mine has an adequate supply of mine lamps for their crew and in case of an emergency they will be available for the rescue teams. Gas detectors are important and at least two should be required. The 30 day checks on the apparatus are adequate.

Most mine rescue team members are acquainted with mining equipment used in the industry. If necessary or if different equipment is used training can be done on site.

With the BG174A being phased out in 2012 many mines will be caught in a financial bind. This will cost mining companies a great deal to replace the old units. Kinross suggests that MSHA provide assistance with the purchase of the new units.

J. Government Role

Any new technology that will help a mine rescue team is welcome. Perhaps the Department of Defense can be contacted to see if they have any new communication devices that will work underground.

During production mining at Kinross' Kettle River Operations in Ferry County, Washington, we had two fully qualified teams at all times. We have fifteen-Dragger BG-174A's that are benched on a monthly basis so they are always ready to be used in an emergency situation.

The Kettle River Operations is also a member of Central Mine Rescue. Central Mine Rescue has the expertise of no less than eight to fifteen fully qualified mine rescue teams from other metal/nonmetal properties. Being a member of this highly qualified group expedites the response time in a mine emergency.

Small and remote mines are a special problem. Some are located in areas with no mine rescue capability. MSHA needs to take this into account when allowing small and remote mines to operate. The response time to a remote area will take longer, but the mines still need to be covered. Miners receive refresher training each year. Crew meetings and other safety meetings can address underground emergency in the other months. Most mines have emergency supplies on site. As few regulatory initiatives as possible should be brought about by these disasters. If existing rules are

updated and manufacturers are allowed to bring new technology to the industry incidents will decrease.

Conclusion

Kinross appreciates the opportunity to respond to the RFI and hopes the comments we are providing herein are useful. Kinross feels it is important for MSHA to recognize that a one-size-fits-all approach to any of the topics covered in the RFI is not appropriate. There are significant differences between coal and metal/non-metal mines that need to be considered in developing any new technologies or requirements.

Kinross stands ready to work with MSHA to address ways to improve underground mine rescue equipment and technology in metal/non-metal mines. Please do not hesitate to contact me if you have any questions concerning this response to the RFI or if we can be of further assistance.

Sincerely yours,

/s/ Rick Baker

Senior Vice President Environmental, Health & Safety