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OSHA Docket Office
Technical Data Center
Room N-2625
U.S. Department of Labor
200 Constitution Ave., NW.
Washington, DC 20210

Re: Request for Comments on Advance Notice of Proposed Rulemaking on Issues Related to the Hazards of Combustible Dust in the Workplace

To Whom It May Concern:

Printing Industries of America appreciates the opportunity to review and comment on the Advance Notice of Proposed Rulemaking on Issues Related to the Hazards of Combustible Dust in the Workplace that was published in the October 21, 2009 Federal Register.

As background, Printing Industries of America is the world's largest graphic arts trade association representing the printing industry with nearly 12,000 member companies. Over eighty percent of these 12,000 companies are directly involved in commercial printing. The remaining twenty percent complement and provide a variety of services to those directly engaged in printing (e.g., prepress, bindery, fulfillment, and equipment manufacturers). In addition, the majority of the commercial printer member companies are small businesses employing less than 20 employees.

After reviewing the focus and scope of the proposed rule we find such a standard will seemingly add a redundant level of regulatory, administrative and financial burden on many printing businesses with little or no affect to safety for the industry with regard to combustible dust issues.

It is important to understand that the Printing Industries of America supports the promotion of safety and compliance where applicable. It is critical for employers to maintain diligence with regard to safety and health issues faced by the printing industry. However, the regulatory community must offer realistic requirements that address applicable issues in order to achieve effective results.

The printing industry is not identified under the OSHA Combustible Dust National Emphasis Program (CPL 03-00-008) as an industry with frequent or high consequence combustible dust explosions or fires, nor is the printing industry an industry with the potential for combustible dust explosions or fires.

The printing industry already maintains an extremely low risk with regard to combustible dust by means of complying with existing OSHA standards applicable for the printing industry.

Commercial lithographic printing workplaces do not use, handle or transport particulate solids or combustible dust as a production process unlike other industries such as grain mills, saw mills and sugar refineries where these operations and their routine activities inherently present a combustible dust explosion and fire hazard by product and process. Rather, printers use “articles” of paper (webs and/or sheets) which are not manufactured by printers and are not manipulated through the printing process to any degree that is likely to cause any significant level of dust, dust deflagration, other fires or explosions.

Recently the State of Georgia’s Safety Fire Commissioner has taken into consideration those industries that do not represent a significant or likely combustible dust explosion or fire hazard. Under that states draft Chapter 120-3-24 Rules and Regulations for Loss Prevention Due to Combustible Dust Explosions and Fire, only those specific industry groups that have experienced either frequent combustible dust incidents or combustible dust incidents with catastrophic consequences would be applicable to the chapter which corresponds to the list of applicable industries outlined in Appendices D1 and D2 of the OSHA NEP 03-00-008. The commercial lithographic printing industry is not identified as an industry with frequent, high consequence, or potential with respect to combustible dust hazards.

The printing industry has recently experienced inapplicable programmed and enhanced inspections primarily due to paper being commonly associated with printed products and having “paper” and “paper products” being listed under the current OSHA combustible dust NEP as a likely dust hazard without clarification or consideration as to the process or activities involving the use of paper.

The following are specific comments by Printing Industries of America in response to each of the questions presented within the advance notice:

Industry Background

1. What business are you in? What NAICS industry or industries are you in?

The Printing Industries of America represent businesses involving commercial lithographic offset printing. This printing sector can involve pre-press, press and post-press activities. The two printing activities which commonly involve the introduction of paper include press and post-press. The press activities typically involves the transfer of an ink image to a rubber blanket and then offsets that image onto either a sheet of paper or a roll of paper (web). Post-press activities, though not always necessary, can include such common operations as stitching, stapling, folding, collating, binding, cutting and embossing.

Throughout the entire print production process, articles of paper used for printed product commonly retain their form and dimension unlike other industries where an article (sugar cane or timber) is manipulated (milled or sawed) into particles or pieces for product (sugar, lumber).

The commercial lithographic offset printing industry falls under the category of manufacturing and is identified by the following NAICS codes: 323110 and 323114

2. How many employees do you have? How many are production employees? How many employees work in areas where combustible dusts are present? What types of jobs do they perform?

As described above Printing Industries of America is the national association for the commercial lithographic printing industry and represents a large number of individual printing member facilities. The actual number of employees of each individual facility will vary; however, the average number of employees for the majority of the printing companies is typically less than 20 employees.

The number or percentage of production employees and those who would work in areas where dust may be present will vary depending on the size of the facility. The typical jobs performed by employees working in areas where a combustible dust could be present would include general laborer, equipment operator, and maintenance personnel.

3. What is the area of your facility? What percentage of this area has combustible dusts normally present? What percentage is subject to possible fugitive dust accumulations?

The areas occupied for individual printing facilities will vary from location to location. Printing Industries of America would not have records of this type of information for individual companies.

Under the scope of this question, the average lithographic printing industry under normal operations does not have a significant presence of combustible dust (generally less than one-quarter of an inch in sporadic areas). Also, a relatively small percentage (generally less than 1 or 2 %) of a facility would typically be subject to any fugitive dust accumulation.

4. What type or types of combustible dusts are present?

Within the printing industry paper composed primarily of paper would be commonly considered combustible, though hard to ignite, because it is derived from an article of paper which is known to be combustible, though hard to ignite. However, not all dusts present in a printing facility would be composed strictly of paper dust. Other materials such as household dust materials, cement or concrete building materials and general dirt (soil) are commonly present as well.

5. Would you expect other firms in your industry to have similar combustible dusts hazards or are the products or processes that generate combustible dust in your facility unusual for your industry? Why?

The type of dust and composition described in our response to question #4 would be similar to all operations and products within the commercial printing industry.

Definition of Combustible Dust

6. Do you determine whether a dust is considered a combustible dust by reference to data, testing, or some other means? Please explain.

Within the printing industry the primary dust present that could be considered combustible, though hard to ignite, would most likely be from paper. However, there are numerous varieties of paper manufactured, some of which contains clay coatings, which is not combustible. Therefore, while paper as an article is widely known to be a combustible, though hard to ignite, in general the degree of combustibility can not be assumed as uniform for all paper.

7. What additional tests do you conduct to determine the level of combustibility of a particular dust?

As the likelihood and risk level of combustible dust hazards within the printing industry is extremely low, the average printer would not find it necessary to conduct tests with respect to the combustibility of a dust.

Where sampling information does exist, paper dust is considered “hard to ignite” according to Factory Mutual Global 2-liter explosivity test results. Paper coatings (generally made up of clay which is not combustible) used in the manufacture of paper varies widely which also impact the combustibility of any dust that would be generated in our press or post-press processes. Even after sieving to remove particles larger than 500 microns, the dust is categorized as ‘hard-to-ignite’. In addition, a strong ignition source (open flames, welding arc, electrical short/arc, etc.) would have to exist simultaneously with the generation of a dust fall or cloud above the Minimum Explosive Concentration which is extremely unlikely to occur within a printing facility.

8. Do you have any dusts that you assume to be combustible, and, thus, preclude the need or expense of testing? If so, please indicate what type of dust.

As stated above, within the printing industry the primary dust present would most likely be paper dust and since articles of paper are widely known to be a combustible, though hard to ignite, seeking data, testing or other further determination is unnecessary.

9. Certain definitions, in particular those definitions based on particle size alone, would not cover some materials that can present an explosion hazard in certain situations. Accordingly, identify any dusts that can explode that would not be included in your definition. Would your definition include some dusts for which explosions are very rare or unknown? If so, which ones?

Printing Industries of America does not identify a definition of dust. However, an explosion caused by paper dust found within a lithographic printing facility, would require extreme and exact conditions that are neither typical, common and in virtually every case, unavailable within the lithographic printing process.

Hazard Recognition

10. How did you become aware that you had combustible dust present in your facility?

As stated previously, within the printing industry the primary combustible dust component would most likely be paper and since articles of paper are widely known to be a general combustible, it is commonly assumed that paper dust is combustible, though hard to ignite.

11. Who is responsible for determining if a dust is combustible? What expertise do they have?

As stated previously, a dust that may be present in a printing facility can be composed of some paper dust as well as other non-combustible materials such as concrete flooring materials, dirt, soil, etc. If paper dust is suspected it is known to be derived from articles of paper which is commonly known to be a combustible material. As such the dust from paper would also be commonly considered to be combustible, though hard to ignite. Therefore, available in-house staff is qualified to make a general determination of combustible paper dust and no unique expertise is necessary.

12. How do you determine if dust is combustible? Do you use published data, and if so, from what source? Do you sample dust for laboratory testing, and if so, how often? Do you rely on labels or data sheets, including MSDSs, developed by others? Do suppliers provide you with information related to combustible dust? Please explain.

As stated previously, a dust that may be present in a printing facility can be composed of some paper dust as well as other non-combustible materials such as concrete flooring materials, dirt, soil, etc. If paper dust is suspected it is known to be derived from articles of paper which is commonly known to be a combustible material. As such the dust from paper would also be commonly considered to be combustible, though hard to ignite. Therefore, available in-house staff is qualified to make a general determination of combustible paper dust and no unique expertise is necessary.

However, our industry does typically reference manufacturer labels and information presented within Material Safety Data Sheets for determining hazards associated with all production input materials. As paper dust is derived from articles of paper, obtained as paper sheets and rolls (webs), and since no material manipulation or changes are performed to such articles, no MSDS is required.

13. To what extent do the local code authorities, insurance representatives, or other outside experts determine the presence of combustible dust in your facility?

Agencies such as local fire departments, building inspectors and insurance agents commonly recognize that paper dust that may be present in a printing company is derived from articles of paper, which is widely known to be combustible but hard to ignite. Therefore these outside entities and agencies do not require further determination.

Hazard Assessment

14. Do you conduct assessments of combustible dust hazards? How often? What assessment method do you use? Describe the information you use in performing the assessment, as well as the information the assessment yields and how you use this information.

Hazard assessments specific for combustible dust are generally not required and do not typically occur in the printing industry since this is not a reasonably anticipated or likely hazard under normal operations or unexpected operations. Although, printers do perform periodic hazard assessments for the entire facility with respect to OSHA standards addressing PPE, general housekeeping and hazard communication which provides an opportunity to identify and address all applicable hazards.

However, one printing company actually assessed the amount of elevated surface area within a given room compared to the total volume of the room. The field measurements yielded a dust density of 11.447 gm/ft² for dust layered 1/8" deep. Assuming a 1/8" accumulation layer over every elevated surface (1,913 ft²) in the average shop floor, and further predicating that the entire dust mass was dispersed into the air; a typical analysis would result in a dust concentration in the range of only 3 gm/m³. This is only 3% of the necessary minimum explosive concentration (MEC = 95 gm/m³ by test). This indicates that a dust layer of 1/8" is much more restrictive than is necessary. Therefore, Printing Industries of America does not support any pre-determined thicknesses of acceptable dust layers as is often cited in NFPA documents but rather support individual analysis depending on the size of the room and amount of elevated surfaces which can collect fugitive dust.

15. On whom do you rely for technical assistance when performing the assessment? In-house staff, local/ State authorities, insurance representatives, or consultants?

As stated previously hazard assessments specific for combustible dust do not typically occur in the printing industry as this is not a reasonably anticipated or likely hazard under normal operations or unexpected operations. However, general hazard assessments can be effectively accomplished using in-house staff. In unique situations and those cases involving smaller facilities outside services have been requested for assistance.

16. How do you decide when outside expertise or assistance is necessary? How do you assess the capability of outside experts?

Most printers can perform the requirements of a general hazard assessment but in situations where the regulatory requirements are difficult to understand or implement or when the requirement exceed the capabilities of in-house resources outside assistance is sought.

For most small businesses, including printers, it is difficult to assess the services of outside safety and health experts independently. Printers will often seek recommendations of outside consultants from other printers or through their association membership services when available.

17. Are your employees involved in the hazard assessment? Does their involvement improve the assessment? Does their involvement improve their understanding of the hazard and its mitigation?

When applicable, and as with any safety initiative, printers will typically involve affected and key employees as necessary in hazard assessments. Printers recognize that employee participation is critical for achieving effective results and promoting a positive safety culture. However, the decision of when and who to involve in the process must remain with the employer in order to properly manage the business operations as well as the assessment process.

Hazard Communication and Training

18. Do the MSDSs you develop or use identify the risks associated with combustible dust hazards? Do they list mitigation measures? Are you aware of MSDSs that should identify combustible dust as a hazard and do not? If so, please explain.

The vast majority of in-put materials used in the printing process are not in dust or powder form and/or are not likely to become combustible dust hazards, therefore not requiring MSDSs or not requiring combustible dust warnings within applicable MSDS's.

Of the limited number of materials that are obtained and used in powder form, some have a manufacturer warning of "potential" combustible dust hazards. However, these materials have shown to be hard to ignite and are used in such limited amounts and over limited periods of time through the printing process that they do not generate any significant dust levels.

19. Do you communicate information on the risks of, and controls for, combustible dust hazards to your employees as a part of your hazard communication program?

As combustible dust is not a common hazard for the printing industry and is not a reasonably anticipated or likely hazard under normal operations or unexpected operations, employees are generally not informed of specific combustible dust hazards through the hazard communication standard unless special and unique circumstances would required such instruction. However, the risk and hazards associated with the accumulation of any combustible material is commonly communicated and addressed through fire prevention training and general housekeeping instructions.

20. Do you train your employees on the hazards of combustible dust and its mitigation? Do you also provide refresher training? What is covered in each type of training that you provide? How many of your employees receive each type of training that you provide? How many hours of training is provided and at what frequency (on hire, annually, as needed)? Who provides the training? What are their qualifications? Do you use standardized training materials (such as films, books, and computer classes)?

Combustible dust is not a common issue for the printing industry and is not a reasonably anticipated or likely hazard under normal operations or unexpected operations, however, the risk, hazards, and mitigations associated with the accumulation of any combustible material is commonly communicated and addressed through fire prevention training and general housekeeping instructions as required under the appropriate existing OSHA regulations.

The number of employees trained, the duration of training, and who conducts the training will vary among individual printers depending on the size of operation and number of employees on staff.

21. Do you have any means of determining if employees understand the training? Do you have any means of determining if employees are applying the training? If so, describe these means.

Printers may use several methods to determine the level of understanding of trained employees including written or oral tests, conducting periodic observations of employee performances and facility conditions, or programmed inspections to confirm that combustible materials are properly cleared, contained or cleaned according.

Consensus, Industry, and Insurance Standards

22. Do you follow the provisions in NFPA standards for combustible dust? If so, which standards? Is this use voluntary, or based on mandates by local authorities, insurance carriers, or other entities? Do you have any difficulty in using the NFPA standards because of conflicting definitions, varying requirements, secondary references to other standards, or any other reason? If so, describe these difficulties.

As this is not a common issue for the printing industry and is not a reasonably anticipated or likely hazard, the provisions of NFPA standards do not automatically apply to printing operations and therefore are not necessary and not typically followed for combustible dust. However, in some unique and uncommon circumstances where the accumulation of dust occurred from a deficiency in cleaning practices over many years, some provisions of NFPA 654 have been considered, as reasonable recommendations for performing substantial cleaning activities in order to return the area to normal conditions.

The use of any NFPA standard is strictly voluntary and is not mandated for printers by local authorities, insurance carriers or other entities.

23. Do you use FM Global Property Loss Prevention Data Sheet 7-76, Prevention and Mitigation of Combustible Dust Explosions and Fires, as an aid in determining how to mitigate the hazards of combustible dust? Is this use voluntary or mandated by your insurance carrier?

As this is not a common issue for the printing industry and is not a reasonably anticipated or likely hazard, the information provided through FM Global does not automatically apply to normal printing operations; are strictly voluntary; and are not mandated for printers by local authorities, insurance carriers or other entities. However, evidence through an FM Global 2-liter explosivity test conducted for a printing member showed that paper dust was classified as "Hard to Ignite" even after sieving to remove particles larger than 500 microns.

24. Are there any other standards or guides you use to address the hazards of combustible dust? If so, please indicate which ones, or describe them.

As this is not a common issue for the printing industry and is not a reasonably anticipated or likely hazard, no other consensus or industry standard or guide regarding combustible dust is used or referenced.

State and Local Codes

25. Does the fire or building code (State, local, or other) in your area specifically address the hazards of combustible dust? If so, how?

This would vary from location to location. It is unknown through the Printing Industries of America if the various codes address combustible dust issues.

26. Has your facility been inspected by State or local authorities? Is this a regular occurrence? If so, at what frequency? Were these inspections initiated by the authorities, or did you take the initiative to contact them? Did the inspections include combustible dust hazards? Did the inspection officials have expertise on combustible dust hazards? What action did you take as a result of State or local inspections?

This would vary from location to location, however many printers have reported that they received regular local building inspections and occupancy inspections, while fewer printers have requested occasional inspections from local authorities for various reasons. It is unknown how many of these inspections addressed combustible dust issues.

27. Do you know if State or local enforcement efforts have been effective in controlling combustible dust hazards? If you have information on any studies of this issue other than the CSB's study (for example, studies conducted by insurance organizations, code authorities, trade associations, consultants, or unions), please provide information on them.

Local and state specific information regarding this question is unknown through the Printing Industries of America.

Engineering Controls

28. Do your facilities or equipment have any of the following primary engineering controls to mitigate combustible dust hazards? If so, describe in detail where they are installed and how they function to mitigate combustible dust hazards.

- a. Features to prevent escape of dust into unwanted areas.**
- b. Features to prevent the accumulation of dust on surfaces.**
- c. Oxygen concentration reduction.**
- d. Dilution with noncombustible dust.**
- e. Foreign material (such as tramp metal) separation devices.**
- f. Monitoring and alarms for abnormal conditions.**
- g. Automatic interlocks, shutoffs, or overflow systems.**
- h. Manual emergency controls.**
- i. Lightning protection systems.**
- j. Features to mitigate the hazards of process heating systems.**
- k. Features to mitigate the hazards of comfort heating systems.**
- l. Features to mitigate the hazards of hot surfaces.**
- m. Class II electrical equipment and wiring.**
- n. Other mitigation features or engineering controls designed or built into your facility or processing equipment to prevent the occurrence of fires or explosions.**

As this is not a common issue for our industry or our equipment and is not a reasonably anticipated or likely hazard, the above engineering controls are not typically necessary for printing operations with respect to combustible dust.

29. Do your facilities or equipment have any of the following secondary engineering controls to mitigate combustible dust hazards? If so, please describe in detail where they are installed and how they function to help mitigate combustible dust hazards.

- a. Air-material separators (dust collection systems)**
- b. Segregation with physical barriers.**
- c. Separation by distance.**
- d. Fire-resistant construction.**
- e. Deflagration pressure containment.**
- f. Deflagration suppression systems.**
- g. Automatic fire suppression systems.**
- h. Manual fire suppression equipment.**
- i. Deflagration venting.**
- j. Dust retention and flame arresting devices.**
- k. Relief valves or devices.**
- l. Abort gates or dampers.**
- m. Isolation devices to preclude deflagration propagation.**
- n. Evacuation alarm systems.**
- o. Fire, heat, smoke, flame, or spark/ember detection systems.**
- p. Other mitigation features or engineering controls designed or built into your facility or processing equipment to limit deaths, injuries, or damage after a fire or explosion has occurred.**

Depending on the operation, printers can commonly use air-material separators to collect paper dust created during the printing and post-press processes. The typical systems used by printers would utilize ducting and booster fans to pull dust away from process areas through cyclones and bag houses to collect the dust for disposal. Dust is not present in these systems in explosive concentrations based on the high rate of air movement necessary to transport what is mostly paper shavings (not dust) as well as the extremely low rate of dust generation from the processes.

30. Do you feel that secondary engineering controls should be in the preferred hierarchy of controls after administrative controls? Why or why not? Please describe incidents where secondary engineering controls were effective or ineffective.

As this is not a common issue for our industry or our equipment and is not a reasonably anticipated or likely hazard, the described primary and secondary engineering controls should not be listed as a preferred hierarchy of control, rather permitting a facility to determine the best equipment, procedures or controls for specific operations.

Since dust concentrations are not present within printing processes in explosive concentrations, the only consideration is housekeeping to prevent the buildup over time of fugitive dust. As stated previously, calculations of worst case scenarios based on a hypothetical dispersion into the air of all fugitive dust in a 1/8" layer, creates on the order of 3% of the concentration necessary to be explosive – even then requiring a significant heat source based on FM Global testing results.

31. How much did each fixed feature cost to install? Are there any special maintenance or operating costs associated with these features (such as energy costs, waste disposal costs, maintenance activities such as clean up)? Are there any other routine costs associated with these measures?

The Printing Industries of America does not maintain such records from the printing members, although some printers have reported that the costs for installing and/or updating control equipment as well as operating costs was substantial.

For instance, under a blanket approach, a member with an existing dust cyclone without explosion venting installed would be required to replace the existing dust cyclone unit and upgrading to a model which could accommodate the now specified venting. The project cost estimate of this install and upgrade was \$150, 000. A more effective and economical approach would be to allow the printing industry to perform appropriate self assessments of the process under such circumstances.

32. How did you decide which of these features to provide in your facility? Were these features installed during the initial construction of the facility, or retrofitted at a later time?

For many of the printers, professional engineers, consultants, and original equipment manufacturers (OEM) provided guidance on equipment/control selection and installation. Placement of such equipment would typically occur in conjunction with the installation of peripheral production equipment.

Administrative Controls

33. Does your facility have any methods that prevent or limit the escape of dust? Please describe these methods.

Commercial lithographic printing operations do not inherently create, use, or handle combustible dust through the production process. Further, any dusts present are not “liberated” through normal printing operations. However, the normal design of OEM press and post-press equipment including optional devices such as hoods, which are operated and maintained in the manner intended, will commonly minimize the escape of any dust that may be present.

34. Do you have a program or policy specifically for cleaning surfaces to remove accumulated fugitive dust? What surfaces does this program cover? What is the frequency with which you remove dust from surfaces? Do you inspect hidden and non-work areas, such as ventilation systems, product or input storage areas, concealed spaces, areas above suspended ceilings, beams, and ledges, for fugitive dust accumulation?

The relatively small amount of dust present in a typical printing operation industry would be controlled through regular housekeeping and cleaning activities performed as necessary on a daily, weekly and/or quarterly or annual basis to maintain a safe environment.

While the scheduling will often depend on the size of operation and amount of material build up, such housekeeping and cleaning activities would commonly include cleaning floors, on and around production equipment, control cabinets, and workstations after each shift or daily; cleaning on and around production equipment, department areas and floors, shelves, and fixtures weekly; and cleaning entire rooms, walls, ceilings, floors and exposed horizontal surfaces quarterly or annually.

35. Do you have criteria or measures for what amount or level of fugitive dust accumulation is tolerable (such as a specific depth over a given area, inability to discern underlying color)? Please describe these criteria and measures.

Based on the insignificant levels of dust that would be typically present over time through a printing operation; dust representing “hard to ignite” properties; and the common cleaning practices implemented by printers, acceptable dust accumulations that are safely and easily managed would be approximately one-quarter of an inch.

As previously demonstrated, one printing company actually assessed the amount of elevated surface area within a given room compared to the total volume of the room. The field measurements yielded a dust density of 11.447 gm/ft² for dust layered 1/8” deep. Assuming a 1/8” accumulation layer over every elevated surface (1,913 ft²) in the average shop floor, and further predicating that the entire dust mass was dispersed into the air; a typical analysis would result in a dust concentration in the range of only 3 gm/m³. This is only 3% of the necessary minimum explosive concentration (MEC = 95 gm/m³ by test). This indicates that a dust layer of 1/8”, which is often cited in NFPA documents, is much more restrictive than is necessary.

36. Do you use cleaning methods that preclude dust disbursement? Which methods do you use, and under what conditions? What methods do you prohibit, and why?

The typical cleaning periods and practices for printers would not involve significant levels of dust accumulations and therefore would not normally present dust disbursements. In more rare or extreme instances where a deficiency in housekeeping occurred over a long period of time, techniques to clean elevated surfaces would include the use of water spray and manual collecting material or vacuuming utilizing equipment that is explosion proof rated.

Use of compressed air to blow down materials from elevated surfaces and equipment is not permitted so as to prevent any dust disbursements.

37. Do workers' assignments, in whole or in part, involve cleaning dust from surfaces? How many workers perform this task, and how many hours per week do they spend on dust removal? Can the interruption of the facilities' operations?

As with many manufactures it is common for employee job duties to include cleaning of their equipment, work stations, work areas, or building areas which can involve the removal of dust and dirt if present. The number of employees performing this type of activity and the time involved would vary depending on the size of the facility and the extent of the cleaning needed.

Typical cleaning activities either take place at the end of a shift; end of the day; or after business hours to avoid disruption of business operations.

38. Do you implement ignition controls for any of the following ignition sources for areas where combustible dust may be present? If so, indicate which sources and provide details. Did you consult with your operational employees in developing these programs or policies? How do you assure that your programs or policies are followed by all relevant parties?

a. Control of static electricity.

b. Use of cartridge-actuated tools.

c. Control of open flames and sparks (including cutting, welding, grinding, chipping).

d. Control of smoking.

e. Restrictions for hot surfaces.

f. Use of powered industrial trucks (EX or DX designation).

While the lithographic printing process does not normally generate significant levels of dust and would not warrant such controls specific to dust issues, printers have implemented some of these controls either in whole or part with respect to other applicable OSHA regulations depending on the individual operation requirements, however, the cause for doing so is not based on a concern for the presence of explosive concentration of dust.

39. Do you have a program in place for the maintenance and testing of fixed facilities, equipment, structures, or systems? If so, please describe the program.

Most printers will either have an in-house maintenance and/or preventative maintenance program or contract through an outside service to address regular and/or periodic maintenance as suggested by the OEM or as needed for unscheduled repair issues. The details of such programs will vary from facility to facility.

40. Do you have or use any personal protective equipment specific to combustible dust hazards? If so, please describe the equipment, and the reasons for its use.

Printers will often make available disposable particulate masks for workers who perform certain cleaning activities. However, the cause for doing so is not based on a concern for the presence of combustible dust. These masks would typically be non-mandatory use PPE because in virtually all cases employee exposure levels would be below exposure limits and any dust present would typically be considered a nuisance rather than a health risk. Employees are also provided Appendix D of the Respiratory Protection standard as required.

41. Are any of your administrative or work practice programs or policies written? If so, please provide a copy of these written documents.

Depending on the application, while it is not a requirement in most cases, some cleaning schedules and operating procedures are written depending on the size of the operation and policy of the company. Printing Industries of America does not maintain copies of individual facility work practice programs or policies.

Emergency Response

42. Do you provide facility information to industrial fire brigades or other emergency responders for the purpose of assisting their efforts to respond to fires or explosions? If so, please describe the information you provide to them.

Depending on the requirements from local authorities, the majority of facilities in the printing industry do not require the formation of a dedicated internal fire brigade or emergency provider. Where a local ordinance or other requirements specify the need to provide information regarding fires or explosions, printers typically provide a layout of the facility, utility type(s), shut-off locations, list of materials stored, and copies of MSDS's.

43. Do you provide training to employees, industrial fire brigades, or other emergency responders on the hazards of fighting fires in combustible dust-producing facilities? If so, respond to the following questions, and provide details and explanation. Do you train these groups on combustible dust hazards and their mitigation? Do you also provide refresher training? What is covered in this training? How many people receive this training? How many hours of training is provided and at what frequency (on hire, annually, as needed)? Who provides the training? What are their qualifications? Do you use standardized training materials (such as films, books, and computer classes)? Do you have any means of determining if attendees understand the training? Do you have any means of determining if attendees apply the training after they receive it? Please describe any instances where the training provided affected the outcome of an incident.

Commercial lithographic printing facilities do not produce, use or handle combustible dust as a normal process and therefore would not typically require specific fire fighting training on the subject. In such rare cases where a printer would choose to implement or be required to implement the functions of a fire brigade or emergency responders it would most likely be implemented for reasons other than combustible dust and proper employee training would be provided to all affected and key personnel according to the requirements of the existing and applicable OSHA standards.

Investigation of Incidents

44. Have you had any combustible dust-related fires, explosions, or near misses? If so, describe these incidents in detail, and indicate what changes were implemented to prevent a reoccurrence. How do you define or characterize a near miss?

While the Printing Industries of America does not regularly collect or maintain information of such activities for the entire printing industry, it is our experience over the years that the vast majority of the lithographic printers in existence have operated safely and without an explosion or fire caused by combustible dust. Of the rare and isolated cases, these have typically resulted in little or no damage and no injuries and were often caused by highly unusual mechanical and/or electrical failures.

45. Are combustible-dust-related fires, explosions, or near misses investigated? If so, indicate how thoroughly, who performs them, and what professional qualifications they have. Do you document investigation results? If so, please provide examples of such documentation.

The average printing facility will rely on the local fire department authorities and/or contracted insurance agencies to investigate any fires, explosions or near misses regardless of suspected cause. Typically the investigating authorities review the findings with the employer. Printing Industries of America would not have access to individual facility records, reports or cases of fires or explosions.

46. Does such a fire, explosion, or near miss cause a new hazard assessment to be conducted? Do these incidents cause you to review your engineering or administrative controls?

Depending on the circumstances of an incident experienced and the results of any investigations conducted, a hazard assessment or evaluation may be performed to determine if corrective actions are needed and how to implement such actions or corrections if necessary.

Regulatory Approach

47. OSHA recognizes that the risk from combustible dust hazards varies with the type of material involved and the conditions present, the particular processes used at a facility, and the number of workers exposed. These hazards exist in facilities ranging from a woodworking shop with one employee to a large manufacturing plant with thousands of workers. Should OSHA scale its requirements to be more or less restrictive depending on either the size of, or type of dust present in, the facility? How should this scaling be done (i.e., how should the provisions of a standard be applied to different facilities)? Are there situations or conditions that should limit the provisions that apply? If so, please explain.

Applicability of a standard should be based on all appropriate science and tests respective of a hazard determination in order to accurately determine if such a standard and its requirements are necessary for a particular industry or facility operation. With regard to combustible dust and the lithographic printing industry, a methodology should be addressed for acceptable housekeeping activities rather than a “one size fits all” approach currently taken with a specific standard.

48. Given the various definitions in the consensus standards, how should OSHA define combustible dust—by minimum particle size, without regard for particle size, or should the definition vary for the type of dust? Provide the technical basis for your response.

The definition should be based on all applicable tests and methods. A “one size fits all” approach would be inappropriate relative to paper dust. Testing from member organizations has resulted in a wide range of explosivity based on particle size, amount of clay coatings used in the manufacturing of the paper, and humidity.

49. Data indicates that mineral dusts (such as silicates, sulphates, nitrates, carbonates, phosphates, cement, salt, gypsum, sand, and limestone) are not explosible. Should OSHA exclude mineral dusts or any other dust from coverage? If so, which dusts? Please provide the technical data substantiating the lack of explosibility.

OSHA should exclude any material dusts that are not explosible or that have a low probability of explosive risk. In addition, unless there is science to show otherwise, a dust with a low explosive risk and conditions that inherently prevent an explosion hazard should also be excluded. For example, fugitive paper dust found in the lithographic printing industry typically has a Kst value of 1 or less; is typically generated in extremely low quantities; classified as “Hard to Ignite”; and is present in environments that do not provide the atmospheric conditions necessary for fire or explosions.

50. Some dusts (such as wood dust) are widely understood to be combustible, and are explosible under a wide range of conditions. Should OSHA consider certain dusts explosible under any conditions, thereby precluding the need for testing? Alternatively, should OSHA permit employers to make this determination? If so, for which types of dust? Please explain your responses.

A general assumption that certain dusts are explosible under any condition is not recommended as this is not always the case for many applications and is certainly not the case with respect to the lithographic printing industry. For example, paper dust found in a printing facility may be known to be combustible depending on the manufacturing of the paper; is rated as a low explosive risk; is classified as “Hard to Ignite”; and would only be explosive under very specific conditions that are unlikely to exist.

If OSHA were to establish explosivity parameters and thresholds to test and classify dust, it should also provide a hazard assessment methodology to determine if the remaining 4 factors necessary to create an explosion are present. As stated previously, current methodologies present in some of our member organizations have determined that explosive concentrations do not exist in normal or abnormal situations, and a housekeeping policy based on local calculations is adequate to eliminate the risk of fire or dispersal of dust into an atmosphere sufficient to create a hazard.

51. The NFPA combustible-dust related standards have some similar provisions, but also have some provisions that vary for different types of dusts. Other NFPA standards have provisions that apply only to specific dusts. Should an OSHA standard cover different types of dusts separately, together, or in some other manner? Please explain your response.

Printing Industries of America does not feel a specific OSHA standard regarding combustible dust is necessary especially since there are NFPA standards that are written for specific dust related issues. The numerous types of dusts and conditions in which hazards may exist would make a single OSHA standard on the subject overwhelming and potentially ineffective if consideration for specific industry application and exclusion were not provided.

If OSHA pursues a specific dust standard it should apply only to high hazard industries and industries that have a history of dust related explosion and fires that would not have been eliminated had the party involved followed the existing housekeeping standard. In other words, a new standard should only address high hazard industries which are determined to have explosive concentrations of dust in normal and abnormal situations.

52. The approach suggested by the CSB and others contains many of the elements in OSHA's Process Safety Management (PSM) Standard. Should an OSHA standard take an approach similar to the PSM Standard, e.g., by requiring the development and implementation of a site-specific plan tailored to the facility and hazards in question? Please provide a rationale for your response.

Printing Industries of America does not support the approach similar to the Process Safety Management Standard. Such an approach would require many small businesses to inapplicably develop site-specific plans to address an insignificant or non-existent hazard. Site-specific plans and safety management systems should be reserved for only those high hazard industries which are determined to have explosive concentrations of dust in normal and abnormal situations.

53. NFPA 654 contains a provision for combustible dust hazard assessment, which helps refine the actions required for adequate safety under the specific conditions present in a facility. OSHA recognizes that this approach may not be necessary for all types and sizes of facilities. For example, a small furniture shop may be able to safely operate under a fixed set of requirements for the well-understood hazards of wood dust. Should every provision of an OSHA combustible dust standard be addressed in a hazard assessment, or just provisions involving engineering controls? Should the hazard assessment vary according to the size or type of facility? Please explain your response.

Hazard assessments specific for combustible dust are generally not required and do not typically occur in the printing industry since this is not a reasonably anticipated or likely hazard under normal operations or unexpected operations. However, as stated previously, printers do perform periodic hazard assessments for the entire facility with respect to OSHA standards addressing PPE, general housekeeping and hazard communication which provides an opportunity to identify and address all applicable hazards.

Within the printing industry, simply identifying the presence of a combustible dust should not trigger the requirement of a hazard assessment or control but rather the foreseeable presence of all five elements of an explosive environment should be identified before controls (engineering or administrative) are required. Further, thresholds which define the specific hazards needing possible attention should also be well defined.

54. It has been suggested that OSHA incorporate NFPA standards by reference to address combustible dust hazards. The Agency is concerned with a number of issues regarding this approach. These concerns include, but are not limited to:

- a. The scope of NFPA standards exceeding OSHA's mandate to protect only employees.**
- b. The multitude of mandatory primary references, secondary references, and other subordinate references in each NFPA standard that could result in an unnecessary burden on employers.**
- c. The differences between the various NFPA combustible-dust-related standards.**
- d. The frequent updating of standards by NFPA, making the OSHA standard outdated.**
- e. The limited availability of older editions of NFPA standards.**
- f. The difficulty involved in readily updating the consensus standards referenced in an OSHA combustible dust standard to the current or most recent edition of the consensus standards.**
- g. The fact that OSHA cannot legally update NFPA or other consensus standards used in its rules by referring to the "current" or "most recent" edition of the consensus standards.**

How do you think the Agency should make use of NFPA standards in a prospective OSHA standard? If the NFPA standards are not directly incorporated by reference into the OSHA standard, would it be appropriate for the OSHA standard to reference NFPA standards as compliance alternatives (e.g., if an employer complies with the referenced NFPA standard applicable to an operation, OSHA would deem the employer to be in compliance with the applicable provision of the OSHA standard)?

Printing Industries of America agree with the concerns stated above regarding the referencing of NFPA standards. It should also be noted that NFPA standards have an inherent bias toward loss prevention of facility structures and assets that do not always impact worker safety and in many cases would not apply to printing operations.

In addition, because the primary, secondary, normative and informative references are not included as part of a published NFPA standard this essentially limits the user's comprehension of the document.

Further, without the necessary knowledge of all references and their requirements, users typically lack the understanding of how to apply the stated requirements.

Printing Industries of America request that NFPA standards remain voluntary and outside of any standard for an employer to determine its appropriate use and applicability but that OSHA accept the use of appropriate NFPA standards as acceptable compliance.

55. 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. Would an OSHA combustible dust standard increase employee safety beyond the level already attained through current Federal, State and local requirements, and voluntary standards? What approach would most effectively increase the safety of employees? Please provide a rationale for your response.

With respect to the printing industry, a specific OSHA standard on combustible dust would not be found to improve employee safety or significantly reduce existing conditions, rather such a standard would be redundant in light of existing federal, state and local regulations as well as existing voluntary standards.

Printing Industries of America does support the use of practical, industry specific guidance and outreach training materials which could be effective and helpful tools to assist employers with employee education programs.

56. In 2003, OSHA concluded in its regulatory review that no significant changes were needed to OSHA's standard on Grain handling facilities at that time. Are any revisions needed to the portions of this standard that address fires and explosions? Are revisions to this standard necessary to harmonize it with the treatment of other dusts? Should the existing provisions of the standard that address fires and explosions be covered under a combustible dust rule? If OSHA retained the standard and issued a combustible dust standard that applied to other facilities and processes, would portions of your plant be covered by both standards? If so, would this present a problem? Please explain your response.

The OSHA standard on Grain handling facilities and its requirements do not apply to the printing industry in any form. As such we can not comment on whether any revision of the Grain handling standard is needed. However, if any provisions of the Grain handling standard were to be covered under a combustible dust rule, changes that would make the standard applicable to other non-grain handling industries should be avoided.

57. OSHA anticipates that administrative and work practice controls would be included in a combustible dust standard. For instance, several OSHA standards already address the accumulation of fugitive combustible dust, but do not address the escape of dust. Some ignition sources are covered under current OSHA standards (such as electrical and powered industrial trucks), but other, easily controlled ignition sources, would likely be addressed in a prospective OSHA combustible dust standard (such as open flames, sparks, hot surfaces, static electricity, tools, and smoking). Engineering controls can be more costly and take longer to implement than administrative controls. Should an OSHA combustible dust standard have requirements for engineering controls to control fugitive combustible dust? Which engineering controls should or should not be required, and under what circumstances? Should OSHA require retrofitting of engineering controls, and if so, which controls? What time period should OSHA allow for retrofitting? What are the costs associated with retrofitting these controls?

Printing Industries of America maintains that the normal and proper administrative controls and work practices commonly implemented by printers adequately meet conditions for a safe working environment with respect to combustible dust. As the printing industry does not use, handle or manufacture products of combustible dust as a normal process, the use of engineering controls beyond that of original equipment manufacturer (OEM) design is not necessary. Production equipment designed for and used by the printing industry is inherently safe with respect to dust typically found.

Escape of dust at a rate and amount exceeding OEM specifications or that would present an explosive or fire hazard is not a common or likely occurrence but would adequately be addressed under scheduled preventative maintenance cycles or through non-scheduled repairs as necessary.

The requirement for engineering controls and/or retrofitting of engineering controls within a combustible dust standard would make virtually every printer responsible for assessing and determining the need for engineering controls and/or retrofitting requirements whether or not the actual need exists. A specific standard on combustible dust should have reasonable and applicable thresholds that would trigger the need to address the issue of controls. If such thresholds were exceeded it should then be left to the employer to decide what controls they would require, which ones can reasonably and feasibly be install and/or require retrofitting.

58. Workers are often in the best position to understand how processes work and the characteristics of the materials involved. Workers also may be in the best position to see how variations in procedures or equipment can affect their safety. Should operational employees participate in the development of engineering and administrative controls? Will this participation improve their safety? Please explain your response.

As with any safety efforts printers commonly involve affected and key employees as necessary in the development of any safety programs or controls, if necessary. Printers recognize that employee participation is critical for achieving effective results and promoting a positive safety culture. However, the decision of whom to involve and when must remain with the employer in order to properly manage the business operations as well as the assessment process.

59. Facilities, processes, and materials are subject to change over time. These changes can affect potential hazards, and, thereby, the means used to mitigate those hazards. If these changes are not examined to determine if corresponding changes in protection or prevention are necessary, worker safety could be decreased. Should change management be a component of an OSHA standard? Why or why not?

The printing industry is opposed to the inclusion of a change management component of an OSHA standard. Under existing standards applicable to the printing industry there exists language that requires employers to perform periodic assessments. For example, annual hazard assessments with regards to PPE which would cover an entire facility, process or procedure, and periodic assessments required by the Hazard Communication standard and MSDS reviews which would cover individual material changes. Further, printers commonly have periodic preventative maintenance and evaluations performed for existing equipment in order to maintain optimum performance which adequately provides for employee safety and identification of deficiencies.

60. A fire, explosion, or near-miss, could indicate that improvements are necessary to provide an adequate level of employee safety. Improvements may depend on the incident's severity or consequences. Should investigations of fires or explosions be a part of an OSHA combustible dust standard? Should a fire or explosion be classified for reporting purposes in terms of its severity, effect, size, or duration? If so, provide details. Should investigations and reporting of near-misses be a part of an OSHA standard? Please explain your response.

The printing industry is opposed to having investigations and reporting of near-misses to be a part of an OSHA standard. Including such a requirement would not be applicable in all cases and would be virtually impossible for many small businesses to technically perform and/or determine what should be reported.

In addition, fires and/or explosions that would occur within our industry are commonly investigated by local authorities when necessary and/or by insurance carriers. Unless there is an injury or loss of life associated with such an event, there is no basis for reporting the circumstances to OSHA.

Further, the printing industry does not commonly experience such fires, explosions or near misses as related to combustible dust and already have existing procedures and systems that alert appropriate operation personnel and emergency personnel.

61. Should an OSHA combustible dust standard address the hazards of fighting fires in combustible-dust producing facilities? If so, should the standard address fire fighting by designated employees, an employer's industrial fire brigade, or other emergency responders? In your response, provide details on hazards specific to fighting fires in or near combustible dust.

The printing industry is not a combustible dust "producing" industry and as such should not be included in a specific standard requirement related to fire fighting and combustible dust.

Addressing the hazards of fighting fires and determining the need for specific programs and procedures should remain with the existing OSHA regulations related to fire fighting and fire prevention such as 1910.39 – Fire prevention plans, and all of Subpart L Fire protection.

Economic Impacts and Benefits

62. What are the potential economic impacts associated with the promulgation of a standard specific to the hazards of combustible dust? Describe these impacts in terms of benefits from the reduction of incidents and injuries; effects on revenue and profit; and any other relevant impact measure. If you have any examples of estimates of the costs of controlling combustible dust hazards, please provide them.

Because the printing industry does not have an inherent problem with dust and would be considered a low risk, a dust standard would not significantly benefit worker safety within the industry. The specific conditions of the standard would determine the impact on the print industry. As previously explained, if the fact that explosive dust is present without a determination that it is present in "explosive concentrations", and engineering controls were a resulting requirement, a majority of air-material separators and by-product handling equipment could be impacted with no gain in hazard reduction. The only way to avoid unnecessary cost and significant negative impact on manufacturing operations would be to have a standard based on specific applicability criteria.

63. What changes, if any, in market conditions would reasonably be expected to result from issuing a standard on combustible dust? Describe any changes in market structure or concentration, and any effects on services, that would reasonably be expected from issuing such a standard.

The majority of the printing industry which operates on a very low profit margin and with fewer workers due to the economic crisis would be forced to pass along the additional compliance costs to its customer's significantly raising consumer pricing. In addition most printers would be forced to use fewer personnel on production activities in order to handle additional compliance requirements that do not affect safety subsequently resulting in production delays and potentially lost orders.

64. Would a comprehensive OSHA standard on combustible dust reduce fire and explosion hazards? How would an OSHA standard address any noncompliance problem (such as, noncompliance with the housekeeping standard or the GDC)?

As stated previously, because the printing industry does not have an inherent problem with dust and would be considered a low risk, a dust standard would not significantly benefit worker safety within the industry. If the fact that explosive dust is present without a determination that it is present in "explosive concentrations" and engineering controls were a resulting requirement, a majority of air-material separators and by-product handling equipment could be impacted with no gain in hazard reduction.

It is not understood why one OSHA standard would need to address any non-compliance condition related of another OSHA standard. If an employer does not comply with an applicable requirement of an existing OSHA standard, then the employer is in violation of that standard requirement. A specific standard on combustible dust would not improve this situation.

Impacts on Small Entities

65. How many, and what type of small firms, or other small entities, have combustible dust hazards, and what percentage of their industry (NAICS code) do these entities comprise?

The printing industry consists of over 12,000 businesses. Over eighty percent of these facilities are small businesses employing less than 20 employees. None of these 12,000 businesses would have an inherent explosive or fire hazard condition with regard to combustible dust.

66. How, and to what extent, would small entities in your industry be affected by an OSHA standard regulating combustible dust? Do special circumstances exist that make controlling combustible dust more difficult or more costly for small entities than for large entities? Describe these circumstances

There has been no scientific evidence that fire or explosive hazard conditions exist with regard to combustible dust in the lithographic printing industry, where the requirement of controls for fugitive dust beyond that of normal operations and procedures is necessary.

Because the printing industry does not have an inherent problem with dust and would be considered a low risk, a dust standard would not significantly benefit worker safety within the industry.

The majority of the printing industry which operates on a very low profit margin and with fewer workers due to the economic crisis would be forced to pass along the additional compliance costs to its customer's significantly raising consumer pricing. In addition most printers would be forced to use fewer personnel on production activities in order to handle additional compliance requirements that do not affect safety subsequently resulting in production delays and potentially lost orders.

Compliance Assistance

67. Are you familiar with any of the following guidance and outreach products OSHA has produced? Which of these products have you used as an aid in determining what to do about combustible dust in your facility?
a. Safety and Health Information Bulletin—Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions.

b. Web site Safety and Health Topics Page—Combustible Dust.

c. Hazard Alert Fact Sheet—Combustible Dust Explosions.

d. Poster—Combustible Dust—Does your company or firm process any of these products or materials in powdered form?

Printing Industries of America has considered and used, in part, the outreach materials described above as part of the development of safety reminders and compliance communication programs to the industry and our membership.

68. What types of materials, products, or outreach would assist you and employees in addressing combustible dust hazards? Do small businesses have special needs with respect to the form or content of such materials? Would dust-specific or industry-specific materials be useful?

Because issues involving combustible dust is not applicable to the lithographic printing industry and because of the extent that a majority of printers are small, the most helpful materials and outreach would be plain language, industry specific guidance materials, E-tools, and assistance through such programs as industry alliances and workshops

69. Do you prefer paper publications such as booklets, fact sheets, and quick cards, or electronic tools such as OSHA safety and health topics pages and eTools?

We find the most effective means for most often used reference materials would be the electronic factsheets, quick cards and e-tools.

Conclusion

Printing Industries of America respects OSHA's goal of targeting high hazard workplaces especially those primarily associated with combustible dust hazards. These efforts can certainly impact areas of industry where needed and ultimately improve employee safety. As a strong supporter of safety efforts and initiatives the Printing Industries of America desires to see appropriate focus of regulatory requirements with regard to specific industry circumstances.

The proposal by OSHA to develop a specific rule on combustible dust has the potential of requiring compliance for numerous facilities within an industry which represent an extremely low risk level with respect to combustible dust and will ultimately cause a disproportionate amount of redundant administrative efforts and financial burdens with little gain in safety.

Printing Industries of America further encourages OSHA to seek the approach taken by the State of Georgia's Safety Fire Commissioner under draft Chapter 120-3-24 Rules and Regulations for Loss Prevention Due to Combustible Dust Explosions and Fire whereby the standard only applies to those industries considered high hazards (as outlined by the OSHA NEP 03-00-008).

The Printing Industries of America and its membership would be pleased to participate in further discussions with regard to the issue of combustible dust hazards and would urge additional dialog and investigation of the matter with respect to applicability.

Please contact me with any questions regarding these comments. I can be reached at rhartwig@printing.org or 412-259-1792.

Sincerely,



Frederick A. Hartwig
Manager, Environmental Health & Safety Affairs
Printing Industries of America