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**VIA FACSIMILE – 202-693-6111**

The Honorable Elaine L. Chao  
Secretary of Labor  
U.S. Department of Labor  
200 Constitution Ave., NW  
Room S-2018  
Washington, DC 20210

Dear Secretary Chao:

I am writing in connection with the emergency temporary standard (ETS) issued by the Mine Safety and Health Administration (MSHA) on May 22, 2007 concerning the sealing of abandoned areas of underground coal mines. This rule has gone into effect while comments are being solicited on a more permanent standard. Pursuant to the MINER Act, you are required to issue that permanent standard by December 15 of this year.

This is an extremely important rulemaking, and the law vests this responsibility with you. Sealing abandoned areas is a fairly recent practice in the history of coal mining, and it is now apparent to everyone that prior requirements have left us with more than 10,000 potentially catastrophic sealed areas underground. Your recent internal reports on the Sago and Darby tragedies note that agency did not see the warning signs that there may have been a problem with those existing requirements, and so did not take the necessary actions to prevent disaster. While we do appreciate the actions that have been taken to date to increase the safety requirements for mine seals, including the issuance of an ETS, the Department owes it to those who died, to their families, and to all mine workers and their families to take this opportunity to look at all the evidence developed about the risks of sealing abandoned areas and to get it right this time.

The basic facts of the situation are fairly straight-forward. When an area is sealed, methane naturally emitted from the mine builds up behind the seal. When the methane constitutes about 5-15% of the atmosphere in any location behind the seal, it is explosive and a single spark can ignite it.<sup>1</sup> As the methane concentration increases, it becomes inert, and cannot explode even if there is an ignition source. To ensure a margin of safety, however, the seal must be well designed and

<sup>1</sup> We understand there is new data indicating that while this is the most volatile range, the gas can also be explosive in the broader 2-20% range.

well constructed to avoid destruction by the resulting explosion. Depending upon the circumstances, NIOSH has determined seals may have to be able to withstand an explosion generating as much as 640 pounds per square inch of pressure.

As a result, three actions have been recommended by the National Institute for Occupational Safety and Health (NIOSH) to avoid the kinds of tragedies experienced last year:

- 1) Remove all potential sources of sparking located behind seals or reaching into sealed areas;
- 2) Ensure that enough methane or similar gas is present or inserted into each sealed area to render it inert; and
- 3) Design seals to withstand higher pressures than at present in case an explosion does occur, and ensure they are properly constructed.

There is one additional problem that needs to be addressed. A sealed area which is inert one day may not be inert the next day, or even the next hour, because the seal constantly "breathes" as the atmospheric pressure inside and outside the seal changes. Such changes in pressure occur due to weather conditions outside the mine and even normal atmospheric changes during the day. The pressure differentials can cause the seal to "in-gas" oxygen into the sealed area, reducing a previously inerted atmosphere to an explosive level behind the seal as the methane concentration decreases, or they can cause the sealed area to "outgas" (with the same result). Accordingly, this leads to two related recommendations:

- 4) Ensure the levels of gas behind the seal are far enough outside the explosive range to ensure they don't dip into the explosive range during foreseeable changes in atmospheric pressure; and
- 5) Monitor the gas ranges behind the seal, and adjust them as necessary, to ensure they stay in the non-explosive range.

The emergency temporary standard issued on May 22, 2007 contains elements addressing each of these recommendations. It appears, however, that there is evidence you have failed to address in your review which necessitates the final rule take a more stringent approach in order to protect miners from the significant risk they face:

1. MSHA notes in the preamble that: "Metallic material can provide a conduit for electrical current to enter the sealed area and ignite methane/air mixtures. It is necessary to limit the use of conductors that may pass around or across seals. Screen, straps, rails, channels, and water pipers are typical metallic materials that are required to be removed under the ETS." 72 FR 28809. However, the ETS includes no requirements concerning the composition of the sampling that are required by other provisions of the rule to extend deeply into abandoned areas; indeed, it specifically permits gas sampling pipes to be metallic. Nor

does the preamble indicate whether requiring the use of alternative piping materials was considered. The required sampling is critical, but MSHA should at least consider requiring the use on non-metallic materials for this purpose in light of the acknowledged risks of using metal. The same is true of water drainage pipes.

2. The most critical period for many seals would appear to be that immediately after initial construction or repair is complete. Many seals may require time to "cure" following construction, rendering them particularly vulnerable to explosion during this period. At the same time, the methane behind the seal is beginning to build up and will go through the explosive range until it is concentrated enough to become inert. The ETS, however, does not specify what actions have to be taken by mine operators during this critical time – e.g., evacuating miners for a period of hours or days, while closely monitoring methane levels behind the seal or by inerting the area once the seal has set. Rather, these decisions will be made by each district office in its review of the "action plans" each mine operator is to submit, together with a gas monitoring "protocol", with the mine ventilation plan. Mine ventilation plans are approved by individual district offices. This imposes a new and highly technical obligation on district offices that are continuing to suffer from resource deficiencies as the agency brings in a new generation of staff, and which internal accident reports have documented sometimes are assigning existing plan specialists to do regular inspections. Moreover, those internal reports document that performance of the offices currently varies widely. Given the scope of that problem at this time, MSHA should provide more specificity in the rule itself about the actions required by mine operators at least during the critical period immediately following seal completion.
3. The preamble to the ETS does not explain why MSHA chose to disregard key recommendations of NIOSH on the strength of unmonitored seals. NIOSH recommended that unmonitored seals "where there is a possibility" of methane-air detonation be able to withstand pressures of 640psi. NIOSH only recommended a strength of 120psi for unmonitored seals where there is "little likelihood of detonation." MSHA has elected not to incorporate these recommendations. Instead, it has adopted an approach where most unmonitored seals have to meet a strength of only 120psi, and only in special cases must a stronger seal be provided. MSHA cites as the basis for this rule its "experience" and "accident reports" over the last 30 years, but without referencing the critique in its own internal reports on the Sago and Darby tragedies about its failures over that time to see the real potential for explosions (which should, by the way, be part of this rulemaking's record). That is why the work by NIOSH over the last year is so important, and its recommendations so critical.

The agency compounds this error by providing way too much discretion on highly technical questions to district directors. Under the proposed rule, each district director must determine if a stronger seal is required in a particular mining situation, and then determine how strong that seal must be. Following the release of the recent internal reports on the Sago, Aracoma Alma

and Darby reports, the last thing MSHA should be doing is imposing upon district directors questions of life and death that necessitate complex engineering questions for which they do not have the expertise, and which will lead the parties to challenge the consistent application of policy around the country.

In our view, the only safe way to deal with this situation is to require that all seals be monitored. While this goes beyond the NIOSH recommendations, MSHA is obligated to examine this approach because of the protection it provides, and it should do so in its rulemaking. As you are aware, we have introduced legislation that would ensure such a requirement is included in the rule.

MSHA has advised us orally that it is going to inspect seals during construction to be sure they are built in accordance with the approved plans, but there is no requirement in the rule that the operator not complete the seal until this has been done, nor is there any estimate of the additional resources MSHA will need to implement this requirement. We believe it is very important that MSHA perform this activity, and it should word its rule accordingly and request the resources to do the job properly.

4. One way to reduce the possibility that a detonation may occur is to keep the methane-air behind the seal so far away from the explosive range that changes in pressure conditions due to foreseeable events. For example, keeping the methane concentration above 50% could be considered a significant insurance policy that it will not foreseeably fall into the 5-15% explosive range. The rule does specify a range during which monitoring is required more frequently than normal, but the specified range does not provide the kind of margin of safety that would prevent swings into the explosive range from normally foreseeable events, such as weather storms.
5. The frequency of monitoring would be critical in any event, but it is even more critical in a rule with the weaknesses noted above. MSHA has failed to provide any scientific rationale for the provisions of the rule that only weekly monitoring is needed, and then only when the barometric pressure is decreasing or the seal is outgassing. It is our understanding that very significant pressure changes take place every day, and often in a short period of time. We strongly encourage MSHA to consult with NIOSH in this regard, to supplement the record on this point without further delays, and to ensure that the monitoring required in the final rule really protects miners on a constant basis. Most underground seals are likely going to end up with some monitoring, so it is vital that the monitoring system work properly. In this regard, while the ETS apparently contemplates that mine operators can use automated gas monitoring systems capable of continuous gas monitoring for this purpose, we can find no discussion by MSHA of whether it considered requiring all or some categories of underground mines to use such systems for this purpose, nor any discussion suggesting such an approach is not feasible for the industry as a whole.


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Monitoring methods are also critical. They must be able to detect pockets of explosive gas that may be anywhere in a sealed area. Sampling behind one seal in a bank is not likely to accomplish this in many cases. While the rule does permit a District Manager to require other sampling locations where necessary, the rule provides no guidance for yet another highly technical decision by the district office. The rule should include more specificity in this regard to ensure that all the effort being expended to locate hazardous gas pockets is not wasted through poor sampling design. As you know, we have proposed legislation that would require monitoring to be through at least 1 seal in each bank and through a sufficient number of boreholes from the surface to effectively determine the gas concentrations.

This brings us to a concern about the approach apparently being taken by the Department in evaluating the feasibility of this critical rule. The Mine Act requires that standards be as protective as feasible. This basic principle is often stated but widely misunderstood. It does not mean the Secretary is permitted to adopt any feasible solution. Rather, the statute requires the Secretary adopt the most protective solution that is also feasible. In practice, this requires the Department to start by considering approaches that will reduce to insignificance any risk to miners. If such approaches are determined not to be either technologically or economically feasible for the industry as a whole, then the Department is permitted to start working its way down through the next most protective approaches until it arrives at the most protective solution that is feasible.

The analysis accompanying the approach taken by the emergency temporary standard is clear that it is feasible for the mining industry to accomplish the requirements in the ETS. However, it is not clear from the analysis that you have considered more protective approaches and found them not to be feasible. If the Federal Mine Safety and Health Act is to live up to its expectations, it is essential that the agency follow the law in this regard.

Sincerely yours,

  
**GEORGE MILLER**  
Chairman