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by Gerald F. Murphy and Steven J. Seiden

FAA and Drones: Mining the Regulatory Gap

Introduction

The drones are coming, albeit at the pace of government. For many years now, so-called unmanned aircraft systems (UAS or drones) have been used by governmental agencies to support law enforcement activities, search and rescue operations, border patrol missions, humanitarian aid efforts, and a host of other critical public functions. And although UAS have generally not been permitted to be used for commercial purposes in the United States, it is a near certainty that in the not-so-distant future UAS will be widely used by private American firms to support countless commercial activities, including 3-D mapping, aerial surveys, facility inspection, precision agriculture, security, small package delivery, and film production. UAS will be in high demand across a diverse array of industries due to their unique ability to increase human potential and productivity, allowing dangerous, dull or difficult tasks to be performed more safely and efficiently than with manned aircraft – or no aircraft at all.

There are few industries better suited to unlock the vast commercial potential of UAS than the mining industry, where firms are constantly evolving and innovating to maximize output while balancing extraordinarily complex safety challenges. Because UAS offer the potential to dramatically increase productivity while mitigating safety hazards, mining companies stand to benefit tremendously from integrating UAS into their operations.

Indeed, the industry is already leveraging this technology abroad, in countries like Australia and Switzerland. Some companies are using high-definition cameras mounted on UAS to create 3-D maps of mines to help calculate the volume of material that has been removed, allowing for more accurate production estimates; others are using UAS to measure gravel pits, quarries and landfills, to assist with reporting of stockpile inventories, to conduct pre- and post-mining imagery of land disturbance, and to eliminate the need for personnel to access particularly hazardous pit areas. Earlier this year, the Australian Civil Aviation Authority awarded Territory Iron an operating certificate to use UAS at its Frances Creek mining operation, an action that has reportedly already paid significant dividends for that company.

UAS can also offer extraordinary promise in regions once deemed too dangerous or remote for mining activities, with their potential to shorten supply chains and enhance the ability to monitor, track, and manage other key aspects of the business. Paradoxically, the remoteness of mining sites may actually give the industry an advantage over others with respect to securing regulatory approvals, inasmuch as the airspace and population centers around such sites are less congested and, as a result, less likely to pose a potential risk to civil aviation.

There is no denying the economic boon that UAS will bring once their potential can be fully realized. Integrating UAS into the national airspace system (NAS) is expected to create tens of thousands of jobs and generate billions of dollars in economic activity. A study conducted by the Association for Unmanned Vehicle Systems International found that the UAS industry will create more than 70,000 new jobs in the first three years after they are allowed to fly in U.S. airspace, and over 100,000 new jobs by 2025. The resultant economic impact will total over \$13.6 billion in the first three years and is predicted to grow to over \$82.1 billion by 2025.

So what are we waiting for? In a word, government. But there is hope that change is coming.

Nudging the Federal Aviation Administration to Act

As the federal agency responsible for ensuring the safety and efficiency of the NAS and protecting people and property on the ground, the Federal Aviation Administration (FAA) asserts that UAS operations are within the scope of its regulatory and enforcement authority. While there are no FAA regulations that specifically address UAS, the FAA's view is that UAS are "aircraft" and UAS operators are "pilots" under the agency's regulations.

In 2007, the FAA issued a policy statement declaring that "no person may operate a UAS in the National Airspace System without specific authority" and that such policy would apply to both public and private UAS. Until recently, there were only two primary ways to obtain specific FAA authority to operate UAS. The first was to obtain a special airworthiness certificate in the experimental category (SAC-EC) for private sector (civil) aircraft. SAC-ECs are available to private entities that want to fly a UAS for research and development, sales demonstrations, and pilot training, but they preclude operations for

compensation or hire. The second was to obtain a Certificate of Waiver or Authorization (COA) for public aircraft. A public aircraft is one that is operated by federal, state, or local agencies for law enforcement or other public safety purposes, or by a qualifying state university for conducting research. But neither of these mechanisms allowed UAS to be operated for commercial purposes.

In 2012, Congress took steps to change the status quo in the FAA Modernization and Reform Act of 2012 (FMRA). Three aspects of that statute are relevant to the development of commercial UAS applications.

First, Congress required the FAA to establish permanent Arctic areas where small UAS (*i.e.*, those weighing less than 55 pounds) previously used by the military could be operated for research and commercial purposes. Thus, in July 2013, the FAA granted expedited "Restricted Category" certifications for the Insta ScanEagle and Aerovironment PUMA UAS – permitting their use for commercial aerial surveillance purposes. The

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**UNTIL THE FAA COMPLETES
ITS SMALL UAS RULEMAKING,
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UAS FOR COMMERCIAL PURPOSES
IN THE UNITED STATES.**
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ScanEagle was authorized for use by ConocoPhillips to perform marine mammal and ice surveys necessary to meet environmental and safety rules before drilling on the sea floor; the PUMA was approved to support BP's emergency response crews for oil spill monitoring and wildlife surveillance over the Beaufort Sea. And in June 2014, the FAA modified the PUMA's restricted category type certificate to allow aerial surveys of BP pipelines, roads and equipment at a Prudhoe Bay, Alaska oilfield – the first time the FAA authorized a commercial UAS operation over land.

Second, the FMRA required the FAA to accomplish several milestones and rulemaking actions over the next few years, including: (i) streamlining and accelerating the operation of UAS in the NAS by both public entities and commercial operators; (ii) issuing regulations for the operation of small UAS by August 2014; (iii) creating and implementing a plan to begin the integration of all civil UAS into the NAS by September 30, 2015; (iv) disseminating a U.S.-government wide comprehensive plan to safely accelerate the integration of civil UAS into the NAS by November 2012; (v) creating a roadmap outlining the actions and considerations needed to enable such integration by February 2013; and (vi) establishing six geographically diverse test sites for UAS testing and development.

Finally, as a stop-gap measure, in Section 333 of the FMRA, Congress directed the Secretary of Transportation to authorize

(by way of the FAA exemption process) certain safe, low-risk UAS operations prior to completion of the various UAS rulemakings required by the FMRA.

To date, the FAA is woefully behind on its UAS rulemaking. But the Section 333 exemption process offers hope in the interim.

In what was the first concrete step towards mainstream commercial application of UAS technology in the United States, on September 25, 2014, the FAA granted regulatory exemptions to six aerial photo and video production companies (and to a seventh shortly thereafter) belonging to the Motion Picture Association of America, allowing UAS to be used in scripted, closed-set film production. And the agency granted five more exemptions on December 10, 2014 – to companies looking to operate UAS for aerial surveying, construction site monitoring and oil rig flare stack inspections. As of this writing, more than 150 such exemption applications from a broader array of industries remain pending. Until the FAA completes its small UAS rulemaking, Section 333 exemptions will be the only way to operate a UAS for commercial purposes in the United States.

Small UAS Rulemaking – Worth the Wait?

As for the FMRA's directive to the FAA to issue final rules governing the commercial use of a wide range of small UAS by August 2014, and to integrate UAS generally into the NAS by September 2015, the small UAS rulemaking is unlikely to be finalized until early 2016, and the September 2015 integration date is aspirational at best. Indeed, the FAA has yet to publicly outline, much less schedule, a proposed rulemaking to implement the recommendations of the UAS comprehensive plan.

As this edition of the Mining Law Monitor goes to print, a Notice of Proposed Rulemaking addressing small UAS classification, pilot certification and visual observers, registration, approval of operations, and operational limits is imminent – the FAA was aiming for December 22, 2014. Further delays to both the small UAS rulemaking and the September 30, 2015 integration goal are likely, however, and the agency's ability to quickly finalize any rulemaking is in serious doubt. Indeed, a June 2014 Department of Transportation Inspector General's audit report revealed that the FAA has missed statutorily prescribed rulemaking deadlines for the majority of the FMRA's 17 UAS-related provisions, and concluded that such delays will prevent the FAA from meeting Congress's deadline for achieving safe UAS integration. The report also found that the FAA has not

reached consensus on standards for technology that would enable UAS to detect and avoid other aircraft and ensure reliable data links between ground stations and the UAS they control. Nor has the agency established a regulatory framework for UAS integration, such as aircraft certification requirements, standard air traffic procedures or an adequate controller training program.

Assuming it eventually gets rolled out, the FAA's small UAS rulemaking is expected to, among other things: (i) be limited to visual line of sight operations under 400 feet above ground level (AGL) in Class G airspace; (ii) establish small UAS pilot qualification requirements; (iii) require the small UAS to be registered on the FAA Registry; and (iv) require the use of an observer. The small UAS rulemaking will also likely garner tens of thousands of public comments – covering an unprecedented range of constituencies – that the FAA must consider and address before making it final. The only thing that is clear about how the agency will balance the interests of airlines, hobbyists, pilots, manufacturers, technology companies and privacy advocates is that it will not do so quickly. It is noted that what can fairly be characterized as legitimate, but misdirected, privacy concerns derailed the FAA's UAS test site selection process by several months. Regardless of how long it may take to finalize, however, the small UAS rule is unlikely to authorize anything beyond the current Section 333 exemptions – and may even be more restrictive to the extent it provides for any type of blanket authorization.

Because the small UAS rule is unlikely to be finalized for what may be as long as another 18 to 24 months, Section 333 will be the only way to operate a UAS for commercial purposes in the United States for some time. It is also unclear whether – or how – the small UAS rule will provide a mechanism by which commercial operations can begin immediately. Accordingly, the FAA's interim authority under Section 333 will especially benefit operators who wish to gain a competitive advantage using UAS. Fortunately, Congress intended Section 333 authorization to cover the period during which the FAA completes additional regulatory steps beyond the small UAS final rule.

Section 333 Exemptions: A Fast Track for Commercial Small UAS

Section 333 of the FMRA, combined with the FAA's general authority to issue exemptions from its own regulations, presents an immediate opportunity for companies that are

committed to operating UAS and want to avoid the frustration of waiting for the FAA to promulgate the small UAS rule. Section 333 empowers the FAA (through the Secretary of Transportation) to determine: (i) if a particular UAS operation does not create a hazard to users of the NAS or the public or pose a threat to national security; and (ii) whether a COA or airworthiness certification is required for the operation of such UAS.

But since Section 333 does not provide an independent basis for UAS operating authority, the FAA has taken the position that prospective UAS operators seeking Section 333 relief must do so through the agency's standard exemption process. The FAA narrowly interprets Section 333 as providing some statutory flexibility with respect to airworthiness certification for the UAS itself, but maintains that the statute does not provide any such flexibility relative to other statutory or regulatory requirements concerning the operation of aircraft (*e.g.*, those pertaining to aircraft registration, airman certificates, maintenance, etc.). To obtain a Section 333 exemption, an applicant must generally show that its UAS operations will not adversely affect safety, or provide at least an equal level of safety to the rules from which they seek exemption, and why granting the exemption would be in the public interest. The FAA has also clarified that its Section 333 determination requires the petitioner to, among other things, describe: (i) how the proposed UAS operation will be safely conducted to minimize risk to the NAS or to persons and property on the ground; (ii) any procedures they would implement to ensure that the UAS is in a condition for safe flight; (iii) UAS pilot qualifications; and (iv) the nature, characteristics and geographic scope of the intended UAS operations.

Although issued to just a handful of companies, most of which are engaged in film production, the first Section 333 exemptions will serve as a template for any commercial small UAS operations. Operators will need to be prepared to demonstrate similar safeguards, risk-mitigation procedures, and operational limitations, albeit tailored to their proposed use. While the FAA may modify these conditions as the Section 333 exemption process becomes normalized, they are expected to maintain the following basic measures:

- Flights are operated during daylight hours at an altitude of no more than 400 AGL;
- Crew consists of a pilot in command (PIC) and visual observer;

- PIC is an FAA-licensed private pilot with a third class medical certificate;
- Flights are operated within line of sight of the PIC and/or observer(s);
- PIC and observer must be able to communicate verbally at all times;
- UAS is registered on the FAA Registry and display N-number (*i.e.*, like any other aircraft);
- Operations are limited to Class G airspace (uncontrolled) and in a confined operating area with physical security measures;
- Maximum operating time is equivalent to 25% of battery life remaining;
- Operators are trained in specific details of the small UAS being operated;

- Operator conducts a mandatory daily pre-operational briefing;
- Operator conducts pre-flight inspection/maintenance;
- Operator obtains an FAA certificate of waiver or authorization to operate in a specific operating area; and
- Operator complies with an FAA-approved UAS operations manual detailing the standard operating procedures and safeguards (may be submitted confidentially).

To date, over 150 Section 333 petitions have been filed by companies seeking to operate small UAS of varying sizes and capabilities in contexts ranging from aerial mapping and surveys, to agriculture and real estate, to filmmaking. This includes at least one mining consulting company – EnviroMINE – that is seeking to operate 1.7-pound eBee small UAS over certain areas in California and Arizona suitable for (or in use by) surface mining for the purpose of collecting aerial photographs to create surface maps and updated imagery for use by biologists, archaeologists, mine operators and the agencies that regulate these operations. While the FAA took just over four months to process the first round of Section 333 exemption applications (and several weeks longer for the second round), its processing time is expected to slow as the number of pending applications increase. Because the agency considers each application individually and generally in the order that it was received, interested operators who are still waiting to apply do so at their peril.

Conclusion

Mining companies looking to stay ahead of the technological curve by employing UAS in their U.S. operations do not need to wait – what may be years – for the FAA to promulgate a rule covering the use of small UAS for commercial purposes. A Section 333 exemption would offer an immediate and tangible opportunity to start leveraging UAS technology much more quickly. Doing so will also put those mine operators with established UAS programs at a competitive advantage when formal rules allowing broader operations are eventually issued. Although the Section 333 exemption process may require an upfront investment of time and resources, those costs could easily be outweighed by the risks associated with waiting on an FAA rulemaking process wrought with uncertainty.

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Coal Industry Awaits Oral Argument and Decision on Merits of MSHA’s Final Rule for Lowering Miners’ Exposure to Respirable Coal Mine Dust



By Ed Green and Dan Wolff

The federal government regulates the coal mining industry to, among other things, protect miners from work-related health risks. In May 2014, the Mine Safety and Health Administration (MSHA) published a final rule concerning respirable dust in underground and surface coal mines. This complex “Dust Rule” – really, a series of rules – changes the regulatory landscape for coal mining in ways that are certain to have an enormous impact on the industry.

Understandably, the industry has challenged the legality of the Dust Rule. The case has been fully briefed in the U.S. Court of Appeals for the Eleventh Circuit (based in Atlanta).

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**THE “DUST RULE” CHANGES THE
 REGULATORY LANDSCAPE IN WAYS
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In the litigation, the industry’s position, generally stated, is that the Dust Rule is procedurally defective and, in any event, compliance with the rule using current technology is not feasible. Industry also called MSHA’s scientific justification for the rule into doubt. Oral argument is anticipated in early 2015, and a decision should issue by spring or early summer.

This article provides an overview of the legislative and regulatory background of mandatory health standards to control respirable dust in coal mines leading up to the May 2014 Dust Rule. We then discuss some of the notable regulatory changes imposed by the rule, along with some of the rule’s defects, as identified by the industry in their briefs to the court, that call the Dust Rule’s legality into question.

Background

The Statutory Authority

In 1968, a coal-mine explosion in Farmington, West Virginia, killed 78 miners, spurring federal and state governments to act. Action at the federal level included laws covering not just miners’ safety but also their health, based on a grassroots national movement aimed at ameliorating coal miners’ high incidence of pulmonary diseases. These diseases, collectively called “black lung,” included coal workers’ pneumoconiosis (CWP). A contemporary House of Representatives report defined CWP as “chronic chest disease, caused by the accumulation of fine coal dust particles in the human lung. In its advance[d] forms, it leads to severe disability and premature death.” H.R. Rep. No. 91-563, at 15 (1969). Congress responded swiftly to these safety and health concerns. On New Year’s Eve 1969, President Richard Nixon signed into law the Federal Coal Mine Health and Safety Act of 1969. Central among the 1969 Coal Act’s health provisions was regulation of respirable dust in the nation’s coal mines. The 1969 Act required “each operator [to] continuously maintain the average concentration of respirable dust in the mine atmosphere during each shift to which each miner in the active workings of such mine is exposed.” Under section 202(b) of the Coal Act, operators of underground coal mines were required through 1972 to keep the average dust concentration at or below 3.0 milligrams per cubic meter (mg/m³). After 1972, the standard fell to 2.0 mg/m³. Congress based these amounts on “an enormous amount of impressive medical evidence” compiled in Great Britain (H.R. Rep. No. 91-563, at 18). The British had concluded from this data that a miner exposed to 2.0 mg/m³ during a career underground had zero risk of developing disabling CWP.

The Federal Mine Safety and Health Act of 1977 incorporated virtually without change the 1969 Coal Act's health measures, and transferred administration of the program to the newly created Mine Safety and Health Administration, within the Department of Labor. Identical language in both the 1969 and 1977 Acts directed the Secretary of the Interior and, later, Labor, in conjunction with the Secretary of Health, Education, and Welfare (which later became Health and Human Services), to "develop and promulgate improved mandatory health or safety standards to protect the health and safety of the Nation's coal . . . miners."

Over the ensuing decades, the prevalence of CWP among underground miners dropped from 30% to just 3%. This is a remarkable occupational health success story. But in the mid-1990s, experts saw what appeared to be increases in CWP and other lung diseases among miners. These increases led the Clinton and Bush administrations to propose revamped rules. For a variety of reasons the proposed rules foundered. In 2010, MSHA proposed new regulations that, among other things, would have dropped the dust standard to 1.0 mg/m³.

The 2014 Dust Rule

After a lengthy comment period, with public hearings around the country (including a marathon 13-hour hearing at MSHA headquarters in Arlington, Virginia), and voluminous comments, the rulemaking record finally closed on June 20, 2011. The rule then was debated for almost three years within MSHA and the White House Office of Information and Regulatory Review (part of the Office of Management and Budget (OMB)). One key reason the rule languished so long was that both industry and labor (through the Bituminous Coal Operators' Association and the United Mine Workers of America) had gone hand-in-hand to the White House out of mutual concern about the feasibility and complexity of the proposed rule.

Finally, on May 1, 2014, MSHA published in the *Federal Register* its final rule, *Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors*. The final rule adopted a 1.5 mg/m³ standard set to take effect in 2016. The agency pitched this as a compromise between its preferred 1.0 mg/m³ standard and the current 2.0 mg/m³ standard.

And perhaps it would have been seen as a compromise had the rule focused only on the concentration standard. But the Dust Rule does so much more. The most significant change resulting from the Dust Rule is not the lower numeric standard

but the fact that compliance determinations, and resulting enforcement measures, will now be based on the results of a single sample taken during a single shift, instead of being based on the average dust concentrations sampled over multiple shifts. As the industry briefs pointed out, this is a game-changer: it cannot be overstated how much more difficult it is to stay in compliance when compliance is determined on the basis of a single sample instead of the average of multiple samples.

Analysis

Replacing Averaging With Single Samples for Compliance

In 1969, Congress recognized that CWP was a chronic disease, not caused by a single excessive exposure. Thus, a high concentration of dust during one shift could be offset by a low one the next shift. Consequently, the 1969 Mine Act initially required that compliance be based on averaging concentrations over multiple shifts.

Nevertheless, Congress required that, 18 months after the Coal Act's passage, the scheme of averaging samples taken over multiple shifts to determine compliance would give way to a single-shift sampling scheme unless the Secretaries of the Interior and Health, Education, and Welfare jointly found that sampling on a single shift would not accurately reflect the dust concentrations to which miners were being exposed. And sure enough, in 1972, these two departments jointly found, after a public notice-and-comment period, that single-shift sampling would not accurately reflect the concentration of dust to which miners were exposed. The scheme of averaging samples gathered across multiple shifts to determine compliance was thus preserved.

The 1972 joint finding has never been rescinded. MSHA and the National Institute for Occupational Safety and Health (an agency within the Department of Health and Human Services) – the dust-program successors to the Departments of the Interior and Health, Education, and Welfare – did try to rescind the finding in a joint rulemaking in 1998. But that rulemaking was vacated that same year by the Eleventh Circuit because MSHA failed to evaluate the feasibility of the rescission, as the Mine Act requires. The agencies tried again, opening a new joint rulemaking in 2000, but it was never completed.

With the Dust Rule, MSHA has again gone down the path of single-shift sampling. This time, however, MSHA walks alone, having unilaterally (and thus unlawfully) rescinded the

1972 joint finding of MSHA and NIOSH. We submit that this is unlawful under both the Mine Act and basic principles of administrative law: one agency cannot undo an official act that it executed jointly with another agency.

Beyond the procedural defects of the single-sample compliance scheme, there is the fact that a single dust sample taken during a single shift is a poor measure of the dust concentrations to which a miner is exposed over the long term

of his or her working career. It is a point in time, and offers little or no insight into a miner's occupational exposure to respirable coal mine dust. Indeed, MSHA's sampling program only exacerbates the disconnect between a single sample and the long-term exposures that can lead to CWP by measuring dust concentrations at particular *locations* in a mine, not the *personal exposures* of actual miners. So, with the Dust Rule, MSHA will now cite operators if even just a single sample,

MSHA REGULATORY UPDATE

Proposed changes to Part 100: On July 31, the Mine Safety and Health Administration (MSHA) issued a proposed rule that, if finalized, would make significant changes to the current scheme for assessing civil penalties for safety and health violations. MSHA has held two public hearings on the proposed rule and will hold two more in coming weeks. Comments are currently due no later than January 9, 2015; however, MSHA has stated that it will extend the comment period until approximately 30 days after the conclusion of the last of the hearings.

Self-contained self-rescuers (SCSRs): In 2012, the National Institute for Occupational Safety and Health (NIOSH) revamped the requirements for SCSRs intended for use in underground coal mines. After April 9, 2015, all new SCSRs sold must be approved by NIOSH as being in compliance with the new requirements. (Mine operators are allowed to continue to use the SCSRs they have on hand until the shelf life of those SCSRs expires.) So far, however, NIOSH has not certified any new SCSRs. We anticipate an announcement by NIOSH in the Federal Register that the April 9 deadline will be extended to allow SCSR manufacturers additional time to obtain NIOSH approval and manufacture sufficient quantities of SCSRs to meet the anticipated demand for the new units.

Refuge alternatives for underground coal mines: In December 2008, MSHA issued a final rule establishing requirements for refuge alternatives for underground coal mines, and in August 2013 the agency published a Request for Information asking for "information on escape and refuge options that may present more effective solutions than the existing rules for miners' escape and safety." The deadline for comments has been extended a number of times, and the comment period is now expected to close in early April 2015, after which we expect that MSHA will propose major changes in the current rule. In the meantime, concerns persist about whether the current fleet of portable inby refuge alternatives adequately ensures miner safety in an emergency. NIOSH is currently studying the refuge alternative issue.

Proximity detectors: MSHA proposed a rule requiring proximity detectors for continuous mining machines in underground coal mines back in 2011, but that rule has not yet been finalized. According to the agency's entry in the federal government's Semi-Annual Regulatory Agenda, the proposal was scheduled to be finalized this month (December 2014). It remains to be seen whether MSHA follows through. Additionally, MSHA says that it plans to propose a second rule that would mandate the use of proximity detectors on other types of mobile equipment in underground mines. According to MSHA, that proposal will be published in January 2015. (It is not yet clear whether the more general requirements will apply only to coal mines, or to all underground mines.)

Crystalline silica: MSHA's Regulatory Agenda, published in November, indicates that the agency plans to propose a rule establishing new standards for metal/non-metal miners' exposure to respirable crystalline silica. MSHA currently projects that the proposal will be published by October 2015 – but that deadline is aspirational only and seems extremely unlikely to be met. The Occupational Safety and Health Administration (OSHA) issued a proposed rule on Occupational Exposure to Crystalline Silica in the autumn of 2013, and MSHA has stated publicly that it plans to build on OSHA's work, adapting OSHA's approach to fit the particular needs of the mining community. The OSHA rulemaking docket is very large due to the numerous comments and public hearings and related proceedings, and it is therefore very unlikely any new rule will issue before the end of 2015, which in turn could cause MSHA to adjust expectations for its own rule.

Diesel exhaust: Although no formal request for information has yet been published, there is no doubt (and MSHA's Regulatory Agenda confirms) that one is forthcoming. MSHA currently regulates miners' exposure to diesel particulate matter (DPM), but in June 2012, the International Agency for Research on Cancer (IARC) classified diesel exhaust, of which DPM is a component, as a known human carcinogen. Both NIOSH and the National Cancer Institute have identified diesel exhaust as a possible cause of lung cancer. NIOSH plans to undertake a formal risk assessment in order to quantify the potential effects of diesel exhaust; however, the starting date for this project is uncertain. We anticipate that MSHA will publish its planned request for information as a prelude to further regulation. Although the projected date for publication is currently April 2015, that deadline might be too optimistic.

Workplace examinations: As part of the agency's attempt to better address fatalities in metal/non-metal mines, MSHA plans to issue a request for information about how workplace examinations are carried out in that sector. The focus of the request will be on who conducts workplace exams, how the exams are carried out, and the record-keeping that goes with them. According to MSHA's Regulatory Agenda, the request for information will be published in June 2015.

Upper Big Branch investigation: MSHA plans to publish a request for information on recommendations that came out of the investigation into the April 2010 explosion at the Upper Big Branch (UBB) coal mine and the agency's internal review of its own actions at UBB. This request for information will cover issues relating to rock dusting, ventilation, mine examinations, certified persons, and MSHA-approved instructors. MSHA says the information request will be published in January 2015, but that projection, too, may be overly optimistic.

taken during a single shift, at a single location measures higher than the legal standard, even if no actual miner personally experienced that exposure during the course of that sampled shift.

Finally, the Dust Rule requires an operator that has been cited for a single out-of-compliance dust sample to submit five post-violation samples demonstrating a concentration of respirable coal dust below the legal standard as measured over a single shift, in order to abate the citation and before MSHA will terminate the citation. This is no easy chore; failure to do so could result in a suite of enhanced enforcement tools, including closure orders.

Feasibility

MSHA must demonstrate that standards concerning toxic substances, such as the Dust Rule, are feasible, in both a technological and economic sense. That means the technology exists or soon will exist to enable operators to comply with the standard and that it will not be economically ruinous to the industry to do so. As the industry briefs contended, the Dust Rule fails that test: it is difficult to fathom how operators will be able to achieve compliance on a regular and consistent basis using known technologies.

Maintaining compliance with the dust standard under an enforcement scheme in which a single excessive measurement is grounds for a citation is, statistically, far more difficult than staying in compliance within a scheme based on the average of multiple samples. And the requirement that an operator submit five additional samples, each of which must measure below the legal standard, before MSHA will terminate a citation may well leave operators in a perpetual state of noncompliance.

MSHA also gave short shrift to the cost of production disruptions caused by the rule. When a single sample shows the operator is out of compliance, it will have to take corrective action, requiring it in many instances to stop production. One economic consultant’s report filed in the rulemaking record estimated that the costs of work stoppages would be about \$1.6 billion annually in the early years of the rule’s existence. MSHA, on the other hand, estimated the costs of abatement and corrective action at just over a million dollars annually. MSHA’s estimate is based on untenable assumptions, including that corrective actions will always take place during production or between shifts, and that, in any event, production delays do not result in material economic loss.

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WHEN A SINGLE SAMPLE SHOWS THE OPERATOR IS OUT OF COMPLIANCE, IT WILL HAVE TO TAKE CORRECTIVE ACTION, REQUIRING IT IN MANY INSTANCES TO STOP PRODUCTION. ONE ECONOMIC CONSULTANT’S REPORT FILED IN THE RULEMAKING RECORD ESTIMATED THAT THE COSTS OF WORK STOPPAGES WOULD BE ABOUT \$1.6 BILLION ANNUALLY.
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Scientific Justification

In addition to demonstrating its feasibility, MSHA is required when promulgating standards such as the Dust Rule to consider the “latest available scientific data in the field.” With the Dust Rule, MSHA missed this mark, too, because the rule is premised in large part on mistaken interpretations of incomplete epidemiological data on occupational lung disease among the nation’s coal miners. Despite studies showing that the prevalence of coal workers’ pneumoconiosis has decreased from about 30% in 1970 to about 3% now, MSHA points to what it claims are spikes in CWP as grounds for revamping its respirable dust regulations.

The industry pointed out in its briefs that MSHA’s alarm over these spikes is overstated because the latest scientific

data show a decline in the prevalence and incidence of CWP nationwide. Moreover, the so-called spikes in CWP are actually regional hot spots in eastern Kentucky, southern West Virginia, and southwestern Virginia that are likely caused by respirable silica dust, generated by mining thin seams of coal surrounded by silica-bearing rock. Notable among the public comments on the Dust Rule submitted to MSHA is *A Critical Review of the Scientific Basis for MSHA's Proposal for Lowering the Coal Mine Dust Standard*, a study of the epidemiological evidence on which MSHA relied in crafting the new rule. The authors of the study are recognized experts in occupational lung disease who held senior research positions at NIOSH when that agency developed its own CWP surveillance program. The study concludes that MSHA mischaracterized silicosis localized in these hot spots in central Appalachia as a nationwide problem of rapidly progressing CWP. A contemporary NIOSH report on CWP largely corroborates the *Critical Review's* findings.

Silicosis among coal miners is a legitimate health concern, but the Rule does little to address it. MSHA has needlessly forced coal mine operators nationwide to commit substantial resources to address a misdiagnosed problem.

The Dust Rule's Safety Equipment Paradox

Stubbornly, it seems, MSHA rejected (for compliance purposes) the industry's proposed use of certain personal protective equipment that might actually make the rule feasible.

During the proposed rule's comment period, industry proposed allowing a "hierarchy of controls" to limit miners' exposure to respirable dust. The hierarchy, well accepted in other industrial settings, comprises three tiers of controls:

1. Engineering controls such as water sprays and ventilation operate to suppress dust throughout a mine.
2. Administrative controls such as miner rotations to ensure that individual miners' exposures are minimized where dust suppression is most difficult.
3. Personal protective controls such as NIOSH-approved, powered, air-purifying respirators (PAPRs), to be used only when engineering and administrative controls have been optimized.

MSHA rejected the hierarchy of controls on the ground that the Mine Act does not permit respirators to be substituted for mine-wide engineering controls. But industry proposed

(consistent with the hierarchy) that personal controls be allowed to supplement, rather than be substituted for, mine-wide controls. And, in any event, the portion of the Mine Act that MSHA claims precludes the hierarchy (30 U.S.C. § 842(h)) is an interim provision that MSHA may override through rulemaking. Ironically, MSHA has adopted the hierarchy of controls presented above to regulate airborne contaminants and diesel particulate matter in metal and nonmetal mines. MSHA's sister agency, OSHA, relies on the hierarchy to regulate air contaminants in shipyards, marine terminals, and construction sites.

While rejecting the widely accepted hierarchy of controls that might have obviated many of the concerns with its new rule, MSHA has adopted a new and yet unproven technology: the continuous personal dust monitor (CPDM). MSHA touts the CPDM, which underground coal-mine operators must use starting on February 1, 2016, as a "new sampling device that measures continuously, and in real-time, the concentration of respirable coal mine dust and provides sampling results at specific time intervals and at the end of the work shift."

Unfortunately, the CPDM is not yet up to the task. The device is produced by just one manufacturer, and MSHA has acknowledged industry's concern that there will not be enough units produced in time for the 2016 effective date. Operators are also concerned that they will not have enough time to train miners on using and maintaining the CPDM. Nor did MSHA address concerns that miners already must wear and carry too much equipment, increasing the risk of musculoskeletal injuries. Most importantly, MSHA has ignored industry concerns about the CPDM's everyday accuracy and reliability.

Conclusion

The industry believes that MSHA's Dust Rule takes aim at a bogeyman. In the process, MSHA heaps substantial new burdens on an industry already reeling from a plethora of difficult safety and environmental standards and policies. It is because the rule is neither feasible nor justified that the industry has challenged it in court. Stay tuned.

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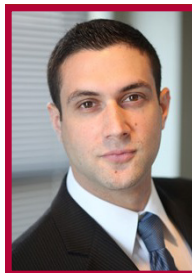
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