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The Honorable David Michaels  
Assistant Secretary  
Occupational Safety and Health Administration  
U. S. Department of Labor  
200 Constitution Avenue, NW  
Washington, DC 20210

RE: *Combustible Dust* Advanced Notice of  
Proposed Rulemaking (OSHA Docket No.  
OSHA-2009-0023)

Dear Assistant Secretary Michaels:

On behalf of our 32,000 member safety, health and environmental (SH&E) professionals, the American Society of Safety Engineers (ASSE) commends you and the staff of the Occupational Safety and Health Administration (OSHA) for moving forward rulemaking to address the complex workplace risks posed by combustible dust. ASSE appreciates the challenges OSHA faces in bringing OSHA's oversight of employers' management of combustible dust risks without making an already complex issue more difficult for employers, SH&E professionals and employees. ASSE looks forward to continued involvement in this rulemaking.

Managing the risks posed by combustible dust is a common responsibility of our members in working with employers to protect workers and property from safety, health and environmental risks in every industry, every state and across the globe. Their collective experience and training provide the basis for the following comments in response to the Advanced Notice of Proposed

Rulemaking (ANPR) *Combustible Dust* (74 Federal Register 54334; October 21, 2009), which are presented based on the four agenda topics stakeholders were asked to address at the December 14, 2009 Public Hearing in Washington, DC, in which ASSE participated.

### **NFPA Standards**

Consistent with what ASSE has said in the past, most notably to Congress for the July 2008 Senate Subcommittee on Employment and Workplace Safety hearing on the combustible dust issue ([http://www.asse.org/professionalfaffairs\\_new/communications/federal/archive/files/072908SSubcCombDustStatment.doc](http://www.asse.org/professionalfaffairs_new/communications/federal/archive/files/072908SSubcCombDustStatment.doc)), ASSE can support a new combustible dust standard but only one that is no less effective than the National Fire Protection Association's (NFPA) voluntary consensus standards addressing combustible dust. The bill under consideration by the Subcommittee at the time (HR 522) appropriately identified NFPA's voluntary consensus standard NFPA 654: *Standard on Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids* (<http://www.nfpa.org/AboutTheCodes/AboutTheCodes.asp?DocNum=654>) as the starting point for a new OSHA standard.

That OSHA should base a standard on widely accepted voluntary consensus standards is fully consistent with the duty established under Public Law 104-113, "The National Technology Transfer and Advancement Act of 1995," and OMB Circular A119. In Public Law 104-113, Congress ordered that

(A)ll Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.

In every applicable industry, our members successfully manage combustible dust risks using this voluntary standard, accepted risk evaluation techniques and processes, and applicable OSHA standards. Any substantive diversion from what already is being used successfully now in industry can only lead to unneeded new complexities and confusion in the already complex set of risks that combustible dust poses to employers. As the ANPR recognizes, the NFPA standards are updated and revised on a regular basis to reflect current conditions, allowing stakeholders in the voluntary consensus process – including leading ASSE members – to incorporate changes and advancements they learn directly from the front lines of managing combustible dust risks.

Most important to note is that the NFPA dust explosion standards are categorized according to industry. A key ASSE concern with this rulemaking is that, because various OSHA standards now govern employer's responsibilities concerning combustible dust, this rulemaking will seek to establish a single over-arching standard that compromises

needed specificity in an effort to address various industries and workplace situations. Making anything simpler is always tempting. However, addressing combustible dusts is not given to a simplistic approach. We do not see how a single standard or a standard that seeks to provide an overarching framework to the existing standards can work better than what has already been accomplished in the NFPA standards.

This is especially true when our members report that some of its companies are using elements of process safety management (PSM) to manage certain combustible dusts exposures in their industries. By maintaining an approach that is industry-specific, OSHA will be better able to incorporate elements of PSM as greater understanding of such an approach grows. An industry-specific approach is also more consistent with international approaches such as the European Union's ATEX Guidelines (<http://ec.europa.eu/enterprise/sectors/mechanical/documents/guidance/atex/application/>), an important consideration as OSHA moves towards global harmonization of hazard communications and other safety and health management systems. As ASSE has often said, OSHA plays an important role in helping advance improved harmonization with international standards that help this nation's employers compete better in global marketplaces, and this role cannot be overlooked.

As you know, NFPA 654 is currently in the process of being updated, with the current revision scheduled for completion in 2011. We urge OSHA to work closely with the NFPA 654 Committee and, as much as possible, approach a new standard deliberately so that a final rule can reflect the best and latest perspective on addressing combustible dust risks that the voluntary consensus process can produce. While we agree that more focused attention to combustible dust among employers is needed, as is indicated in the September 2009 Status Report on Combustible Dust National Emphasis Program (<http://www.osha.gov/dep/combustibledust/NEP-status-report.pdf>), we do not believe that an expedient solution done too quickly to be able to take into account upcoming changes in NFPA 654 and other key input is warranted. Our members tell us that the current OSHA standards are not inadequate in the short term if moving too quickly results in a new standard that does not reflect anticipated advancements in NFPA 654. With appropriate cooperative efforts to improve understanding of combustible dust risks among employers, as we suggest below, OSHA's goal of improving management of combustible dust risks will be best served by waiting for this significant development.

Of course, related to the issue of consensus standards is the difficult issue of how to update those standards. ASSE addressed this issue in its comments to OSHA rulemaking concerning updating standards for personal protective equipment, where ASSE said

(T)he performance-oriented approach based on setting a general requirement – in this case that PPE be constructed in accordance with good design standards – coupled with listing in a Non-Mandatory Appendix of those national consensus standards OSHA determines support the goal of the standard shows potential for a workable approach.

[http://www.asse.org/professionalaaffairs\\_new/communications/federal/archive/files/071607OSHAstandardsPPE e.doc](http://www.asse.org/professionalaaffairs_new/communications/federal/archive/files/071607OSHAstandardsPPE e.doc)). That ongoing dilemma should not be at issue in this rulemaking. However, that the question about how to update consensus standard references is an issue in this rulemaking should encourage OSHA to redouble its efforts to find a new way to address the larger issue for all of its rulemaking.

Nevertheless, ASSE understands the variety of issues that OSHA faces in basing a standard on the NFPA voluntary consensus standard. NFPA 654 is itself complex, with references to 37 additional NFPA standards, three American Society of Mechanical Engineer (ASME) publications and two International Society of Automation (ISA) publications. While we believe that standards developing organizations are quickly coming to a new understanding of the value of transparency to their work, which should lead to greater availability of voluntary consensus standards, OSHA will need to balance the integral value of referenced standards with the ability of small employers and others without deep pockets to purchase standards. ASSE also believes that OSHA will be faced with simplifying some sections of NFPA 645, which can seem as if they were written for engineers with specific knowledge. Care must be taken to ensure that a reasonably knowledgeable small employer can understand the requirements of any final standard.

Perhaps the most important issue to resolve is that two different compliance methods are included in NFPA 654. One method is prescriptive and the other performance-based. While many employers successfully rely on the prescriptive method to manage combustible dust in their facilities and should not be kept from using that method in a new standard, ASSE believes that OSHA should do all that it can to encourage a movement toward the use of the performance-based method. Too often, our members see confusion among employers and employees and even among OSHA inspectors attempting to adhere to prescriptive measurements and requirements that often do not fit well with the realities of combustible dust risks. As a result, focus is placed on minute details instead of on the more important issues of administrative controls, engineering controls, and housekeeping where significant gains in safety and health protections can be achieved. The performance based approach is also comprehensive in that, in addition to the general requirements of process and facility design, process hazard analysis, and management of change, it also addresses life safety, fugitive dust control, heat from mechanical sparks and friction, training, and inspection maintenance.

### **Scope of Standard**

The impact of the failure of some employers to address appropriately combustible dust risks in workplaces is significant. The loss of workers' lives and injuries and the impact on their families is unacceptable. Property damage has also been significant, impacting jobs and creating hardships on entire communities. The significant, often exponential, losses that can occur from combustible dust explosions require the promulgation of an OSHA standard that can be seen as the minimum benchmark for all industry to follow. Without question, the standard must apply to all businesses. Even small businesses have employees, and their well being is as important as employees of large corporations.

Further, ASSE believes that companies offering products comprised of combustible dust must be required to identify the hazard in order to make a recipient or end user of the product aware that a potential hazard exists. Companies should also be encouraged to have products and by-products tested to identify potential hazards and to properly maintain and operate equipment. Most importantly, all handlers of dust should be responsible for hazard analysis to identify and mitigate combustible dust hazards.

Finally, appropriate leadership by OSHA in promulgating a standard requires that OSHA signal to industry and business leaders that the final standard resulting from this rulemaking sets only minimal requirements and that OSHA find ways to encourage proactive efforts that go beyond the minimum standards and provide enhanced protections for employees whenever possible.

### **Economic Impact and Small Employer Concerns**

No doubt, many employers, especially small businesses, will face economic challenges in meeting the requirements of a new standard. However, combustible dust hazards do not discriminate between the size and available resources of an operation when incidents occur. OSHA has preliminarily determined that 330,000 small firms owning 351,000 establishments and employing 6.5 million employees are in industries that experienced combustible dusts fires or explosions in the past. That a combustible dust standard should apply to small businesses clearly is appropriate. OSHA has always required that all workplaces be as free as practical from occupational safety and health hazards, and small employers are always significantly impacted by any new standards addressing workplace hazards. Nevertheless, as with any standard crafted by OSHA, a combustible dust standard must be carefully balanced to optimize the benefits of safeguarding workers without creating unnecessary economic hardships for small employers.

It is important to note that small employers rely on several concepts within OSHA standards to minimize the economic impact upon them. OSHA's hierarchy of controls provides a prioritized means of minimizing or eliminating workplace hazards in a cost-effective and flexible manner. In keeping with that concept, a new combustible dust standard must address administrative and engineering controls as well as housekeeping in a practical way that allows small employers flexibility during hazard mitigation that takes into account the cost of mitigation. A performance-based approach to compliance, as discussed above, can provide small employers especially with the kind of flexibility they need to address combustible dust hazards in a way that can take into account reasonable economic limitations, providing another argument for this approach.

This rulemaking can address specific economic issues to help small employers comply with a new combustible dust standard. While ASSE believes improved availability of voluntary consensus standards is being addressed in the marketplace, OSHA needs to ensure that a standard is written in a way that adheres to the key voluntary consensus standards without making it impossible for small employers to follow without a significant investment in consensus standards. OSHA must also be aware that a significant burden for small employers is the cost of mandatory testing to determine

explosive characteristics of combustible dusts. An OSHA standard might benefit from a visual definition or more generic classifications of some combustible dust hazards where risk-based hazards are presumed unless optional testing proves otherwise. The economic impact of a standard would be minimized if it allows the employer to visually determine if a dust explosion hazard area exists in a building such as small woodworking establishments. Producers of potentially combustible dusts should also be required to develop dust explosion hazard data and ensure that it is included in the Material Safety Data Sheet that would trigger workplace visual assessments by employers under certain conditions. Additionally, OSHA should consider a tiered approach to the prescriptive requirements applied to small, incidental, low risk operations, and those applied to medium and large sized higher risk operations, to minimize the economic impact on small employers.

Significant will be OSHA's ability to provide assistance to small employers through its cooperative programs. Through its partnerships with industry and alliances with organizations like ASSE, industry-specific hazard mitigation options need to be developed to provide employers with flexible, cost-effective options for addressing combustible dust hazards within their facilities. Through its cooperative programs, OSHA has established a wealth of capability in significant ongoing relationships and web-based resources, and ASSE will continue to offer the experience and expertise of its members to help assure that combustible dust resources are adequate to meet small employer needs. Such an effort can support OSHA outreach efforts through industry, trade associations and insurance/risk management groups to educate employers on cost-effective options for addressing hazard identification, mitigation, and compliance.

Another specific economic concern that OSHA outreach must address is the ability of small business to understand combustible dust management and the need to engage subject matter experts to help with implementation of programs to meet compliance. Small business will need qualified consultants and compliance assistance from OSHA. Yet the cost of hiring an appropriate SH&E professional is always an issue for small business. ASSE encourages OSHA and industry to develop additional combustible dust hazard courses aimed at small employers to provide them with further cost-effective options for obtaining various levels of subject matter expertise.

Finally, important for employers of all sizes is understanding the positive impacts to a business that can come from investing resources into mitigation of combustible dust hazards. Employers easily recognize that the retro-fitting and application of controls for combustible dust may be a substantial cost for some older, existing facilities. More difficult for small employers especially to see is the loss of life and terrible economic consequences to organizations from combustible dust explosions. Construction, renovations and retrofits should also be recognized as an investment that can generate returns by providing loss prevention and risk management benefits. For example, Factory Mutual (2009) performed an analysis to determine the effect of adequate damage-limiting construction on the size of the average loss. For buildings, the protected loss was about 45% of those unprotected. For equipment, the protected loss was about 25% of the unprotected loss. Payback from investing in combustible dust hazard

mitigation must also take into account initial and cumulative economic impact as well as factors like the impact of human burns. Cost for burn treatment for 4,466 cases studied by a fire resistant clothing manufacturer was estimated at \$1.3 billion. Interactive web-based tools similar to OSHA's "Safety Pays" would help employers understand that there is a return on investment from resources dedicated to managing combustible dust hazards.

### **Hazard Mitigation**

A new combustible dust standard must take into account the fact that hazard mitigation is a multi-part process that begins with the awareness that a combustible dust ignition and subsequent explosion potential may exist. Although combustible dust explosions can generate enormous damage and frequently result in fatalities, from the perspective of our member SH&E professionals, adequate employer knowledge of the combustible dust hazards they face may be the most important factor in preventing explosions. Knowledge of dust hazards does not necessarily make prevention or mitigation simple; controls in many situations can be fairly complex. However, an understanding of the hazards, in our members' experience, encourages employers to take preventive measures through a logical mitigation process, which includes (1) recognition that an explosive dust hazard may exist, (2) education and training requirements before, during and after a finding of a dust hazard, (3) assessment of the scale and extent of the hazard, (4) understanding and applying applicable regulations and standards, (5) undertaking mitigation efforts that must involve design, (6) monitoring and housekeeping, and, finally, (7) proper documentation and continual oversight. The importance of this process underscores ASSE's concern that a new combustible dust standard be consistent with NFPA 654, which incorporates these elements. A new OSHA standard must do no less.

In the context of these elements of the mitigation process, ASSE urges that OSHA take into consideration the following related concerns:

Recognition that a hazard may exist – A final combustible dust standard must ensure that facilities carefully identify the following in order to assess the potential for dust explosions:

- Materials that can be combustible when finely divided;
- Processes which use, consume, or produce combustible dusts;
- Open areas where combustible dusts may build up;
- Hidden areas where combustible dusts may accumulate;
- Means by which dust may be dispersed in the air;
- Potential ignition sources;
- Potential for explosive confinement; and
- Probability that all or several of these conditions exist at one or more locations within a facility.

Related to the recognition of a hazard is an appropriate definition of combustible dust. Because of the large number of products that can create combustible dust, and the physical characteristics of each specific dust, a single definition to encompass all dust is

extremely difficult and, given that reality, not advisable. Any definition should require that, where ambiguity or questions regarding a combustibility of the dust exists, employers should be required to use laboratory analysis and testing to determine the level of hazard the dust material may present.

Further, ASSE believes a need exists to establish a common method for assigning an explosive classification to materials. ASSE urges OSHA to consider a performance-based approach to this classification since it would be impossible for OSHA to establish classifications for every dust. A related issue that must be resolved is how to classify dusts when different particle sizes are involved.

Education and training – Employees are among the first to observe problems in the making and the first to notice an incident or injury. So, employees should be considered the first line of defense against combustible dust explosions, and a standard must ensure adequate training requirements for employees, which is the responsibility of their employers. To help ensure adequate employee education, aggressive educational campaigns aimed at employers and employees in industries where combustible dust is most at issue is needed in addition to a continued National Emphasis Program. Again, we urge OSHA to rely on its cooperative programs to work hand-in-hand with OSHA field staff and technical staff involved in this rulemaking and, when appropriate, its established alliance partners, to develop and carry out program that can assist employers to train their employees. Our members also report that they do not believe some OSHA field personnel are fully prepared to deal with the complexities of the combustible dust issue. Better training of appropriate inspection staff is essential and should be built into this kind of educational program. Also included in an educational outreach must be state and local fire authorities. The CSB identified that a large majority of state and local jurisdictions in the United States have adopted NFPA standards but that the enforcement of the codes at the state and local level is inconsistent and largely ineffective. A glaring need exists to educate state and local authorities about the hazards and conditions that can lead to dust explosions and dust hazards, whether or not a new standard is established.

Hazard assessment – Of all the mitigation process elements, hazard assessment is the most important. The ANPR for this rulemaking indicates that further exploration by OSHA of the hazard assessment issue is needed. Unclear from the discussion are what the acceptable methods of performing hazard analyses will be, whether reassessment schedules will be required, and how audit findings may be used during inspections. ASSE urges resolution of these issues.

ASSE also urges inclusion of third party evaluations as a means of encouraging greater risk assessment among employers. OSHA resources are not consistent with the numbers of employers where combustible dust is a risk. OSHA and the state plan consultative programs, with effective training programs in combustible dust risks for staff, can be a valuable resource for employers on this issue. A program that incorporates third party assessments of site-specific dust issues and control options by knowledgeable and experienced independent SH&E professionals is a way of expanding OSHA's outreach by providing employers a focused opportunity to obtain needed hazard assessments.

Under an approach that would ensure the professionalism, expertise and independence of SH&E professionals is a way of expanding OSHA's outreach by allowing employers an opportunity to obtain needed hazard assessments. A full discussion of the value of appropriate third party audits can be found at

[http://www.asse.org/professionalaaffairs\\_new/communications/federal/archive/files/Cong'1%20Testimony%205-12-05%20FINAL.doc](http://www.asse.org/professionalaaffairs_new/communications/federal/archive/files/Cong'1%20Testimony%205-12-05%20FINAL.doc)

Undertaking mitigation efforts – An unresolved issue in the ANPR is how OSHA will address engineering controls in this rulemaking, including what the triggers for implementing controls will be, whether OSHA will use subject matter experts when conducting inspections of these control systems, and how OSHA will keep abreast of future changes in technology. OSHA needs to address these questions as this rulemaking progresses.

Monitoring and housekeeping – While the best way to control dust accumulation is by advanced containment design, housekeeping is the principle backup methodology and means of control in most scenarios. However, the “removal” process is also a potential explosive hazard requiring equal and on-going attention and monitoring. Dust management through housekeeping also requires a special well-trained and managed team beyond that of a typical custodial workforce. Again, ASSE recommends a performance-based approach, through which the housekeeping efforts can be focused more towards dust accumulation restrictions and less on how the employer enforces or manages the requirement.

Documentation and continual oversight – In our members review of this ANPR, they raised a concern related to record keeping. Our members are interested in knowing whether there will be additional reporting requirements for dust incidents? Also, will a separate log of incidents be required to be kept over a specific time period?

## **Conclusion**

ASSE appreciate this opportunity to comment on this ANPR and looks forward to continued participation in this rulemaking. Through an effective standard based on what has been demonstrated to work and increased cooperative efforts to raise awareness and understanding, this nation can significantly improve employers' adherence to widely accepted practices of managing combustible dust risks.

Sincerely,

C. Christopher Patton, CSP  
President