



## NATIONAL STONE, SAND & GRAVEL ASSOCIATION

### ENVIRONMENTAL, SAFETY & HEALTH REGULATIONS RECOMMENDED FOR ELIMINATION OR SUBSTANTIAL ALTERATION

May 13, 2004

#### **OSHA's Hazard Communications Standard**

29 CFR Section 1910.1200(d)(3) and (d)(4) in part requires the chemical manufacturer, importer or employer evaluating chemicals to treat the following nongovernmental sources as establishing that the chemicals listed in them are hazardous:

- *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*, American Conference of Governmental Industrial Hygienists (ACGIH), latest edition
- International Agency for Research on Cancer (IARC)

NSSGA believes these provisions represent illegal rulemaking by OSHA because they require U.S. companies to comply with standards recommended by organizations that fall outside the Administrative Procedure Act, and thus subject American business to requirements that have not gone through notice-and-comment rulemaking. Denied due process by these so-called incorporation by reference provisions, businesses are left with no recourse but compliance.

This problem was rectified when the Mine Safety and Health Administration (MSHA) promulgated its own Hazard Communication Standard in 2002. In 30 CFR 47.21, the work of both ACGIH and IARC are referenced, but the regulation locks in ACGIH's 2001 standards and volumes 1 through 77 of IARC's monographs and related supplements.

The OSHA Hazard Communication Standard, which covers all of General Industry, casts a very wide net, and, as a consequence, when ACGIH revises its threshold limit value (TLV) for a chemical or IARC reclassifies a chemical as a known or probable carcinogen, employers in the U.S. making or distributing products containing that chemical must do three things: revise the relevant Material Safety Data Sheet (MSDS), alter, as appropriate, warnings labels on containers containing the substance, and provide additional employee training. Downstream users of the product must replace the obsolete MSDS with the revised one, supplied by the manufacturer or supplier, and provide employee training.

Since the Hazard Communication standard covers all industries regulated by OSHA, NSSGA's remarks are also intended to cover identical provisions of the General Industry Hazard Communication rule that can be found in 29 CFR 1915.1200 (Shipyards), 29 CFR 1917.28 (Marine Terminals), 29 CFR 1918 (Longshoring) and 29 CFR 1926.59 (Construction). OSHA covers the agricultural industry by cross-reference to the General Industry Hazard Communication Standard.

NSSGA believes that the costs, including the paperwork burden, of conforming to these requirements is enormous, especially since the Hazard Communication Standard covers millions of U.S. workplaces, from large refineries to the local hardware store. The burden is especially heavy on small businesses. However, NSSGA does not have the expertise to conduct a cost analysis. Additionally, we have no way of knowing how many products containing substances subject to ACGIH or IARC action are affected each time a change in a TLV or IARC classification is made.

Our recommendation to correct this problem is to require that ACGIH TLVs and IARC classifications in effect in 2003 be frozen there. This would be similar to what was done when MSHA's standard was promulgated and the TLVs and IARC designations applicable in 2001 were frozen. If this cannot be accomplished through Executive Order, then NSSGA recommends that OSHA's Hazard Communication regulation be reopened to allow incorporation of the change.

### **EPA's Reference Method 9 under New Source Performance Standard (NSPS), Subpart OOO**

#### Background

EPA promulgated its New Source Performance Standard (NSPS), 40 CFR Part 60, established under Section 111 of the Clean Air Act on December 16, 1975 (40 FR 58416) as means to regulate stationary sources of particulate matter (PM) emissions. Subpart OOO of the NSPS standard covers nonmetallic mineral processing, which includes regulations for emissions from operating equipment that was manufactured, modified or reconstructed after August 31, 1983. Processing equipment regulated under Subpart OOO affecting the crushed stone, sand and gravel industry includes crushers, grinding mills, screens, bucket elevators, bagging operations, storage bins, enclosed truck and railcars and transfer points on belt conveyors.

Under Subpart OOO, aggregate facilities are required to conduct performance testing on stationary equipment in accordance with EPA Reference Method 9. Method 9 is a visual emissions test that determines *opacity* or the percentage of the light that is prevented from passing through a plume or fugitive emission. Individuals performing the opacity readings are required to be trained and certified in accordance with the method. EPA has set specific limits for the aggregates industry based on opacity readings designated to various processing equipment ranging from 7-15 percent (%). Among the requirements

of Method 9 is determining the average of twenty-four readings over a six-minute period for a total of one hour for each piece of equipment that falls under the purview of NSPS.

#### Current EPA Reference Method 9 Under Subpart OOO and NSSGA Position

EPA in its Final Rule, “Standards of Performance for New Stationary Sources: Nonmetallic Mineral Processing Plants (50 FR 31328, August 1, 1985), justifies its determination to include nonmetallic mineral processing plants under the purview of NSPS, because, “as a category [aggregate industry] contribute significantly to particulate matter air pollution, and that such pollution may reasonably be anticipated to endanger public health and welfare”. However, industry derived emission factor testing conducted continuously since 1991 and approved by the EPA has demonstrated that aggregate facilities emit significantly less particulate matter than was once believed at the time when the rule was promulgated. Furthermore, opacity is an optical property that bears no relationship to the current National Ambient Air Quality Standard (NAAQS), which sets concentration limits for ambient air. We believe by these references alone that the subjective Method 9 testing required under Subpart OOO has become outdated and renders no substantive value to the agencies for determining ambient concentrations or contributions of PM emissions to the ambient air.

Therefore, NSSGA believes the EPA Reference Method 9 should no longer be used as a viable means for determining ambient concentrations of PM for the following reasons:

- Method 9 opacity testing is a completely subjective test that determines optical properties based on the inherent inequities of calibrating each individual’s eyes to the plume in question, and has no relationship to the current NAAQS
- Emission standards for aggregate facilities should be based solely on National Ambient Air Quality Standards (NAAQS) due to the formation, composition and deposition of particulate matter emissions generated from aggregate operations
- Capture efficiencies of control equipment have vastly improved since the inception of the NSPS rule, thereby reducing the fugitive emissions generated by aggregate operations
- Implementation of engineering controls at aggregate facilities is widely adopted as a best available control technology (BACT)
- Resources required to train and certify personnel, conduct the testing, document and report testing results are unnecessary and burdensome

Each issue is discussed at greater lengths in the sections below.

#### Irrelevance and Inaccuracies of the EPA Reference Method 9

EPA’s Reference Method 9 test has been scrutinized since its inception, due in part that opacity is an optical property that bears no relationship to quantifiable mass or concentrations of emissions that is currently addressed by the NAAQS. Opacity evaluation was first used as an indicator of inefficient combustion, but has evolved as a determination of PM emissions when adopted by the EPA. Method 9 relies solely on the discretion and the accuracy of the individual performing the test. Of major concern with

the reliability of this testing method is that many industry experts believe that the human eye cannot be not calibrated enough to distinguish between 5, 7, 10 or even 15% opacity. Many have also stated that Reference Method 9 is only an estimation technique accurate to plus or minus 7.5% opacity. There is also no direct correlation between the results of a visual opacity test and a measured or monitored concentration at a fence line. Reliance on the NAAQS is a much better and more accurate determination of facility compliance.

#### NSSGA PM Emissions Testing for the Aggregate Industry

Over the past fourteen years, NSSGA has been conducting air quality studies to accurately characterize particulate emission data that is representative of the aggregate industry. Emission data and pollution estimates for the aggregates industry generated by EPA, prior to the promulgation of NSPS Subpart OOO, grossly overestimated and mischaracterized the amount of particulate matter emitted by these sources. In fact, since 1991, EPA has adopted and revised AP-42 Section 11.19.2 - Crushed Stone Processing - twice based on more recent and accurate empirical data generated and submitted by NSSGA.

Numerous NSSGA studies have demonstrated that stone crushing facilities are not a major source of fine particulates [aerodynamic diameter less than 2.5 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )] and have negligible impact on ambient levels quantified within this diameter range. Results from a 2000 NSSGA study entitled, "PM<sub>2.5</sub> PM<sub>10</sub> and TSP Formation, Composition and Deposition at a Stone Crushing Plant", indicated an observed decrease in the concentrations of total suspended particulates (TSP) and PM<sub>10</sub> as a function of downwind distance confirmed that there is a rapid loss of PM in the coarse and supercoarse (TSP) size ranges. Furthermore, the results suggest that EPA's emission inventories were significantly biased high due to the failure to account for rapid removal of large particles from the atmosphere.

This essentially means the *settling velocities*, or the speed at which particles dissipate from ambient conditions due to gravitational forces, of the particle sizes indicative of aggregate processing equipment, usually settle out of ambient atmospheric conditions before they reach a facility's boundary.

PM emissions that do extend beyond the boundary of an aggregate facility would be better quantified by NAAQS testing rather than the subjective Method 9 test.

#### Data Collection and Record Keeping Requirements Are Burdensome

As previously mentioned, Method 9 involves collecting the average of 24 readings over a six minute period for a total of one hour for each piece of equipment that falls under the purview of NSPS. An aggregate operation could have over 50 permitted sources requiring opacity testing due to the various amounts of equipment that typically exist at one of these facilities. This time-consuming exercise wastes valuable manpower at an enormous cost and, moreover, fails to accurately quantify the actual overall contributions of particulate matter to the ambient air from the entire facility. This snap-shot-in-time test is a miserable prediction of total facility compliance with NAAQS.

Also of major concern is the time and cost of resources required of this method to train and certify individuals, conduct the actual performance evaluation or opacity readings, and the documentation and reporting of emissions. Documentation and reporting of emissions are unnecessary and burdensome.

#### Particulate Control Equipment Efficiencies

The collection efficiencies of particulate control equipment such as fabric filter bag houses and wet suppressions systems or water atomizers have improved significantly over the past several years. These types of control devices have been widely accepted by the aggregate industry and are common among many aggregate operations. Demonstrated control efficiencies of 80-99%, depending on whether the control technology is wet suppression or dry collection, for aggregate-processing sources equates to zero opacity for the most part in a one-hour Method 9 test. Under Method 9, the certified opacity reader is still required to document at least one hour's worth of zero opacity for each emission source at processing plants that can have more than 50 permitted sources.

#### Summary and Conclusions

In conclusion, compliance with the National Ambient Air Quality Standard for particulate matter measured at the property line is a much more accurate indicator of overall facility compliance as well as giving the general public a measurable sense of environmental protection from both a health and welfare perspective. Relying on a subjective visual determination and analysis of an emission rate from individual sources based on opacity is neither a scientifically sound nor legally defensible compliance strategy. Maintaining an antiquated requirement to maintain compliance with a visual opacity standard does nothing to further environmental protection, facility compliance or general public safety.

### **MSHA's Diesel Particulate Matter Exposure to Underground Metal/Nonmetal Miners**

#### Background

On Jan.19, 2001, the Mine Safety and Health Administration (MSHA) released a final rule limiting occupational exposure of Diesel Particulate Matter (DPM) to underground metal/nonmetal miners. The ill-conceived regulation, 30 CFR 57.5060-57.5075, "Diesel Particulate Matter Exposure of Underground Metal and Nonmetal Miners," launched in haste on the last day of the previous Administration, lacks a solid underpinning in science, and so suffered from technical and economic infeasibility that the current Administration has been forced to undertake additional rulemaking to correct the problems. The current rulemaking and another anticipated rulemaking on DPM are the subject of this communication.

#### The Current Rulemaking and NSSGA's Position on It

The current DPM rulemaking seeks to codify a settlement agreement reached nearly two years ago among industry, labor and MSHA litigants. NSSGA was not a party to this settlement agreement. The key provision of this proposed rule is the interim DPM Permissible Exposure Limit (PEL). MSHA proposes to change it from the currently

enforceable level of 400 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), expressed as total carbon, to 308  $\mu\text{g}/\text{m}^3$ , expressed as elemental carbon. NSSGA does not object to this change. The settlement agreement also allows extensions of time for operators who act in good faith to come into compliance. We support continuation of that provision.

We do, however, object to the proposal to ban worker rotation as an option to minimize miners' exposure to DPM. Further, we oppose the final PEL put forth in the 2001 regulation that calls for a reduction in the PEL from the interim level to 160  $\mu\text{g}/\text{m}^3$ , expressed as total carbon, enforceable on Jan. 20, 2006. MSHA has said it will engage in yet another rulemaking to set a final PEL expressed as elemental carbon. Our position is that we want MSHA to permit worker rotation, and we want the interim PEL to be codified as the final PEL during this round of rulemaking. Therefore, besides striking the ban on worker rotation, this round of rulemaking should also dismiss the final PEL.

MSHA asserts that the science supports its conclusion that DPM is a lung carcinogen. Therefore, its ban on worker rotation is based on the government's carcinogen's policy; i.e., that no worker should be exposed to a carcinogen, however small the exposure. NSSGA believes sufficient scientific uncertainty on the carcinogens question exists, and thus MSHA's conclusion as to the carcinogenic potency of DPM constitutes an unsupported rush to judgment. Preliminary data released last year by a government research team composed of the National Cancer Institute (NCI) and the National Institute for Occupational Safety and Health (NIOSH), which is nearing the end of an epidemiologic research project of some 13,000 DPM-exposed workers, supports the conclusion that no apparent association exists between DPM and cancer.

If this conclusion stands after the final report of this highly scrutinized, well-controlled study is in, it will cast a long shadow of suspicion over the credibility of that part of MSHA's quantitative risk assessment dealing with lung cancer in which the Agency relied upon in its DPM rulemaking, especially in setting the permissible exposure limits (PELs). Industry stakeholders, including NSSGA, have previously raised serious questions about this risk assessment. Furthermore, with MSHA prohibiting worker rotation as an administrative control and viable means of reducing DPM exposures to miners because of what the Agency determined as a link between DPM and lung cancer, this decision would be undermined, and, as a result, would expect the ban on worker rotation to be rescinded.

As for the PELs, MSHA's establishment of any PEL for DPM lacks foundation in a scientifically rigorous quantitative risk assessment. The Occupational Health Administration (OSHA) has never even attempted to set a PEL for DPM-exposed workers within its jurisdiction, and the Environmental Protection Agency (EPA) has flatly stated that the research literature does not now support establishing specific occupational exposure limits for DPM. Furthermore, the analytical method used for determining levels of DPM, NIOSH 5040, has been subject to scrutiny with regards to its reliability and accuracy when trying to quantify concentrations at the level of the final PEL (160  $\mu\text{g}/\text{m}^3$ ). Despite everything, a stringent PEL would cause economic dislocation

in the industry, which consists mainly of small businesses. We note that we support MSHA's interim PEL only in the spirit of compromise.

#### Economic and Technologic Feasibility of Mine-Worthy Control Technologies

In its rulemaking, MSHA suggests numerous engineering and administrative controls to assist in complying with the final PEL. However, mine operators have repeatedly voiced that implementing a good maintenance and training program alone will not bring them into compliance with the final PEL. In addressing the problem with the economic and technologic feasibility of their DPM rule, MSHA has relied heavily on the experimental basis of developing technology such as diesel particulate filters (DPF) to attain its exposure limits. With the proposed the use of filters as the best available technology for complying with the PEL, MSHA has yet to provide evidence that is forthcoming of their durability and reliability over long periods in an underground mine setting. Many types of filters have been shown to be technically infeasible. NSSGA has expressed its position on DPM in oral and written testimony to MSHA, all of which is readily accessible from MSHA's DPM rulemaking record.

MSHA's emphasis on filters is apparently based on its belief that this technology is the best, and perhaps only, cost-effective way to reach its disputed final PEL. Mine operators are particularly troubled by this recommendation, and see filtration as the choice of last resort. They hold this view for a number of reasons: filters are costly and of questionable durability; filtration systems present logistical problems, especially active systems, making them far less practical than passive systems; they may lead to stresses on engines, or, as we have seen, substitution of another pollutant or pollutants in the air the miners breathe for the one MSHA wants operators to control; a behavior change is required because most equipment operators resist active systems. Diesel engine manufacturers also attest that many more years of research and development are needed before this technology can be widely applied to underground diesel equipment.

The care and time needed to adopt feasible engineering controls for DPM, particularly practical mine-worthy filter technology, has been repeatedly demonstrated by the problem of platinum-based catalysts. Acting on an MSHA recommendation to implement platinum-based catalysts, mine operators learned the catalysts could produce levels of nitrogen dioxide (NO<sub>2</sub>) in excess of the MSHA standard. The agency was forced to issue an alert to the mining community about the problem. Besides the fact that fundamental questions still remain about DPF durability and reliability, DPFs coated with platinum-based catalysts are not ready for the underground diesel market. This is because, in helping alleviate one health problem, DPM, they create another problem, elevated exposure to NO<sub>2</sub>. This problem was further illustrated in recent studies conducted by NIOSH and the Stillwater Mining Company, in conjunction with the Diesel Technology Partnership. During several of the studies, mines had to be evacuated due to levels of NO<sub>2</sub> exceeding MSHA's Short Term Exposure Limit (STEL). Mine operators should not bear the economic burden of being a technology research facility, nor can they afford to expose their employees to a more acutely toxic substance (NO<sub>2</sub>) in an attempt to alleviate another health problem.

### Communications with OMB-OIRA and the SBA

Over the tortuous course of this rulemaking, NSSGA has also repeatedly voiced its position to the Office of Management and Budget (OMB), Office of Information and Regulatory Affairs (OIRA), in written communications and meetings and the Small Business Administration (SBA), also in meetings and communications. Specifically, we have availed OIRA of our written testimony on the current rulemaking, which was presented to MSHA in the fall of 2003, and we met with OIRA in July 31, 2003 on the issue. We have also met with SBA's Office Of Advocacy, and have repeatedly expressed our concern in OSHA's Roundtable meetings held by the agency.

### Small Business Impact and Economic Analysis

We mentioned earlier MSHA's DPM rules disproportionately affect small business because many underground crushed stone operations are considered to be small by SBA's definition. NSSGA represents the bulk of these operations. The following information is provided by MSHA in its economic feasibility analysis for the DPM rule: of the 182 underground-dieselized Metal/Nonmetal mines, 110, or 60%, are stone mines. No other Metal/Nonmetal commodity comes close to this number of mines. Of these 110 underground stone operations, just under half, 54, are considered small by MSHA's definition of a small mine; i.e., fewer than 20 employees. All are considered small under the definition used by the Small Business Administration (SBA); fewer than 500 employees.

MSHA's 2000 economic assessment found a significant impact - 2.16% - on mines with fewer than 20 employees, as well as an impact on revenues of 1.28% for mines with more than 500 employees. For mines between 20 and 500 employees, the impact, according to the agency, was 0.21%. By the Agency's own admission, therefore, the rule would have a significant economic impact on a major subset of the Metal/Nonmetal mining industry; i.e., one comprising 72% of all underground dieselized Metal/Nonmetal operations.

In 1999, industry submitted its own estimates of the cost of the regulation, concluding that total annual compliance costs would be \$60.4 million, more than four times the \$19.2 million MSHA estimate, and even then, the industry analysis did not examine the estimated economic impact of all the DPM rule provisions, only some of them. In response, MSHA revised its estimates upward to \$25.1 million when it issued its final economic analysis, but that figure still falls far short of the mark. NSSGA notes that under-estimation of control technology costs by the Agency is apparently not limited to Metal/Nonmetal; the Agency may also have understated those costs in the coal sector by a factor of 5-10.

MSHA's latest economic analysis skips altogether the cost of control options other than respiratory protection. It includes the cost of applying for an extension of time to meet the interim limit, but excludes consideration of the rather obvious fact that the only way for the operator to get out of the extension of time loop, the operator must come into compliance, and do that, the operator must eventually implement controls beyond respiratory protection. This is a major shortcoming of the analysis.

Costs to comply with both the interim and final limits were spelled out in the final economic analysis in 2000. But, as noted above, those estimates are deficient for a number of reasons. As a consequence, industry is calling upon MSHA to put forth as part of this rulemaking, in light of current knowledge and information, an accurate cost accounting for its DPM regulation. In comments submitted to MSHA on October 13, 2003, NSSGA refers to a multitude of reasons the economic analysis conducted by MSHA in 2000 should be redone.

### Summary and Conclusions

In summary, NSSGA believes in protecting underground miners from overexposure to DPM. NSSGA supports a single, expedited rulemaking to promulgate changes in MSHA's diesel rules, including the deletion of the final PEL in this rulemaking and adoption of the interim MSHA PEL as the final limit. NSSGA also supports those parts of the rule currently in effect, and favors continued DPM research, especially on health effects, feasible controls, and exposure limits. We believe that worker rotation should be allowed as an administrative control to comply with MSHA PELs to reduce DPM exposure below the interim PEL. Furthermore, paperwork requirements of the regulation are burdensome and should be scaled back to comply with Bush Administration's mandates to minimize such requirements on small businesses. Mostly, we believe the basis of this rule was derived on an inadequate quantitative risk assessment and lacks the technical and economic feasibility that could adversely affect the entire underground-dieselized mining community, which are mostly comprised of small businesses.