

## Morgan, Christina

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**From:** Meidl, Rachel [rachel\_meidl@americanchemistry.com]  
**Sent:** Wednesday, July 24, 2013 8:09 AM  
**To:** comments  
**Subject:** Comments from American Chemistry Council  
**Attachments:** OSHA\_DustANPR\_ACC SupplementalComments\_081010.docx; OSHA\_DustANPR\_ACC SuppTech Comments\_120310.doc; OSHA\_DustANPR\_ACC\_comments\_011910.pdf

To Whom It May Concern:

The American Chemistry Council (ACC) would like to provide comments in response to the U.S. Chemical Safety and Hazard Investigation Board's (CSB) July 25, 2013 "Sunshine Act" meeting requesting an OSHA general industry standard for combustible dust as the agency's first "Most Wanted Safety Improvement." Attached are ACC's initial comments (dated 01/19/2010) on the combustible dust Advance Notice of Proposed Rulemaking and the supplemental comments (dated 08/10/2010 and 12/03/2010).

We hope that CSB will find our contributions helpful. Should you have questions about our input, please contact me by phone at (202) 249-6426 or by e-mail at [Rachel\\_meidl@americanchemistry.com](mailto:rachel_meidl@americanchemistry.com).

Kind regards,

*Rachel A. Meidl – Director, Environment & Process Safety | Regulatory & Technical Affairs*

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*VIA REGULATIONS.GOV*

January 19, 2010

Occupational Safety and Health Administration  
200 Constitution Avenue, NW  
Washington, DC 20210

**Re: RIN 1218-AC41**

Advance Notice of Proposed Rulemaking on Combustible Dust  
Comments of the American Chemistry Council

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Dear Sir or Madam:

The American Chemistry Council (ACC) is pleased to submit comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust. ACC shares OSHA's concerns about the hazards associated with combustible dust and therefore takes seriously the need for compliance with existing standards to manage the risk associated with this material.

ACC supports OSHA's efforts to sufficiently reduce risk associated with combustible dust where it is found to be significant. We believe that the Agency can most effectively accomplish this goal by continued enforcement of existing relevant standards and formalized educational outreach. In addition, ACC offers the following recommendations to OSHA:

- ACC respectfully recommends that OSHA fulfill its statutory requirement to demonstrate whether a combustible dust standard is required for the chemical industry, as well as the other industry sectors covered under the ANPR, by conducting a sound scientific analysis of the risk posed to their employees from combustible dust hazards. This analysis would allow OSHA to determine which sectors or portions of them pose the highest risk. We believe that by prioritizing industry risks, the Agency would be able to maximize risk reduction and resource efficiency.

If OSHA can show that a comprehensive rule should be applicable to the chemical industry based on a sound analysis of significant risk, then OSHA should use a performance based approach to rulemaking. It should examine its existing standards to determine if they can be applied more vigorously as currently written, or enhanced

as qualitatively as possible to address the relevant physical aspects and management system elements that lead to dust explosions and fires.

In considering whether to enhance existing standards, we believe that OSHA should evaluate pertinent NFPA or other consensus standards for performance-based methods that would maximize the reduction of fundamental combustible dust hazards that drive risk and how these methods can be incorporated as appropriate into existing OSHA standards. Such methods should be sufficient regardless of whether they are subsequently modified due to changes made to the consensus standard(s) from which they originated. This approach should also include "Performance Based Design Options" based on Process Hazard Assessments.

As summarized above, to achieve OSHA's risk reduction goals, the Agency should continue to enforce its current standards that are relevant to one or more of the elements which contribute to combustible dust fires and explosions. In addition, OSHA should establish a formal educational outreach program for combustible dust to help improve awareness and management of combustible dust hazards. This program could be as simple as developing a web-based tool that is updated as appropriate.

- OSHA should avoid mandating specific technologies and prescriptive methodologies in any potential proposed rule.
- Regarding the issue of retroactivity, ACC recommends that in the development of any potential proposed rule, the Agency should recognize that facilities would have been expected to be constructed in accordance with guidance in existence at the time and thus OSHA should focus predominantly on procedural changes which would be expected to reduce risk. Where facility or process changes would be necessary, OSHA should provide sufficient time and/or flexibility so that existing facilities can adequately plan and schedule these changes.
- OSHA should not require chemical manufacturers under any potential rulemaking to provide specific dust hazard information on Safety Data Sheet (SDS) unless a product will be sold in dust form with known hazards that can be included on the SDS. Otherwise, it is only appropriate for manufacturers to include on SDS a statement of general warning that a product may cause an explosion or fire if modified into a dust form.
- OSHA should recognize that some amount of dust will always occur in the work place. There is no zero-risk situation.

Finally, prior to developing a proposed rule, we recommend that OSHA meet with stakeholders from interested specific industry sectors to continue gathering as much pertinent information as possible, in addition to conducting public stakeholder meetings.

ACC appreciates the opportunity to comment on this ANPR. We look forward to future dialogue with OSHA on the important combustible dust issues discussed therein. Please

contact me if you have any questions or concerns about our comments. I can be reached by phone at (703) 741-5247 or by e-mail at [laurie\\_miller@americanchemistry.com](mailto:laurie_miller@americanchemistry.com).

Sincerely,

A handwritten signature in cursive script that reads "Laurie A. Miller".

Laurie A. Miller  
Director  
Regulatory and Technical Affairs

Attachment

**January 19, 2010**  
**Comments of the**  
**American Chemistry Council**  
**on the Occupational Safety and Health Administration's**  
**Advance Notice of Proposed Rulemaking on Combustible Dust**

The American Chemistry Council (ACC) is pleased to submit these comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust.<sup>1</sup> ACC shares OSHA's concerns about the hazards associated with combustible dust and therefore takes seriously the need for compliance with existing standards to manage the risk associated with this material.

ACC supports OSHA's efforts to sufficiently reduce risk associated with combustible dust where it is found to be significant. We believe that OSHA can most effectively accomplish this goal by continued enforcement of existing relevant standards, and formalizing and enhancing the Agency's excellent educational outreach program currently in place. The basis for this recommendation is provided in our comments below. These comments are provided subsequent to those regarding concerns we have about the basis suggested in the ANPR for development of a combustible dust rule for the chemical industry. We hope OSHA will find our comments and recommendations useful as it moves forward in the rulemaking process.

ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care<sup>®</sup>, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$689 billion enterprise and a key element of the nation's economy. It is one of the nation's largest exporters, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.

ACC's member companies are committed to maintaining safe and healthy workplaces, and routinely exceed federal and state standards for workplace safety. They engage in a variety of voluntary health and safety initiatives, including OSHA Voluntary Protection Programs.

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<sup>1</sup> 74 Fed. Reg. 54335 (October 21, 2009).

As a normal aspect of many ACC members' businesses, a number of their employees work in settings with the potential for exposure to combustible dust. As a result, our industry has invested many years in implementing methods and practices to reduce worker exposure to the hazards associated with combustible dust. In addition, several of our member company representatives are leaders in both developing and advancing the science and technology around this material. ACC member companies are also subject to regulation by OSHA health standards to manage such potential exposures to combustible dust hazards, and accordingly have a vital interest in this rulemaking.

**I. The ANPR does not provide an adequate basis for development of a proposed comprehensive combustible dust standard for the chemical industry.**

ACC believes that the ANPR stage of rulemaking is significant as it is a vehicle for an agency to provide as sound a basis as possible for rulemaking and for gathering the information from a potentially regulated industry that is necessary to develop a proposed rule for that industry. Likewise, an ANPR is a means for the potentially regulated industry to provide substantive feedback to an agency's contention that rulemaking is necessary, including providing important information on policy and technical questions posed therein. ACC appreciates the rulemaking challenges that OSHA faces in light of the catastrophic combustible dust incidents that have occurred, and we certainly understand that the Agency is attempting to respond to recommendations from the U.S. Chemical Safety and Hazard Investigation Board (CSB) and preliminary Congressional actions that would require OSHA to undertake combustible dust rulemaking. We believe, however, that while OSHA posed many appropriate questions to the potentially regulated community to help support a rulemaking in the ANPR, it did not provide an adequate scientific basis for a rulemaking.

***Prior to issuing a proposed rule OSHA must fulfill its statutory obligation to demonstrate that the chemical industry poses significant risk to its employees due to combustible dust.***

ACC is keenly aware that the consequences of a combustible dust fire or explosion can be catastrophic. Indeed, combustible dust fires and explosions have caused the loss of lives and enormous property damage over the years as evidenced by the examples of combustible dust incidents in the ANPR. In the ANPR, OSHA states that the Agency "is developing a standard that will comprehensively address the fire and explosion hazards of combustible dust<sup>2</sup>." OSHA contends that the "information currently available indicates that the risk of combustible dust [incidents] is considerable."<sup>3</sup>

OSHA is relying, in part, on the catastrophic nature of combustible dust fires and explosions to prove that employees are exposed to a significant risk. OSHA also relies

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<sup>2</sup> *Id.* 54335.

<sup>3</sup> *Id.* 54341.

on the information in Table 1 of the ANPR to prove that employees are exposed to a significant risk. ACC respectfully disagrees with OSHA's approach to demonstrating significant risk.

The fact that a consequence of a combustible dust fire or explosion can be catastrophic does not, by itself, mean that employees are exposed to a significant risk. In order to prove that employees are exposed to a significant risk, OSHA must have evidence showing that the likelihood of a combustible dust fire or explosion occurring in a particular industry is significant. If OSHA cannot prove that the likelihood of a combustible dust fire or explosion occurring in the particular industry is significant, the Agency does not have the legal authority to apply a combustible dust standard to that industry.

OSHA does not present any evidence in the ANPR proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant. Table 1 of the ANPR attempts to summarize information from CSB's *Combustible Dust Hazard Study*<sup>4</sup> and the website [dustexplosions.blogspot.com](http://dustexplosions.blogspot.com). Based on ACC's preliminary analysis of this information, it contains many inaccuracies. In particular, the information inaccurately states that certain incidents involved combustible dust and that the alleged incidents involved the chemical manufacturing industry. Moreover, the information does not address whether the employers were complying with existing OSHA standards at the time of the alleged incidents. Because OSHA does not present adequate evidence in the ANPR proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant, it does not have the legal authority to apply a comprehensive combustible dust standard to this industry.

### **Recommendation:**

ACC respectfully recommends that OSHA fulfill its statutory requirement to demonstrate whether a combustible dust standard is required for the chemical industry as well as the other industry sectors covered under the ANPR by conducting a sound scientific analysis of the risk posed to their employees from combustible dust hazards. This analysis would allow OSHA to determine which sectors or portions of them pose the highest risk. We believe that by prioritizing industry risks, the Agency would be able to maximize risk reduction and resource efficiency.

If OSHA can show that a comprehensive rule should be applicable to the chemical industry based on a sound analysis of significant risk, then OSHA should use a performance-based approach to rulemaking. It should examine its existing standards to determine if they can be applied more vigorously as currently written, or enhanced as

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<sup>4</sup> U.S. Chemical Safety and Hazard Investigation Board Investigation Report No. 2006-H-1, *Combustible Dust Hazard Study*; November 2006

qualitatively as possible to address the relevant physical aspects and management system elements that lead to dust explosions and fires.

In considering whether to enhance existing standards, we believe that OSHA should evaluate pertinent NFPA or other consensus standards for performance-based methods that would maximize the reduction of fundamental combustible dust hazards that drive risk and how these methods can be incorporated as appropriate into existing OSHA standards. Such methods should be sufficient regardless of whether they are subsequently modified due to changes made to the consensus standard(s) from which they originated. This approach should also include "Performance Based Design Options" based on Process Hazard Assessments.

## **II. Compliance with existing OSHA standards prevents combustible dust fires and explosions.**

In addition to relying erroneously on the catastrophic nature of a combustible dust fire or explosion and Table 1 of the ANPR to show significant risk, OSHA contends that its existing standards do not address all of the elements needed for a combustible dust fire or explosion. OSHA has several standards, each of which addresses at least one of the elements needed for a combustible dust fire or explosion, which include:

- 1910.22 (Housekeeping)
- 1910.94 (Ventilation)
- 1910.146 (Permit-Required Confined Space)
- 1910.176 (Materials Handling)
- 1910.178 (Powered Industrial Trucks)
- 1910.307 (Classification of Hazardous Locations)
- 1910.252 (Welding, Cutting, and Brazing)

If employers comply with these OSHA standards, they will eliminate at least one of the elements needed for a combustible dust fire or explosion. This is true even when employers fail to comply with applicable national consensus standards. If one of the elements needed for a combustible dust fire or explosion is eliminated, a combustible dust fire or explosion will not occur in the workplace and employees will not be exposed to a significant risk.

On several occasions, OSHA has acknowledged publicly that had employers complied with existing OSHA standards, combustible dust incidents would not have occurred in their workplace. For example, at a news conference in Savannah Georgia after the completion of the inspection of the Imperial Sugar refinery, former OSHA Chief Edward G. Foulke, Jr., stated: "The investigation concluded that this catastrophic incident could

have been prevented if Imperial Sugar had complied with existing OSHA safety and health standards.” See New York Times Article. OSHA also issued two General Duty Clause citations to the Imperial Sugar refinery alleging violations of applicable national consensus standards.

In addition to OSHA standards, several National Fire Protection Association (NFPA) consensus standards have been developed by various stakeholders, including chemical industry representatives, to augment existing OSHA standards. These standards address general and certain specific hazards associated with combustible dust in their workplaces. As additional support for a comprehensive combustible dust standard, OSHA relies on 160 General Duty Clause citation items alleging violations of applicable national consensus standards that were issued between November 1, 2007 and February 24, 2009 as a result of the Combustible Dust National Emphasis Program. OSHA also relies on CSB’s 2006 *Combustible Dust Hazard Study* finding that many employers were not complying with applicable national consensus standards.

OSHA’s reliance on the General Duty Clause citations and the 2006 CSB *Combustible Dust Hazard Study* is misplaced. A review of OSHA’s database shows that the citation items have not been fully litigated before the federal Occupational Safety and Health Review Commission, the agency responsible for adjudicating workplace safety and health disputes between OSHA and private industry. OSHA acknowledges this fact in the ANPR where it states that, “the numbers may change over time through the informal conference and settlement process.”<sup>5</sup> Moreover, the 2006 CSB *Combustible Dust Hazard Study* does not provide any type of analysis of compliance with applicable national consensus standards to support their finding. In short, the 160 General Duty Clause Citations and the 2006 CSB study are simply allegations and do not provide a sound basis for demonstrating that the chemical industry poses significant risk from combustible dust hazards.

ACC firmly supports compliance with applicable NFPA consensus standards as required under currently adopted laws/ordinances. Furthermore, ACC supports voluntarily compliance with such consensus standards to continuously improve safety. As OSHA indicates in the ANPR, incorporation of NFPA standards wholesale into a comprehensive OSHA standard would present a number of significant regulatory challenges to the Agency.<sup>6</sup> We agree, and believe that this approach would result in implementation challenges as well.

***OSHA should formalize an educational outreach program.***

OSHA indicates in the ANPR that:

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<sup>5</sup> 74 Fed. Reg. 54335 (October 21, 2009), 54340.

<sup>6</sup> *Id.* 54339.

Outreach efforts (both public and private), employer awareness, and OSHA's enforcement have increased in response to various combustible dust incidents over the last decade. As a result, many employers continue to upgrade their facilities and update their operating procedures to prevent and control combustible dust hazards.<sup>7</sup>

OSHA is uniquely equipped to educate industry about the hazards of combustible dust. We believe that enforcement of OSHA's existing standards along with a formal educational outreach program would go a long way in addressing combustible dust hazards that may not be currently addressed.

**Recommendation:**

To achieve OSHA's risk reduction goals, the Agency should continue to enforce its current standards that are relevant to one or more of the elements that contribute to combustible dust fires and explosions. In addition, OSHA should establish a formal educational outreach program for combustible dust to help improve awareness and management of combustible dust hazards. This program could be as simple as developing a web-based tool that is updated as appropriate.

**III. OSHA did not provide sufficient information in the ANPR nor a sufficient comment period for providing comprehensive comments on the ANPR.**

Notwithstanding the lack of a basis for rulemaking for the chemical industry, OSHA asks a series of technical and economic questions in the ANPR in order to gather the information necessary to develop a proposed rule. ACC found the facility-specific and detailed nature of the questions as well as the number of questions to be problematic. Early during the comment period, ACC estimated the level of effort associated with surveying its membership based on the ANPR questions; compiling and analyzing the survey results; and developing a comprehensive set of comments on this aspect of the ANPR. We determined that the time required to perform these tasks was significantly longer than the comment period.

In addition, we found that given the utility of NFPA 654 to the chemical industry, development of comprehensive comments on the ANPR would have required analysis of the latest version of that standard, which has yet to be finalized and issued by NFPA.

Absent comprehensive technical comments, ACC makes the recommendations that follow in addition to those in Sections I and II above.

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<sup>7</sup> *Id.* 54346.

**Recommendation:**

- General response to questions regarding engineering controls<sup>8</sup>: Avoid mandating specific technologies and prescriptive methodologies in any potential proposed rule.
- OSHA discusses retroactivity in the ANPR in Section *II.I Administrative Controls* in the ANPR.<sup>9</sup> ACC recommends that in the development of any potential proposed rule, the Agency should recognize that facilities would have been expected to be constructed in accordance with guidance in existence at the time and thus OSHA should focus predominantly on procedural changes which would be expected to reduce risk. Where facility or process changes would be necessary, OSHA should provide sufficient time and/or flexibility so that existing facilities can adequately plan and schedule these changes.
- General response to questions regarding Safety Data Sheets (SDS)<sup>10</sup>: Chemical manufacturers should not be required under any potential rulemaking to provide specific dust hazard information on SDS unless a product will be sold in dust form with known hazards that can be included on the SDS. Otherwise, it is only appropriate for manufacturers to include on SDS a statement of general warning that a product may cause an explosion or fire if modified into a dust form.
- OSHA should recognize that some amount of dust will always occur in the work place. There is no zero-risk situation.

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<sup>8</sup> *Id.* 54343 and 54344.

<sup>9</sup> *Id.* 54334.

<sup>10</sup> *Id.* 54342.



VIA ELECTRONIC MAIL

August 10, 2010

Occupational Safety and Health Administration  
200 Constitution Avenue, NW  
Washington, DC 20210

Attention: Mr. Mat Chibbaro

**Re: RIN 1218-AC41**

Advance Notice of Proposed Rulemaking on Combustible Dust  
Supplemental Comments of the American Chemistry Council

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Dear Mr. Chibbaro:

The American Chemistry Council (ACC) is pleased to submit supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust. We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments to fulfill certain statutory obligations for this rulemaking. The comments also expand upon ACC's discussion with OSHA on this issue at its meeting with the Agency May 11, 2010.

Specifically, OSHA is required to perform a significant risk analysis on an industry basis as well as demonstrate that each dust the agency intends to regulate exposes employees to a significant risk of harm. By completing these required steps in the rulemaking process, ACC believes that OSHA will be able to more efficiently focus its resources on the workplaces that pose the most potential risk from combustible dust hazards. We also believe that industry compliance with, and agency enforcement of existing OSHA standards to manage this risk, combined with a robust agency educational outreach and training program would achieve the risk reduction that OSHA seeks.

ACC appreciates the opportunity to provide supplemental comments on this ANPR. We look forward to continued dialogue with OSHA on the important combustible dust issues discussed therein. Please contact me if you have any questions or concerns about our comments. I can be reached by phone at (703) 741-5247 or by e-mail at [laurie\\_miller@americanchemistry.com](mailto:laurie_miller@americanchemistry.com).

Sincerely,

Laurie A. Miller  
Director  
Regulatory and Technical Affairs

Attachment

**August 10, 2010**  
**Supplemental Comments of the**  
**American Chemistry Council**  
**on the Occupational Safety and Health Administration's**  
**Advance Notice of Proposed Rulemaking on Combustible Dust**

The American Chemistry Council (ACC) is pleased to submit supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust.<sup>1</sup> We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments to fulfill certain statutory obligations for this rulemaking. The comments also expand upon ACC's discussion with OSHA on this issue at its meeting with the Agency May 11, 2010.

Specifically, ACC recommends that OSHA perform a significant risk analysis on an industry basis as well as demonstrate that each dust the Agency intends to regulate exposes employees to a significant risk of harm. By completing these required steps in the rulemaking process, ACC believes that OSHA will be able to more efficiently focus its resources on the workplaces that pose the most potential risk from combustible dust hazards. We also believe that industry compliance with, and agency enforcement of existing OSHA standards to manage this risk, combined with a robust agency educational outreach and training program would achieve the risk reduction that OSHA seeks.

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ACC's member companies are committed to maintaining safe and healthy workplaces, and routinely exceed federal and state standards for workplace safety. They engage in a variety of voluntary health and safety initiatives, including OSHA Voluntary Protection Programs.

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<sup>1</sup> 74 Fed. Reg. 54335 (October 21, 2009).

As a normal aspect of many ACC members' businesses, a number of their employees work in settings with the potential for exposure to combustible dust. As a result, our industry has invested many years in implementing methods and practices to reduce worker exposure to the hazards associated with combustible dust. In addition, several of our member company representatives are leaders in both developing and advancing the science and technology around combustible dusts. ACC member companies are also subject to regulation by OSHA health standards to manage such potential exposures to combustible dust hazards, and accordingly have a vital interest in this rulemaking.

**I. OSHA DID NOT PROVIDE EVIDENCE PROVING THAT THE CHEMICAL MANUFACTURING INDUSTRY IS EXPOSED TO A SIGNIFICANT RISK OF COMBUSTIBLE DUST FIRES AND EXPLOSION OCCURRING IN THE WORKPLACE.**

In the Advance Notice of Proposed Rulemaking for Combustible Dust ("ANPR"), OSHA states that it is going to develop a comprehensive standard that will address combustible dust hazards in the workplace. 74 FR 54334, 54335 (October 21, 2009). OSHA contends that a comprehensive combustible dust standard is warranted because the "information currently available indicates that the risk of combustible dust [incidents] is considerable." *Id.* at 54341. In support of this contention, OSHA relies, in part, on the catastrophic nature of combustible dust fires and explosions to prove that employees are exposed to a significant risk of harm. *Id.* at 54337-54338. OSHA also relies on Table 1 of the ANPR to prove that certain industries are exposed to a significant risk of harm. *Id.* The American Chemistry Council ("ACC") respectfully disagrees.

ACC is keenly aware of the catastrophic nature of combustible dust fires and explosions. Indeed, combustible dust fires and explosions have caused the loss of life and enormous property damage over the last thirty years. For example, a combustible dust explosion at the Imperial Sugar refinery in Port Wentworth, Georgia killed 14 employees and seriously injured 36 others in March of 2008. The property damage as a result of the combustible dust explosion was in the millions.

The mere fact that combustible dust fires and explosions can be catastrophic does not necessarily mean, however, that all industries with combustible dust in the workplace expose their employees to a significant risk of harm. Indeed, section 3(8) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 652 ("OSH Act") defines an "occupational safety and health standard" as one that is "reasonably necessary or appropriate to provide safe or healthful employment." In *Industrial Union Department, AFL-CIO v. Marshall (Benzene)*, 448 U.S. 607 (1980), the Supreme Court interpreted the meaning of section 3(8) of the OSH Act and concluded that in order to promulgate an occupational safety or health standard as defined in section 3(8) of the OSH Act, OSHA has the burden of proving that employees are exposed to a significant risk of harm. *Id.* at 642. The Supreme Court reasoned that section 3(8) of the OSH Act "was not designed to require employers to provide absolutely risk-free workplaces" *Id.* at 651. The Supreme Court explained that requiring employers to provide absolutely risk-free

workplaces “would give OSHA power to impose enormous costs that might produce little, if any, discernible benefit.” *Id.* at 645.<sup>2</sup>

OSHA recognizes that the Agency has the burden of proving that employees are exposed to a significant risk of harm. Indeed, in response to a remand from the District of Columbia Court of Appeals regarding the validity of the Lockout/Tagout standard, 29 C.F.R. § 1910.147, OSHA promulgated a Supplemental Statement of Reasons regarding its rulemaking authority for safety standards. 58 FR 16612 (March 30, 1993). In the Supplemental Statement of Reasons, OSHA stated that in order to promulgate a safety standard, the Agency has the burden of proving: (1) The proposed standard substantially reduces a significant risk of material harm; (2) Compliance with the proposed standard is technologically feasible; (3) Compliance with the proposed standard is economically feasible; (4) The proposed standard employs the most cost-effective means of achieving its protective goal; (5) If the proposed standard deviates from an existing national consensus standard, the proposed standard better effectuates the OSH Act’s protective purpose than the national consensus standard; and (6) The proposed standard is supported by the evidence in the rulemaking record and either is consistent with prior Agency practice or is supported by a justification for departing from that practice.

Courts have also held that OSHA has the burden of proving significant risk of harm in each industry the Agency is intending to regulate. *See Texas Independent Ginners v. Marshall*, 630 F.2d 398 (5th Cir. 1980). In *Texas Independent Ginners*, the Fifth Circuit Court of Appeals struck down the Cotton Dust standard as applied to the cotton gin industry. *Id.* at 413. In striking down the Cotton Dust standard as applied to the cotton gin industry, the Fifth Circuit Court of Appeals determined that OSHA failed to prove that the cotton gin industry exposed its employees to a significant risk of harm. The Fifth Circuit Court of Appeals explained that OSHA could not rely on evidence that the textile industry was exposed to significant risk of harm to prove that the cotton gin industry was exposed to a significant risk of harm. *Id.* at 408-409.<sup>3</sup>

Additionally, courts have held that OSHA has the burden of proving that a significant risk of harm exists for each hazard the Agency is intending to regulate. *See AFL-CIO v. OSHA*, 965 F.2d 962 (11<sup>th</sup> Cir. 1992). In *AFL-CIO v. OSHA*, the Court of Appeals vacated the Air Contaminants standard. *Id.* at 972. The Air Contaminants standard attempted to establish permissible exposure levels for 428 chemical substances. *Id.* at 962. In vacating the Air Contaminants standard, the Court of Appeals determined that OSHA had the burden of proving that each chemical substance the Agency intended to regulate exposed employees to a significant risk of harm. *Id.* at 986. The Court of Appeals explained that OSHA simply grouped the 428 chemical substances together for the purposes of proving significant risk of harm. *Id.*

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<sup>2</sup> *See also American Textile Manufacturers Institute v. Donovan*, 452 US 490 (1981).

<sup>3</sup> It is worth noting that OSHA often excludes particular industries from complying with occupational safety and health standards. For example, OSHA excluded the construction, agriculture, and maritime industries from complying with the Lockout/Tagout standard, 29 C.F.R. § 1910.147. OSHA also excluded the portland cement industries from complying with the Chromium standard, 29 C.F.R. § 1910.1026.

In the present case, OSHA intends to regulate many different types of dust in a comprehensive combustible dust standard. Like the 428 chemical substances in the Air Contaminants standard, OSHA has the burden of proving that each dust the Agency intends to regulate exposes employees to a significant risk of harm. That is, OSHA must have substantial evidence proving that the likelihood of the individual dust causing a fire or explosion in the workplace is significant. This would include, for example, determining the particle size, quantity, and the amount of energy needed to create a fire or explosion that generates damaging overpressure or potential harm outside the immediate vicinity of the event, for each unique chemical composition.<sup>4</sup>

According to this well-established federal case law, OSHA has the burden of proving that the chemical manufacturing industry is exposed to a significant risk of harm in order to apply a comprehensive combustible dust standard to that industry. That is, OSHA must have substantial evidence proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant.

Indeed, the mere fact that an individual dust is combustible does not, by itself, mean that employees are exposed to a significant risk of harm. Certain extrinsic, situation-specific conditions must exist in order for dust to cause or contribute to a major fire or explosion with significant overpressure. Those conditions vary widely depending on the chemical composition and physical form of individual dusts. For example, the conditions needed to create wood dust fires or explosions are vastly different than the conditions needed to create metal dust fires or explosions. OSHA has not set forth this type of evidence in the ANPR. ACC recognizes that this will be a daunting task for OSHA, as experts in the field have correctly noted: “Part of the problem with regulating dust explosions is the confusion about which dusts can explode and under what conditions. Even how much dust is a hazard is still unknown.” Amy Beasley Spencer, *Dust: When a Nuisance Becomes Deadly*, NFPA JOURNAL, Nov.-Dec. 2008, at 56, 58.

While OSHA has stated in its ANPR stakeholder meetings and in ACC’s meeting with the agency that it is not relying on Table 1 of the ANPR to define the scope of a potential rule, the data in this table is the only information that ACC is aware of that could be used for this purpose. We therefore analyzed the data assigned to the chemical industry therein, taking it at face value, and found that it is insufficient for proving that the chemical manufacturing industry is exposed to a significant risk of harm.

In this regard, in Table 1 of the ANPR, OSHA attempts to summarize data gathered from the 2006 Chemical Safety Board (“CSB”) Combustible Dust Study. The 2006 CSB Combustible Dust Study contains data from 1980 through 2005. ACC’s examination of the data revealed that the data contains significant errors. For example, Incident Number 191 involved potassium chlorate and perchlorate. Chlorates are strong oxidizers, not combustible dust. Because Incident

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<sup>4</sup> ACC believes that small localized fires or short-duration flash fires where adequate use of appropriate personal protective equipment or other localized means that provide adequate protection would be excluded. For this reason, use of a standard definition from a recognized engineering practice, such as NFPA 654, is too inclusive and does not narrow the scope of concern sufficiently for regulatory purposes. ACC will also submit supplemental technical comments to OSHA which will expand on this concept and include a proposed definition of combustible dust.

Number 191 involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 166 also involved chlorates. Again, because this incident involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Similarly, Incident Number 13 involved pyrotechnic dust; therefore, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 136 involved black powder. It is therefore highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 141 involved benzoyl peroxide. Benzoyl peroxide decomposes when exposed to heat. As such, it is highly likely that incident 141 was a reactive chemical incident rather than a combustible dust incident. Finally, Incident Number 77 involved chlorates. Because Incident Number 77 involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. In short, the data are not a reliable source of information.

In addition to finding that the data contained significant errors, ACC found that the data indicate that there have been 23 combustible dust fires or explosions in the chemical manufacturing industry in the last twenty-five years - less than one incident per year. Less than one incident per year does not equate to a significant risk of harm.

In conclusion, OSHA did not provide evidence in the ANPR proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant. Nor did OSHA provide a list of dusts that it intends to regulate or evidence that each of these dusts exposes employees to a significant risk of harm. OSHA therefore does not have the legal authority to apply a comprehensive combustible dust standard to the chemical manufacturing industry at the present time.

## **II. COMPLIANCE WITH EXISTING OSHA STANDARDS ELIMINATES THE LIKELIHOOD OF COMBUSTIBLE DUST FIRES OR EXPLOSIONS OCCURRING IN THE WORKPLACE.**

OSHA also contends that its existing standards do not address all of the elements needed for a combustible dust fire or explosion. In support of this contention, OSHA relies on 160 General Duty Clause citation items alleging violations of national consensus standards that were issued between November 1, 2007 and February 24, 2009 as a result of the Combustible Dust National Emphasis Program. OSHA also relies on the 2006 CSB Combustible Dust Study finding that many employers were not complying with national consensus standards. ACC respectfully disagrees.

In order for a combustible dust fire to occur in the workplace, three elements must exist: (1) Combustible dust (fuel); (2) Ignition source (heat); and (3) Oxygen (oxidizer). These three elements are also known as the “Fire Triangle.” In order for a combustible dust explosion to occur in the workplace, two additional elements must exist: (4) Dispersion of dust particles in sufficient quantity and concentration; and (5) Confinement of the dust cloud. These five elements are also known as the “Explosion Pentagon.”

There are several existing OSHA standards that address at least one of the elements of a Fire Triangle or Explosion Pentagon: (1) 29 C.F.R. § 1910.22 (Housekeeping); (2) 29 C.F.R. 1910.176 (Materials Handling); (3) 29 C.F.R. § 1910.178 (Powered Industrial Trucks); (4) 29 C.F.R. § 1910.252 (Welding, Cutting, and Brazing); and (5) 29 C.F.R. § 1910.307 (Classification of Hazardous Locations).

Compliance with these existing OSHA standards will eliminate at least one of the elements of a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace. In this regard, section 1910.22(a)(1) states that “[a]ll places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.” The federal Occupational Safety and Health Review Commission, the agency in charge of adjudicating workplace safety and health disputes between OSHA and private industry, has held that section 1910.22(a)(1) requires employers to conduct housekeeping for combustible dust in the workplace. *See, e.g., Cincinnati Gas & Electric Co.*, 21 BNA OSHC 1057 (No. 01-0711, 2005). The federal Courts of Appeal have also held that section 1910.22(a)(1) requires employers to conduct housekeeping for combustible dust in the workplace. *See, e.g., Con Agra, Inc. v. OSHRC*, 672 F.2d 699 (8<sup>th</sup> Cir. 1982); *Bunge Corp. v. Secretary of Labor*, 638 F.2d 831 (5<sup>th</sup> Cir. 1981). Conducting proper housekeeping will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

Section 1910.176(c) states that storage areas shall be kept free from accumulation of materials that constitute hazards from fire and explosion. Conducting proper housekeeping in storage areas will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

Section 1910.178 requires employers to use appropriate powered industrial trucks when combustible dust is present in the workplace. Using appropriate powered industrial trucks will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

Section 1910.252 requires employers to take certain precautions during welding, cutting, and brazing operations. Taking certain precautions during welding, cutting, and brazing operations will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

Section 1910.307(c) requires that equipment, wiring methods, and installations of equipment in combustible dust locations to be intrinsically safe, approved for the location, or safe for the location. Ensuring that equipment, wiring methods, and installations of equipment are intrinsically safe, approved for the location, or safe for the location will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

OSHA has acknowledged publicly on several occasions that compliance with existing OSHA standards will eliminate at least one of the elements of a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace, even in situations where employers do not comply with national consensus standards. For example, at a

news conference in Savannah Georgia after the completion of the inspection of the Imperial Sugar refinery, former OSHA Chief Edward G. Foulke, Jr., stated: “The investigation concluded that this catastrophic incident could have been prevented if Imperial Sugar had complied with existing OSHA safety and health standards.” *See, e.g.*, Shaila Dewan, *OSHA Seeks \$8.7 Million Fine Against Sugar Company*, N.Y. Times, July 26, 2008, at A1. OSHA issued two General Duty Clause citations to the Imperial Sugar refinery, alleging that the company failed to comply with applicable national consensus standards.

In conclusion, compliance with existing OSHA standards will eliminate at least one of the elements needed for a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace. In these circumstances, employees are not exposed to a significant risk of harm. Because employees are not exposed to a significant risk of harm, a comprehensive combustible dust standard is not “reasonably necessary or appropriate” under section 3(8) of the OSH Act.

### **III. OSHA SHOULD CONTINUE ITS VIGOROUS ENFORCEMENT OF EXISTING STANDARDS AND HEIGHTEN AWARENESS OF COMBUSTIBLE DUST HAZARDS IN THE WORKPLACE THROUGH TRAINING AND EDUCATION.**

ACC respectfully suggests that rather than expending its resources to promulgate and maintain a comprehensive combustible dust standard, OSHA should continue its vigorous enforcement of existing OSHA standards that address combustible dust hazards in the workplace. OSHA should also continue to heighten awareness of combustible dust hazards in the workplace through educational outreach and training. ACC is willing to offer its expertise and heighten awareness of combustible dust hazards in the workplace through a joint venture with OSHA. Through these efforts alone, OSHA will be able to achieve the ultimate goal - materially reducing the likelihood of combustible dust fires or explosions from occurring in the workplace.



*VIA ELECTRONIC MAIL*

December 3, 2010

Occupational Safety and Health Administration  
200 Constitution Avenue, NW  
Washington, DC 20210

Attention: Mr. Mat Chibbaro

**Re: RIN 1218–AC41**

Advance Notice of Proposed Rulemaking on Combustible Dust  
Supplemental Comments of the American Chemistry Council

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Dear Mr. Chibbaro:

The American Chemistry Council (ACC) appreciates the opportunity to provide supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust. We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments, our discussion with OSHA on technical issues associated with this rulemaking at our meeting with the Agency on May 11, 2010, and on our August 10, 2010 supplemental comments.

ACC continues to believe that compliance and enforcement of existing OSHA standards, such as the housekeeping standard, will prevent combustible dust explosions. In those circumstances, employees are not exposed to a significant hazard and because there is no exposure to a significant risk of harm, a combustible dust standard is not "reasonably necessary or appropriate" under Section 3(8) of the OSH Act. OSHA should also continue to heighten awareness of combustible dust hazards in the workplace through educational outreach and training.

Without waiving that position, ACC also continues to believe that, should OSHA issue a combustible dust standard, the standard must be based upon a significant risk analysis on an industry basis and on a dust-by-dust basis. These analyses have not been done. If they were done using existing data, there would be no basis for applying a combustible dust standard to the chemical industry.

Further without waiving the position that a combustible dust standard should not be issued at all, and certainly not covering the chemical industry, ACC also continues to believe that any combustible dust standard should focus on the explosibility characteristics of combustible dusts

and should be performance based. We hope OSHA will find the attached comments on this approach to be helpful in its contribution to the rulemaking process.

We look forward to continued dialogue with OSHA on the important combustible dust issues discussed herein. Please contact me if you have any questions about our comments. I can be reached by phone at (202) 294-6413 or by e-mail at [laurie\\_miller@americanchemistry.com](mailto:laurie_miller@americanchemistry.com).

Sincerely,

*Laurie A. Miller*  
Director  
Regulatory and Technical Affairs

Attachments

**December 3, 2010**  
**Supplemental Comments of the**  
**American Chemistry Council**  
**on the Occupational Safety and Health Administration's**  
**Advance Notice of Proposed Rulemaking on Combustible Dust**

The American Chemistry Council (ACC) appreciates the opportunity to provide supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust.<sup>1</sup> We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments, our discussion with OSHA on technical issues associated with this rulemaking at our meeting with the Agency on May 11, 2010, and on ACC's August 10, 2010 supplemental comments.<sup>2</sup>

ACC continues to believe that compliance and enforcement of existing OSHA standards, such as the housekeeping standard, will prevent combustible dust explosions. In those circumstances, employees are not exposed to a significant hazard, and because there is no exposure to a significant risk of harm, a combustible dust standard is not "reasonably necessary or appropriate" under Section 3(8) of the OSH Act. OSHA should also continue to heighten awareness of combustible dust hazards in the workplace through educational outreach and training.

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Further without waiving the position that a combustible dust standard should not be issued at all, and certainly not covering the chemical industry, ACC also continues to believe that any combustible dust standard should focus on the explosibility characteristics of combustible dusts and should be performance based. We hope OSHA will find the attached comments on this approach to be significant in its contribution to the rulemaking process.

ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care<sup>®</sup>, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$689 billion enterprise and a key element of the nation's economy. It is one of the

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<sup>1</sup> 74 Fed. Reg. 54335 (October 21, 2009).

<sup>2</sup> A copy of ACC's August 10, 2010 comments are attached in Appendix A.

nation's largest exporters, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.

ACC's member companies are committed to maintaining safe and healthy workplaces, and routinely exceed federal and state standards for workplace safety. They engage in a variety of voluntary health and safety initiatives, including OSHA Voluntary Protection Programs.

As a normal aspect of many ACC members' businesses, a number of their employees work in settings with the potential for exposure to combustible dust. As a result, our industry has made significant investments in implementing methods and practices to reduce worker exposure to the hazards associated with combustible dust. In addition, several of our member company representatives are leaders in both developing and advancing the science and technology around these materials. ACC member companies are also subject to regulation by OSHA health standards to manage such potential exposures to combustible dust hazards, and accordingly have a vital interest in this rulemaking.

## **I. COMPLIANCE WITH EXISTING OSHA STANDARDS ELIMINATES THE LIKELIHOOD OF COMBUSTIBLE DUST FIRES OR EXPLOSIONS OCCURRING IN THE WORKPLACE**

In order for a combustible dust fire to occur in the workplace, three elements must exist: (1) Combustible dust (fuel); (2) Ignition source (heat); and (3) Oxygen (oxidizer). These three elements are also known as the "Fire Triangle." In order for a combustible dust explosion to occur in the workplace, two additional elements must exist: (4) Dispersion of dust particles in sufficient quantity and concentration; and (5) Confinement of the dust cloud. These five elements are also known as the "Explosion Pentagon."

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1910.22(a)(1) requires employers to conduct housekeeping for combustible dust in the workplace. *See, e.g., Con Agra, Inc. v. OSHRC*, 672 F.2d 699 (8th Cir. 1982); *Bunge Corp. v. Secretary of Labor*, 638 F.2d 831 (5th Cir. 1981). Proper housekeeping will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

Section 1910.176(c) states that storage areas shall be kept free from accumulation of materials that constitute hazards from fire and explosion. Proper housekeeping in storage areas will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

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OSHA has acknowledged publicly on several occasions that compliance with existing OSHA standards will eliminate at least one of the elements of a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace, even in situations where employers do not comply with national consensus standards. For example, at a news conference in Savannah Georgia after the completion of the inspection of the Imperial Sugar refinery, former OSHA Chief Edward G. Foulke, Jr., stated: “The investigation concluded that this catastrophic incident could have been prevented if Imperial Sugar had complied with existing OSHA safety and health standards.” *See, e.g., Shaila Dewan, OSHA Seeks \$8.7 Million Fine Against Sugar Company*, N.Y. Times, July 26, 2008, at a1. OSHA issued two General Duty Clause citations to the Imperial Sugar refinery, alleging that the company failed to comply with applicable national consensus standards.

Therefore, compliance with existing OSHA standards will eliminate at least one of the elements needed for a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace. In these circumstances, employees are not exposed to a significant risk of harm. Because employees are not exposed to a significant risk of harm, a comprehensive combustible dust standard is not “reasonably necessary or appropriate” under section 3(8) of the OSH Act.

## **II. OSHA DID NOT PROVIDE EVIDENCE PROVING THAT THE CHEMICAL MANUFACTURING INDUSTRY IS EXPOSED TO A SIGNIFICANT RISK OF COMBUSTIBLE DUST FIRES AND EXPLOSIONS OCCURRING IN THE WORKPLACE.**

OSHA has stated in its ANPR stakeholder meetings and in ACC's meeting with the agency that the agency is not relying on Table 1 of the ANPR to define the scope of a potential rule. This table attempts to summarize data gathered from the 2006 Chemical Safety Board (CSB) Combustible Dust Study,<sup>3</sup> which contains data from a variety of sources for 1980 through 2005, as well as compiled 2006 and 2007 data from the Combustible Dust Policy Institute.<sup>4</sup> Since the data in this table is the only information that ACC is aware of that could be used for the purpose of rulemaking, we analyzed the data assigned to the chemical industry therein. ACC believes it is incumbent on OSHA to identify specific data on which this rulemaking is based.

Our assumption for this analysis was that the data on which Table 1 in the ANPR is based were in general valid, even though we found a number of significant errors and neither CSB nor OSHA has indicated that the data have been validated.<sup>5</sup> The errors ACC identified are enumerated and detailed in our August 10, 2010 supplemental comments (Appendix A, Section I). In summary, certain chemicals that were attributed to combustible dust explosions were unlikely to be involved in such explosions. We also identified data errors in this analysis, which are discussed below.

Additionally we performed an analysis to get some measure of potential risk posed by the chemical industry and of what conditions appear to present the most hazards. Our conclusion is that the data are insufficient for proving that employees in the chemical manufacturing industry are exposed to a significant risk of harm.

In our analysis, we identified 67 incidents out of the 218<sup>6</sup> that had a description of any kind in OSHA's data, and matched them for manufacturing related events, to the extent allowed by the quality of the data, against NAICS (North American Industry Classification System) codes in the CSB table. Some of the incidents described vs. the NAICS codes were difficult to reconcile (Incident Numbers 13, 77, 136, 141, 166 and 191); others did not appear to be dust explosions. Again, however, for this analysis our assumption was that these are the only available data that can be used as the basis for rulemaking. Our analysis of these 67 incidents is shown in Table A.

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<sup>3</sup> U.S. Chemical Safety and Hazard Investigation Board Investigation Report No. 2006-H-1, *Combustible Dust Hazard Study*; November 2006.

<sup>4</sup> See: <http://dustexplosions.blogspot.com/2008/04/map-combustible-dust-explosions-2007.html>.

<sup>5</sup> See: "Combustible Dust Incidents" at <http://regulations.gov>; OSHA Docket ID 2009-0023-0144.

<sup>6</sup> The OSHA-provided data lists a grand total of 423 incidents. However, many have either no description or the notation "Information not cleared for public release".

**Table A:** Analysis of Incident Data for Chemical Manufacturing Industry - NAICS Codes 325000 – 326000 (exceptions as noted above) in OSHA Data

Number of incidents over 30 year period:	<b>67</b>
Total number injuries:	<b>135</b>
Total number of fatalities:	<b>28</b>
Number of establishments:	<b>20,973</b>
Number of employees:	<b>1,651,195</b>

OSHA uses the concept of frequency to measure personnel injury rates based on the number of hours worked; however, to our knowledge the agency has not established a level below which an industry is considered to be operating at an acceptable level of likelihood of preventing such injuries. We believe that OSHA would need to specify such an acceptability threshold to determine whether there is a basis for a combustible dust standard for any particular industry. Likewise, a regulated industry would need to know this level in order to complete risk assessments for any performance based rule that might be issued to determine what safeguards must be in place to mitigate potential hazards and demonstrate compliance.

Using OSHA’s data, we calculated the likelihood of chemical industry employees not being located at a facility that will experience a combustible dust fire within a 30-year period, and the likelihood that a chemical industry employee will not be injured within a 30-year period. Because of the lack of certain data, some significant assumptions were made. ACC’s calculations may provide a sense of the risk posed by the chemical industry to its employees. The results of this analysis are presented in Table B.

**Table B:** Frequency Calculations for Chemical Manufacturing Industry - NAICS codes 325000 – 326000 (exceptions as noted above) in OSHA’s Data

Likelihood of <b>not</b> being located at a facility that will experience a combustible dust fire or explosion in a 30 year period, assuming the rate of incidents and industry parameters remain relatively consistent:	$(1-67/20,973 \times 100) = 99.7\%$ <b>100</b>
Likelihood that an employee will <b>not</b> be injured in a 30 year period due to a combustible dust fire or explosion:	$(1-163/1,651,195) \times 100 = 99.99\%$ <b>100</b>
Assuming that 10% of the manufacturing personnel are involved in handling or processing combustible dusts and the injuries estimated from the CSB data occurred in a linear fashion over the last 30 years, a frequency of injury rate was also estimated:	
163 injuries/30 years =	<b>6 injuries/year</b>
<ul style="list-style-type: none"> <li>• 1,651,195 employees x 10% x 2000 hours worked/year = 330,239,000 hours worked/year by employees</li> <li>• 6 injuries per year/330,239,000 hours worked per year =</li> </ul>	<b><math>2 \times 10^{-8}</math></b>

Exploring the data further, we found that some of the combustible dust incidents within the 67 identified were **not** dust explosions, and that compliance with existing OSHA rules on electrical classification, housekeeping and hot work could have reduced the injury rate. For example, compliance with electrical classification and housekeeping could have reduced the number of injuries from 135 to 73, a 46% reduction (Incident numbers 262, 9, 23, and 34 in the data table).

Based on the data analysis presented above, it is clear that the chemical industry does not expose its employees to significant risk from combustible dust hazards. However, OSHA must make this demonstration using valid data that is made available to the public.

Unless OSHA demonstrates that the chemical industry poses significant risk of harm to its employees from combustible dusts using valid public data, there is no basis for rulemaking, as discussed in depth in our August 10, 2010 supplemental comments in Appendix A. Our data analysis also strongly supports our position, stated in those previous comments that industry compliance with, and OSHA enforcement of, existing agency standards for housekeeping and ignition sources would help achieve significant reduction in risk from combustible dust hazards. This conclusion is also supported by the latest information from OSHA regarding the agency's Combustible Dust National Emphasis Program, in which housekeeping was the most-cited violation under the program, according to OSHA Assistant Secretary, Dr. David Michaels.<sup>7</sup>

### **III. A POTENTIAL COMBUSTIBLE DUST STANDARD SHOULD FOCUS ON EXPLOSIBILITY CHARACTERISTICS OF COMBUSTIBLE DUSTS.**

An additional finding in our analysis of OSHA's data was that the key elements causing catastrophic combustible dust incidents were those that involved major secondary explosions. Although ACC does not have a high level of confidence in OSHA's data alone, we believe that this conclusion is justified based on information in the literature and in National Fire Protection Association (NFPA) consensus standards that address mitigation of combustible dust hazards. OSHA's web site on combustible dust entitled, "Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions" provides a number of these references.<sup>8</sup> ACC believes that if OSHA finds that one or more industries poses a significant risk from combustible dust hazards, the agency should focus a proposed rule on prevention of secondary combustible dust explosions, specifically on the explosibility characteristics that contribute most to flash fires.

ACC believes that a focus on characteristics that cause small localized fires or short-duration flash fires is neither necessary nor appropriate, since such incidents can be mitigated with adequate use of appropriate personal protective equipment or other localized means that provide adequate protection. For this reason, use of a standard definition of combustible dust from a recognized engineering practice, such as NFPA 654, would be overly inclusive and therefore would not narrow the scope of concern sufficiently for regulatory purposes. It is highly likely that an actual fire would be mitigated before it could cause a combustible dust incident. In contrast, it is more difficult to mitigate a flash fire, particularly when the combustible dust involved has a high overpressure potential.

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<sup>7</sup> From: *Emphasis Program Reveals 9,100 Violations. Mainly of Housekeeping Regs, Michaels Says*. Bureau of National Affairs OSHA Reporter 40 911, November 4, 2010.

<sup>8</sup> See: <http://www.osha.gov/dts/shib/shib073105.html>.

**IV. ANY PROPOSED A RULE SHOULD FOLLOW A REGULATORY APPROACH THAT IS PERFORMANCE BASED AND FOCUSED ON PREVENTION OF CONDITIONS THAT POSE SIGNIFICANT RISKS.**

ACC believes that should OSHA be able to demonstrate that an industry poses a significant risk of harm to its employees from combustible dust hazards, the agency should propose a performance based standard that maximizes risk reduction while providing a practical framework for compliance. Such a standard should include:

- i. A scope and application section that provides a regulatory definition of combustible dust, defines an action threshold (e.g. a threshold quantity, minimum quantity of “releasable” dust or a scalable threshold based on energy potential), lists applicable OSHA regulations and provides non-mandatory annexes.
- ii. A requirements section which provides non-prescriptive guidance that refers to non-mandatory annexes.

ACC does not support adoption of one or more NFPA standards as an OSHA standard. It is important to note that NFPA states in all of its standards pertaining to combustible dusts that the standards are “not intended to prevent the use of systems, methods or devices of equivalent superior quality, strength, fire resistance, effectiveness, durability and safety over those prescribed [by their standards].”<sup>9</sup> ACC believes that although these NFPA standards encourage critical thinking about specific chemical facility hazards, following any consensus standard strictly could lead to overlooking certain hazards. Put another way, prescribed mitigations provide one way to reduce risk, but not the only way. As such, the performance-based sections of relevant NFPA documents provide a more appropriate basis for a standard.

As discussed below, however, we believe there is value in OSHA incorporating certain elements of NFPA 654: Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids into any performance based rulemaking. Many other NFPA, American Society of Mechanical Engineers and International Society of Automation standards are referenced in NFPA 654, and thus it incorporates a breadth of information on combustible dusts with which the regulated community should be familiar. We also believe that NFPA standards should be included in the non-mandatory annexes indicated above.

The following sections provide our rationale for this rule framework.

**A. Sections on Definition, and Scope and Application:**

In the Scope and Application section of any proposed rule, ACC believes it would be beneficial to include a generic definition of a combustible dust that focuses on dust characteristics that pose significant risks under non-laboratory industrial and manufacturing conditions.

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<sup>9</sup>For example, NFPA 61: Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities, P. 4.

## i. Rationale for Definition of Combustible Dusts:

ACC believes that OSHA should use a generic definition of a combustible dust. This definition should make use of the existing definition in NFPA 654 as a starting point; however, the final OSHA definition should include a 420-500 micron size designation in the definition. We are basing inclusion of this size criterion on information in the Center for Chemical Process Safety concept book, *Avoiding Static Ignition Hazards in Chemical Operation*.<sup>10</sup>

Such a generic definition would facilitate limiting the scope of a proposed rule to focus only on conditions that can result in significant risk and cover the breath of definitions existing in current consensus standards and the literature. Thus, based on those various sources, we propose to define a combustible dust as follows:

**Combustible Dust That Poses Significant Risk:** A combustible particulate that presents a significant risk of explosion when suspended in air or some other oxidizing medium over a range of concentrations regardless of particle shape and meets all four of the criteria listed below:

- a. Has more than 10 weight% particles less than or equal to 75 microns (passing through a 200 mesh screen) that can be isolated in any piece of process equipment.
- b. Has a Minimum Ignition Energy for the fraction less than 75 microns of less than or equal to 1 Joule, as determined by American Society for Testing and Materials (ASTM) E2019.
- c. Has an explosibility index,  $K_{St}$ , for the fraction less than 75 microns of greater than or equal to 100 bar-m/sec, as determined by ASTM E1226.
- d. Has a maximum unvented explosion pressure,  $P_{max}$ , for the fraction less than 75 microns of greater than or equal to 4 bar, as determined by ASTM E1226.

## ii. Scope and Applicability

The scope and applicability of a proposed rule should address combustible dusts that present an explosion hazard under "plausible" worst case conditions. This section should further refine/restrict the scope of the rule. In this case the goal should be to address parameters associated with the concept of explosion hazard:

- a. **Threshold Limit:** It is not practical to cover all possible explosion hazard scenarios irrespective of the size of equipment or the amount of material potentially involved. Therefore, there should be a threshold limit. For example, a limit could be placed on the volume of individual pieces of equipment covered under the rule (e.g.  $>1m^3$ ).
- b. **Process Equipment:** Because the prevention of catastrophic explosions is already addressed with existing standards (housekeeping, electrical classification, etc.) the scope should be limited to the explosion occurring in process equipment that creates dusts.

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<sup>10</sup>Britton, Laurence G. (1999). *Avoiding Static Ignition Hazards in Chemical Operations (Revised Edition)*. Center for Chemical Process Safety/AIChE. P. 160.

- c. **Scope Statement:** The statement of scope of the rule could read as follows: “This standard shall apply to all phases of manufacturing, processing, blending, pneumatic conveying, repackaging, and handling of combustible dust that presents a significant risk of explosion.”
- d. **Ignition Sensitivity of Dusts:** Because the energy levels of “plausible” ignition sources within the equipment are restricted by the equipment specification (volume, mechanical forces, etc.), a limit based dust ignition sensitivity such as minimum ignition energy (MIE) is warranted and should be based on the history of industrial incidents.

ACC has considered a number of ignition levels; however, based on practical experience and the fact that there is an existing applicable ASTM E2019 standard which addresses this issue directly, we recommend the 1 J energy level. This level is significantly above the MIE of the vast majority of combustible dusts handled in the processing industries

**B. Performance Based Elements**

ACC believes that the most effective framework for a potential rule should be similar to OSHA’s Process Safety Management (PSM) regulation (29 CFR 1910.119), but tailored specifically and exclusively to combustible dust hazards. However, employers that already have a comparable performance based program in place should not be required to modify it. Our proposed rule framework is as follows:

<b>I. Hazard Analysis</b>
A. <u>Identify the applicable process systems and equipment</u> that are handling combustible dusts
B. <u>Qualitative Risk analysis</u> – use recognized qualitative methods to identify potential dust explosion risk in applicable systems/equipment considering:
a. Likelihood of a combustible mixture being formed in the equipment
b. Minimum Ignition Energy of the possible combustible mixture
c. Likelihood of a <i>sufficiently energetic</i> ignition source being present at the same time as the combustible mixture is present
d. Location of the equipment in relation to potentially affected workers, and/or occupied structures, and the resultant risk of serious injury
C. <u>Identify Layers of Protection</u> - any existing prevention and/or mitigation systems such as venting, suppression, isolation, damage-limiting construction, etc.
D. <u>Document analysis</u>
E. <u>Mitigate risk</u> - <i>where deemed to be necessary</i> using recognized and generally accepted good engineering practices
<b>II. Communication</b>

<b>III. Management of Change</b>
<b>IV. Maintain Mechanical Integrity</b>
<b>Non Mandatory Annexes</b>
<ul style="list-style-type: none"> <li>• Non-prescriptive guidance and references pertaining to engineering controls to reduce the risk of secondary explosions.</li> </ul>
<ul style="list-style-type: none"> <li>• Testing options - Present them in a hierarchical order: <ul style="list-style-type: none"> <li>○ Conservative opt-out – Could use a combustible dust classification concept similar to what is used in the UK.</li> <li>○ List more sophisticated tests in order, which will refine applicability determination and risk management plan development.</li> </ul> </li> </ul>



VIA ELECTRONIC MAIL



August 10, 2010

Occupational Safety and Health Administration  
200 Constitution Avenue, NW  
Washington, DC 20210

Attention: Mr. Mat Chibbaro

**Re: RIN 1218-AC41**

Advance Notice of Proposed Rulemaking on Combustible Dust  
Supplemental Comments of the American Chemistry Council

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Dear Mr. Chibbaro:

The American Chemistry Council (ACC) is pleased to submit supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust. We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments to fulfill certain statutory obligations for this rulemaking. The comments also expand upon ACC's discussion with OSHA on this issue at its meeting with the Agency May 11, 2010.

Specifically, OSHA is required to perform a significant risk analysis on an industry basis as well as demonstrate that each dust the agency intends to regulate exposes employees to a significant risk of harm. By completing these required steps in the rulemaking process, ACC believes that OSHA will be able to more efficiently focus its resources on the workplaces that pose the most potential risk from combustible dust hazards. We also believe that industry compliance with, and agency enforcement of existing OSHA standards to manage this risk, combined with a robust agency educational outreach and training program would achieve the risk reduction that OSHA seeks.

ACC appreciates the opportunity to provide supplemental comments on this ANPR. We look forward to continued dialogue with OSHA on the important combustible dust issues discussed therein. Please contact me if you have any questions or concerns about our comments. I can be reached by phone at (703) 741-5247 or by e-mail at [laurie\\_miller@americanchemistry.com](mailto:laurie_miller@americanchemistry.com).

Sincerely,

Laurie A. Miller  
Director  
Regulatory and Technical Affairs

Attachment

**August 10, 2010**  
**Supplemental Comments of the**  
**American Chemistry Council**  
**on the Occupational Safety and Health Administration's**  
**Advance Notice of Proposed Rulemaking on Combustible Dust**

The American Chemistry Council (ACC) is pleased to submit supplemental comments on the Occupational Safety and Health Administration's (OSHA) Advance Notice of Proposed Rulemaking (ANPR) on Combustible Dust.<sup>11</sup> We continue to share OSHA's concerns about the hazards associated with combustible dusts. These comments expand upon our recommendation to OSHA in our January 19, 2010 comments to fulfill certain statutory obligations for this rulemaking. The comments also expand upon ACC's discussion with OSHA on this issue at its meeting with the Agency May 11, 2010.

Specifically, ACC recommends that OSHA perform a significant risk analysis on an industry basis as well as demonstrate that each dust the Agency intends to regulate exposes employees to a significant risk of harm. By completing these required steps in the rulemaking process, ACC believes that OSHA will be able to more efficiently focus its resources on the workplaces that pose the most potential risk from combustible dust hazards. We also believe that industry compliance with, and agency enforcement of existing OSHA standards to manage this risk, combined with a robust agency educational outreach and training program would achieve the risk reduction that OSHA seeks.

ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care<sup>®</sup>, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$689 billion enterprise and a key element of the nation's economy. It is one of the nation's largest exporters, accounting for ten cents out of every dollar in U.S. exports. Chemistry companies are among the largest investors in research and development. Safety and security have always been primary concerns of ACC members, and they have intensified their efforts, working closely with government agencies to improve security and to defend against any threat to the nation's critical infrastructure.

ACC's member companies are committed to maintaining safe and healthy workplaces, and routinely exceed federal and state standards for workplace safety. They engage in a variety of voluntary health and safety initiatives, including OSHA Voluntary Protection Programs.

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<sup>11</sup> 74 Fed. Reg. 54335 (October 21, 2009).

As a normal aspect of many ACC members' businesses, a number of their employees work in settings with the potential for exposure to combustible dust. As a result, our industry has invested many years in implementing methods and practices to reduce worker exposure to the hazards associated with combustible dust. In addition, several of our member company representatives are leaders in both developing and advancing the science and technology around combustible dusts. ACC member companies are also subject to regulation by OSHA health standards to manage such potential exposures to combustible dust hazards, and accordingly have a vital interest in this rulemaking.

**I. OSHA DID NOT PROVIDE EVIDENCE PROVING THAT THE CHEMICAL MANUFACTURING INDUSTRY IS EXPOSED TO A SIGNIFICANT RISK OF COMBUSTIBLE DUST FIRES AND EXPLOSION OCCURRING IN THE WORKPLACE.**

In the Advance Notice of Proposed Rulemaking for Combustible Dust ("ANPR"), OSHA states that it is going to develop a comprehensive standard that will address combustible dust hazards in the workplace. 74 FR 54334, 54335 (October 21, 2009). OSHA contends that a comprehensive combustible dust standard is warranted because the "information currently available indicates that the risk of combustible dust [incidents] is considerable." *Id.* at 54341. In support of this contention, OSHA relies, in part, on the catastrophic nature of combustible dust fires and explosions to prove that employees are exposed to a significant risk of harm. *Id.* at 54337-54338. OSHA also relies on Table 1 of the ANPR to prove that certain industries are exposed to a significant risk of harm. *Id.* The American Chemistry Council ("ACC") respectfully disagrees.

ACC is keenly aware of the catastrophic nature of combustible dust fires and explosions. Indeed, combustible dust fires and explosions have caused the loss of life and enormous property damage over the last thirty years. For example, a combustible dust explosion at the Imperial Sugar refinery in Port Wentworth, Georgia killed 14 employees and seriously injured 36 others in March of 2008. The property damage as a result of the combustible dust explosion was in the millions.

The mere fact that combustible dust fires and explosions can be catastrophic does not necessarily mean, however, that all industries with combustible dust in the workplace expose their employees to a significant risk of harm. Indeed, section 3(8) of the Occupational Safety and Health Act of 1970, 29 U.S.C. § 652 ("OSH Act") defines an "occupational safety and health standard" as one that is "reasonably necessary or appropriate to provide safe or healthful employment." In *Industrial Union Department, AFL-CIO v. Marshall (Benzene)*, 448 U.S. 607 (1980), the Supreme Court interpreted the meaning of section 3(8) of the OSH Act and concluded that in order to promulgate an occupational safety or health standard as defined in section 3(8) of the OSH Act, OSHA has the burden of proving that employees are exposed to a significant risk of harm. *Id.* at 642. The Supreme Court reasoned that section 3(8) of the OSH Act "was not designed to require employers to provide absolutely risk-free workplaces" *Id.* at 651. The Supreme Court explained that requiring employers to provide absolutely risk-free

workplaces “would give OSHA power to impose enormous costs that might produce little, if any, discernible benefit.” *Id.* at 645.<sup>12</sup>

OSHA recognizes that the Agency has the burden of proving that employees are exposed to a significant risk of harm. Indeed, in response to a remand from the District of Columbia Court of Appeals regarding the validity of the Lockout/Tagout standard, 29 C.F.R. § 1910.147, OSHA promulgated a Supplemental Statement of Reasons regarding its rulemaking authority for safety standards. 58 FR 16612 (March 30, 1993). In the Supplemental Statement of Reasons, OSHA stated that in order to promulgate a safety standard, the Agency has the burden of proving: (1) The proposed standard substantially reduces a significant risk of material harm; (2) Compliance with the proposed standard is technologically feasible; (3) Compliance with the proposed standard is economically feasible; (4) The proposed standard employs the most cost-effective means of achieving its protective goal; (5) If the proposed standard deviates from an existing national consensus standard, the proposed standard better effectuates the OSH Act’s protective purpose than the national consensus standard; and (6) The proposed standard is supported by the evidence in the rulemaking record and either is consistent with prior Agency practice or is supported by a justification for departing from that practice.

Courts have also held that OSHA has the burden of proving significant risk of harm in each industry the Agency is intending to regulate. *See Texas Independent Ginners v. Marshall*, 630 F.2d 398 (5th Cir. 1980). In *Texas Independent Ginners*, the Fifth Circuit Court of Appeals struck down the Cotton Dust standard as applied to the cotton gin industry. *Id.* at 413. In striking down the Cotton Dust standard as applied to the cotton gin industry, the Fifth Circuit Court of Appeals determined that OSHA failed to prove that the cotton gin industry exposed its employees to a significant risk of harm. The Fifth Circuit Court of Appeals explained that OSHA could not rely on evidence that the textile industry was exposed to significant risk of harm to prove that the cotton gin industry was exposed to a significant risk of harm. *Id.* at 408-409.<sup>13</sup>

Additionally, courts have held that OSHA has the burden of proving that a significant risk of harm exists for each hazard the Agency is intending to regulate. *See AFL-CIO v. OSHA*, 965 F.2<sup>nd</sup> 962 (11<sup>th</sup> Cir. 1992). In *AFL-CIO v. OSHA*, the Court of Appeals vacated the Air Contaminants standard. *Id.* at 972. The Air Contaminants standard attempted to establish permissible exposure levels for 428 chemical substances. *Id.* at 962. In vacating the Air Contaminants standard, the Court of Appeals determined that OSHA had the burden of proving that each chemical substance the Agency intended to regulate exposed employees to a significant risk of harm. *Id.* at 986. The Court of Appeals explained that OSHA simply grouped the 428 chemical substances together for the purposes of proving significant risk of harm. *Id.*

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<sup>12</sup> *See also American Textile Manufacturers Institute v. Donovan*, 452 US 490 (1981).

<sup>13</sup> It is worth noting that OSHA often excludes particular industries from complying with occupational safety and health standards. For example, OSHA excluded the construction, agriculture, and maritime industries from complying with the Lockout/Tagout standard, 29 C.F.R. § 1910.147. OSHA also excluded the portland cement industries from complying with the Chromium standard, 29 C.F.R. § 1910.1026.

In the present case, OSHA intends to regulate many different types of dust in a comprehensive combustible dust standard. Like the 428 chemical substances in the Air Contaminants standard, OSHA has the burden of proving that each dust the Agency intends to regulate exposes employees to a significant risk of harm. That is, OSHA must have substantial evidence proving that the likelihood of the individual dust causing a fire or explosion in the workplace is significant. This would include, for example, determining the particle size, quantity, and the amount of energy needed to create a fire or explosion that generates damaging overpressure or potential harm outside the immediate vicinity of the event, for each unique chemical composition.<sup>14</sup>

According to this well-established federal case law, OSHA has the burden of proving that the chemical manufacturing industry is exposed to a significant risk of harm in order to apply a comprehensive combustible dust standard to that industry. That is, OSHA must have substantial evidence proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant.

Indeed, the mere fact that an individual dust is combustible does not, by itself, mean that employees are exposed to a significant risk of harm. Certain extrinsic, situation-specific conditions must exist in order for dust to cause or contribute to a major fire or explosion with significant overpressure. Those conditions vary widely depending on the chemical composition and physical form of individual dusts. For example, the conditions needed to create wood dust fires or explosions are vastly different than the conditions needed to create metal dust fires or explosions. OSHA has not set forth this type of evidence in the ANPR. ACC recognizes that this will be a daunting task for OSHA, as experts in the field have correctly noted: “Part of the problem with regulating dust explosions is the confusion about which dusts can explode and under what conditions. Even how much dust is a hazard is still unknown.” Amy Beasley Spencer, *Dust: When a Nuisance Becomes Deadly*, NFPA JOURNAL, Nov.-Dec. 2008, at 56, 58.

While OSHA has stated in its ANPR stakeholder meetings and in ACC’s meeting with the agency that it is not relying on Table 1 of the ANPR to define the scope of a potential rule, the data in this table is the only information that ACC is aware of that could be used for this purpose. We therefore analyzed the data assigned to the chemical industry therein, taking it at face value, and found that it is insufficient for proving that the chemical manufacturing industry is exposed to a significant risk of harm.

In this regard, in Table 1 of the ANPR, OSHA attempts to summarize data gathered from the 2006 Chemical Safety Board (“CSB”) Combustible Dust Study. The 2006 CSB Combustible Dust Study contains data from 1980 through 2005. ACC’s examination of the data revealed that the data contains significant errors. For example, Incident Number 191 involved potassium

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<sup>14</sup> ACC believes that small localized fires or short-duration flash fires where adequate use of appropriate personal protective equipment or other localized means that provide adequate protection would be excluded. For this reason, use of a standard definition from a recognized engineering practice, such as NFPA 654, is too inclusive and does not narrow the scope of concern sufficiently for regulatory purposes. ACC will also submit supplemental technical comments to OSHA which will expand on this concept and include a proposed definition of combustible dust.

chlorate and perchlorate. Chlorates are strong oxidizers, not combustible dust. Because Incident Number 191 involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 166 also involved chlorates. Again, because this incident involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Similarly, Incident Number 13 involved pyrotechnic dust; therefore, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 136 involved black powder. It is therefore highly likely that there was a reactive chemical incident rather than a combustible dust incident. Incident Number 141 involved benzoyl peroxide. Benzoyl peroxide decomposes when exposed to heat. As such, it is highly likely that incident 141 was a reactive chemical incident rather than a combustible dust incident. Finally, Incident Number 77 involved chlorates. Because Incident Number 77 involved chlorates, it is highly likely that there was a reactive chemical incident rather than a combustible dust incident. In short, the data are not a reliable source of information.

In addition to finding that the data contained significant errors, ACC found that the data indicate that there have been 23 combustible dust fires or explosions in the chemical manufacturing industry in the last twenty-five years - less than one incident per year. Less than one incident per year does not equate to a significant risk of harm.

In conclusion, OSHA did not provide evidence in the ANPR proving that the likelihood of a combustible dust fire or explosion occurring in the chemical manufacturing industry is significant. Nor did OSHA provide a list of dusts that it intends to regulate or evidence that each of these dusts exposes employees to a significant risk of harm. OSHA therefore does not have the legal authority to apply a comprehensive combustible dust standard to the chemical manufacturing industry at the present time.

## **II. COMPLIANCE WITH EXISTING OSHA STANDARDS ELIMINATES THE LIKELIHOOD OF COMBUSTIBLE DUST FIRES OR EXPLOSIONS OCCURRING IN THE WORKPLACE.**

OSHA also contends that its existing standards do not address all of the elements needed for a combustible dust fire or explosion. In support of this contention, OSHA relies on 160 General Duty Clause citation items alleging violations of national consensus standards that were issued between November 1, 2007 and February 24, 2009 as a result of the Combustible Dust National Emphasis Program. OSHA also relies on the 2006 CSB Combustible Dust Study finding that many employers were not complying with national consensus standards. ACC respectfully disagrees.

In order for a combustible dust fire to occur in the workplace, three elements must exist: (1) Combustible dust (fuel); (2) Ignition source (heat); and (3) Oxygen (oxidizer). These three elements are also known as the “Fire Triangle.” In order for a combustible dust explosion to occur in the workplace, two additional elements must exist: (4) Dispersion of dust particles in sufficient quantity and concentration; and (5) Confinement of the dust cloud. These five elements are also known as the “Explosion Pentagon.”

There are several existing OSHA standards that address at least one of the elements of a Fire Triangle or Explosion Pentagon: (1) 29 C.F.R. § 1910.22 (Housekeeping); (2) 29 C.F.R. 1910.176 (Materials Handling); (3) 29 C.F.R. § 1910.178 (Powered Industrial Trucks); (4) 29 C.F.R. § 1910.252 (Welding, Cutting, and Brazing); and (5) 29 C.F.R. § 1910.307 (Classification of Hazardous Locations).

Compliance with these existing OSHA standards will eliminate at least one of the elements of a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace. In this regard, section 1910.22(a)(1) states that “[a]ll places of employment, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.” The federal Occupational Safety and Health Review Commission, the agency in charge of adjudicating workplace safety and health disputes between OSHA and private industry, has held that section 1910.22(a)(1) requires employers to conduct housekeeping for combustible dust in the workplace. *See, e.g., Cincinnati Gas & Electric Co.*, 21 BNA OSHC 1057 (No. 01-0711, 2005). The federal Courts of Appeal have also held that section 1910.22(a)(1) requires employers to conduct housekeeping for combustible dust in the workplace. *See, e.g., Con Agra, Inc. v. OSHRC*, 672 F.2d 699 (8<sup>th</sup> Cir. 1982); *Bunge Corp. v. Secretary of Labor*, 638 F.2d 831 (5<sup>th</sup> Cir. 1981). Conducting proper housekeeping will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

Section 1910.176(c) states that storage areas shall be kept free from accumulation of materials that constitute hazards from fire and explosion. Conducting proper housekeeping in storage areas will eliminate the fuel source and therefore the first element needed for a combustible dust fire or explosion.

Section 1910.178 requires employers to use appropriate powered industrial trucks when combustible dust is present in the workplace. Using appropriate powered industrial trucks will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

Section 1910.252 requires employers to take certain precautions during welding, cutting, and brazing operations. Taking certain precautions during welding, cutting, and brazing operations will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

Section 1910.307(c) requires that equipment, wiring methods, and installations of equipment in combustible dust locations to be intrinsically safe, approved for the location, or safe for the location. Ensuring that equipment, wiring methods, and installations of equipment are intrinsically safe, approved for the location, or safe for the location will eliminate an ignition source and therefore the second element needed for a combustible dust fire or explosion.

OSHA has acknowledged publicly on several occasions that compliance with existing OSHA standards will eliminate at least one of the elements of a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace, even in situations where employers do not comply with national consensus standards. For example, at a

news conference in Savannah Georgia after the completion of the inspection of the Imperial Sugar refinery, former OSHA Chief Edward G. Foulke, Jr., stated: “The investigation concluded that this catastrophic incident could have been prevented if Imperial Sugar had complied with existing OSHA safety and health standards.” *See, e.g.,* Shaila Dewan, *OSHA Seeks \$8.7 Million Fine Against Sugar Company*, N.Y. Times, July 26, 2008, at A1. OSHA issued two General Duty Clause citations to the Imperial Sugar refinery, alleging that the company failed to comply with applicable national consensus standards.

In conclusion, compliance with existing OSHA standards will eliminate at least one of the elements needed for a Fire Triangle or Explosion Pentagon and therefore prevent combustible dust fires and explosions from occurring in the workplace. In these circumstances, employees are not exposed to a significant risk of harm. Because employees are not exposed to a significant risk of harm, a comprehensive combustible dust standard is not “reasonably necessary or appropriate” under section 3(8) of the OSH Act.

### **III. OSHA SHOULD CONTINUE ITS VIGOROUS ENFORCEMENT OF EXISTING STANDARDS AND HEIGHTEN AWARENESS OF COMBUSTIBLE DUST HAZARDS IN THE WORKPLACE THROUGH TRAINING AND EDUCATION.**

ACC respectfully suggests that rather than expending its resources to promulgate and maintain a comprehensive combustible dust standard, OSHA should continue its vigorous enforcement of existing OSHA standards that address combustible dust hazards in the workplace. OSHA should also continue to heighten awareness of combustible dust hazards in the workplace through educational outreach and training. ACC is willing to offer its expertise and heighten awareness of combustible dust hazards in the workplace through a joint venture with OSHA. Through these efforts alone, OSHA will be able to achieve the ultimate goal - materially reducing the likelihood of combustible dust fires or explosions from occurring in the workplace.