

December 31, 2018

BY ELECTRONIC MAIL

U.S. Chemical Safety and Hazard Investigation Board
2175 K Street, N.W.
Washington, DC 20037

RE: Chemical Safety Board Call to Action: Combustible Dust

To Whom It May Concern:

The American Feed Industry Association (AFIA), the Corn Refiners Association (CRA), the National Grain and Feed Association (NGFA), the National Oilseed Processors Association (NOPA), the North American Millers Association (NAMA) and the U.S. Beet Sugar Association (USBSA) appreciate the opportunity to submit this joint statement in response to the *Call to Action: Combustible Dust* that was formally announced at the October 24 U.S. Chemical Safety Board (CSB) public meeting.

AFIA is the principal organization representing the American animal food industry and its suppliers. Membership includes over 680 domestic and international companies including manufacturers, ingredient suppliers, animal health companies, equipment manufacturers, integrated livestock and poultry producers, and firms providing other goods and services to the animal food industry, plus state, regional and national associations. AFIA companies today produce over 75 percent of the commercial animal feed manufactured in the United States each year.

CRA is the national trade association representing the corn refining industry of the United States. CRA and its predecessors have served this important segment of American agribusiness since 1913. Corn refiners manufacture sweeteners, starch, advanced bioproducts, corn oil and feed products from corn components such as starch, oil, protein and fiber.

The NGFA, established in 1896, comprises more than 1,050-member companies that operate more than 7,000 facilities and handle more than 70 percent of the U.S. grain and oilseed crop. The NGFA's membership encompasses all sectors of the industry, including country, terminal and export grain elevators; commercial feed and feed ingredient manufacturers; biofuels producers; cash grain and feed merchants; end-users of grain and grain products, including processors, flour millers, and livestock and poultry integrators; commodity futures brokers and commission merchants; and allied industries. In addition, affiliated with the NGFA are 33 state and regional grain and feed trade associations. Canadian and Mexican firms also are NGFA members.

NOPA represents the U.S. soybean, sunflower seed, canola, flaxseed and safflower seed crushing industries. NOPA's 13-member companies crush approximately 95% of all soybeans processed in the United States. NOPA member companies process more than 1.8 billion bushels of soybeans annually at 65 plants located throughout the country.

NAMA is the trade association representing the wheat, corn, oat and rye milling industry. NAMA's 47-member companies operate 170 mills in 38 states and Canada. Their aggregate production of more than 160 million pounds per day is approximately 95 percent of the total industry capacity.

The USBSA is a government affairs and industry trade association that represents the manufacturers of beet sugar in the United States. Its nine-member firms operate 22 factories that process refined white sugar from sugar beets grown in 11 states. The U.S. beet sugar processing industry is 100% farmer-owned cooperative in structure, and every factory operates with organized union workers.

Taken together, the associations represent an important segment of the U.S. agricultural grain, feed, milling, processing and export industry. Our members are critical in handling and producing the domestic food and feed supply and promoting U.S. agricultural exports. Virtually all the associations' facilities are subject, in whole or in part, to the Occupational Safety and Health Administration's (OSHA) grain handling standard (29 C.F.R. 1910.272), as well as NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities*. Thus, representatives from AFIA, CRA, NGFA, NOPA, NAMA and USBSA serve on the NFPA 61 technical committee.

As the principal representative of the grain handling industry, the NGFA has been in the forefront of research and developments designed to enhance safety in grain handling, feed, grain processing and export facility operations. The industry is dedicated to pursuing and promoting technological innovations, new practices, and safety training and education programs that contribute to safe and efficient grain handling operations. These programs are vital, first and foremost, to safeguard employees. The industry has demonstrated its commitment to safety, prior to and after the promulgation of the grain handling standard by the OSHA, illustrated most recently by NGFA's entering into a Strategic Alliance with the Agency in September 2017.

We support OSHA's goal of protecting employees and recommend that the CSB work cooperatively with industry groups to ensure stakeholder input and feedback is duly considered. As a result, we don't believe additional regulations are needed for the grain handling or processing industry to mitigate combustible dust hazards. But we do support the continued delivery of safety and health education and training to mitigate workplace hazards, such as combustible dust.

The NGFA worked with OSHA to develop the grain handling standard (29 CFR 1910.272), which was promulgated in 1988, principally to address fires and explosions. Since the standard was implemented, the NGFA has worked with OSHA officials to clarify compliance requirements and convey this information to industry. In addition, OSHA has published compliance information, including a booklet explaining the standard's requirements and

enforcement guidance for compliance officers, clarifying regulatory obligations under the standard.

Further, Bill Wright, interim chair of the CSB, testified during the House Education and Labor Committee's March 12, 2008 hearing on H.R. 5522 – the “Combustible Dust Explosion and Fire Prevention Act of 2008” – that the frequency of grain facility explosions declined by 60 percent following implementation of the OSHA grain-handling standard. This is a testament to the combination of industry research, education, training and government involvement.

According to combustible dust explosion data collected by Kansas State University, between 1976-2014, explosions declined 55 percent, injuries declined 79 percent and fatalities declined 95 percent as examined in five-year increments. The standard, combined with the industry's proactive safety and education efforts, have been effective in reducing combustible dust hazards, even as the volume of grain handled has increased significantly during the same time frame. For instance, during 1976-1985, the grain industry handled annually an average of 13.6 billion bushels of grain, whereas from 2005-2014 an average of 19.1 billion bushels was handled. Even with this 40% increase in the quantity of bushels handled during these comparative time periods, the number of explosions, fatalities and injuries dropped significantly.

OSHA also is required, under Section 610 of the Regulatory Flexibility Act and Section 5 of Executive Order (EO) 12866, to conduct what it terms a “look-back” review of major standards every 10 years to determine if they still are relevant, or need to be updated or revised. After a review that lasted more than four years, **OSHA issued a final report on March 14, 2003 announcing that it would retain its existing grain handling standard largely unchanged.**

Based upon its review, the agency said it had determined that the standard had contributed to a marked reduction in injuries and fatalities from grain dust explosions. **OSHA credited the industry with implementing improved safety procedures “in response to the...National Grain and Feed Association's guidelines”** that began the decline in deaths from grain dust explosions five years before the agency's grain handling facility regulations even took effect. The agency also added the following statement from the Food and Allied Service Trades, AFL-CIO, in its report, “... since the promulgation of OSHA's standard in December 1987, explosions were reduced by 42%, the number of injured was reduced by 60% and the number killed was down by 70%.” *[Emphasis added.]*

Education Efforts

The grain handling industry continues to strive to further enhance safety, hazard management and loss prevention. A major focus of this effort is an ongoing effort to disseminate new knowledge gained through the research and instruct grain handlers on their regulatory obligations under the standard. The following is a list of the major educational efforts undertaken by industry:

- The NGFA conducted an Elevator Design Conference in Kansas City on Sept. 27-28, 1979. In fact, even before the devastating explosions during the Christmas season of 1977/78, the industry conducted an earlier meeting in Kansas City on October 4-6, 1977 entitled International Symposium

on Grain Dust Explosions to discuss grain dust explosions and ways to minimize them.

- In the interim, the NGFA conducted a Grain Dust Control Seminar on May 7-8, 1981 in St. Louis, Mo., which resulted in a comprehensive proceedings book, entitled *Dust Control for Grain Elevators*.
- The NGFA in 1982 wrote a brochure on avoiding gas leaks at grain facilities after several recent explosions were traced to improper propane and natural gas line installations to elevator offices and grain dryer heating systems. More than 10,000 copies of the brochure were distributed by NGFA and USDA's Agricultural Extension Service to grain handling facilities.
- A Five Years of Progress Conference was conducted on Sept. 28-29, 1984 in New Orleans to present additional research findings. This conference resulted in another landmark publication: *A Practical Guide to Elevator Design and Retrofitting and Constructing Grain Elevators for Increased Productivity and Safety*.
- The NGFA in March 1987 wrote and distributed a guidance manual for grain elevator operators and fire department officials on the hazards of dealing with grain fires and explosions, and ways to control fires and avoid explosions during firefighting. The manual provided model written emergency plans for elevator managers and fire departments to deal with fires and explosions. The document underwent three printings based on demand and included a video on firefighting in the grain industry. The document was provided to members and fire officials with many in industry using it as a basis to communicate hazards with local fire departments to improve firefighting safety.
- Reports emanating from each of the research projects also were published and disseminated widely. The NGFA also published a series of brochures geared to elevator management and others that summarize the most important research findings.
- In January 1991, the NGFA conducted a series of eight workshops on OSHA Safety and Health Regulations for the grain handling industry.
- On July 13, 1993 – 15 years to the day after the establishment of the Fire and Explosion Research Council – the NGFA and the Grain Elevator and Processing Society (GEAPS) teamed up to sponsor National Grain Handling Safety Day. More than 500 grain handling facilities nationwide participated by purchasing safety day kits and conducting special safety meetings focusing on fire and explosion prevention. GEAPS is an international professional organization of some 2,880 individuals dedicated to information, innovation, networking, professionalism, quality and safety in grain-related industry operations.
- In March 1995, GEAPS conducted a workshop on Avoiding Crisis by Preventing Fires and Explosions. Agenda topics included Fire and Explosion Research Council research; requirements of the standard; emergency planning; capabilities of local fire and emergency response units; and effective ways to educate employees on fire and explosion safety.

- Six safety training videos also have been produced by the NGFA since 1990, which focus on preventing fires and explosions and emergency planning, as well as other industry-specific safety issues. In addition, GEAPS produced a series of safety programs that addressed elements of dust explosions from 1984-2000.
- In April 1998, the NGFA and GEAPS announced their next national joint sponsorship effort – a Safety, Health and Environmental Compliance Seminar for grain handlers, millers and processors held on July 27-28, 1998 in St. Louis, Mo. (i.e., concurrently with this OSHA meeting in Chicago). This successful seminar has been presented every other year since 1998 and always includes a session on the prevention of grain dust explosions.
- The NGFA and GEAPS in 2009 completed a new safety education DVD training program titled, *Your Safety Matters*, for employees of grain-handling, feed-manufacturing and grain-processing operations. The 30-minute DVD, which also is available in Spanish, addresses the following: fires and explosions; confined space and bin entry; truck and rail safety (such as fall protection); safe operation of equipment (such as proper lockout and tagout procedures); ladder safety; manlifts; electrical; personal protective equipment; hazard communication; first aid; emergency action plans and facility security.
- Since 2012 NGFA has worked closely with State/Regional Affiliate Associations to deliver one-day Safety and Regulatory Compliance Seminars that have focused on numerous safety-, health- and operations-related issues, including such topics as preparing for an OSHA inspection, key elements of the OSHA grain handling standard (29 CFR 1910.272), developing a safety and health management program and loss control, to name a few. The purpose of the courses has been to highlight industry best practices for preventing priority workplace hazards, such as explosions and engulfments. Many of the presentations at the events have been delivered by members of the NGFA's Safety, Health and Environmental Quality Committee. Nearly 2,000 grain, feed and grain processing professionals have been trained through these efforts.

While no single factor is responsible solely for the industry's dramatically improved safety record, these efforts are a testament to how an industry – working in tandem with employees and government – developed an effective standard and implemented safety improvements.

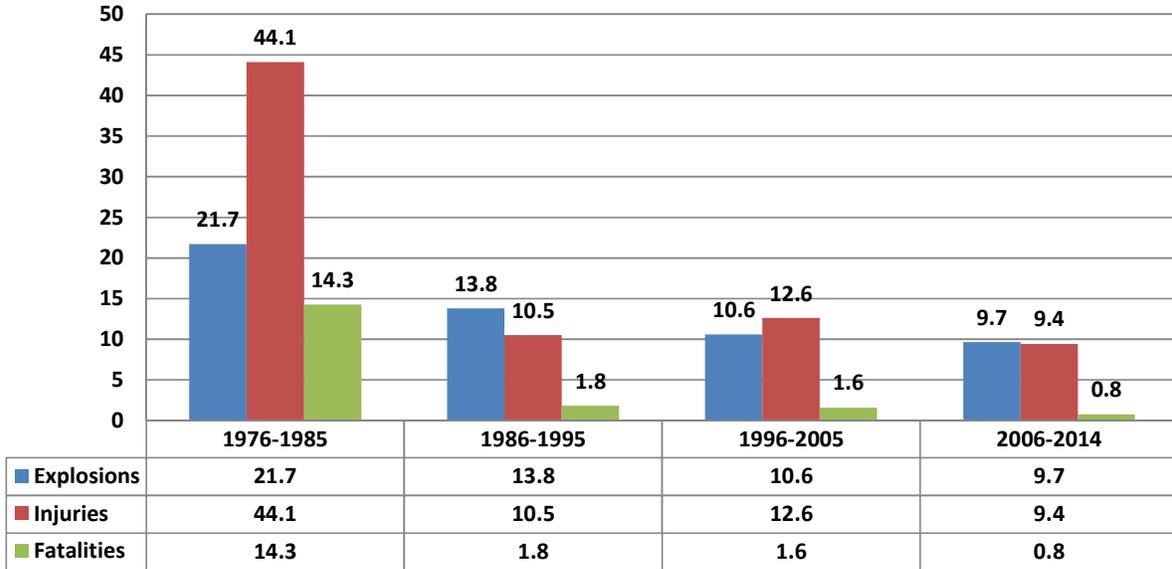
Dramatic Decline in Number and Severity of Explosions

Over the last 40 years, there has been an unprecedented decline in explosions, injuries and fatalities at grain handling facilities¹. As shown in the accompanying table, incidents at facilities covered by the OSHA grain handling standard (29 CFR 1910.272) have trended lower for the period 1976 through 2014².

¹ The OSHA grain handling standard applies to the following types of grain handling facilities: grain elevators, feed mills, flour mills, rice mills, dust pelletizing plants, dry com mills, soybean flaking operations, and dry grinding operations of soycake.

² Incident data source: Kansas State University (KSU) and USDA's Grain Inspection, Packers and Stockyards Administration.

Average Annual Number of Incidents for Grain Handling Facilities Covered by the Grain Handling Standard



These data show that between 1976-1985 and 2005-2014, explosions declined 55 percent, injuries declined 79 percent and fatalities declined 95 percent. As noted previously, the grain handling standard has been effective even as the quantity of grain handled has increased significantly. From 1976-1985, the grain industry handled annually an average of 13.6 billion bushels of grain, whereas from 2005-2014 an average of 19.1 billion bushels was handled.³ Even with this 40% increase in the volume of bushels handled during these time periods, the number of explosions, fatalities and injuries dropped significantly.

The benefits realized in addressing fire and explosion hazards, conducting research and education, and the implementation of the grain handling standard have combined to bring tremendous benefits to the grain handling industry. The savings resulting from the reduction of injuries and fatalities and the benefits to health and safety have greatly improved work conditions in our industry. Further, the economic benefit of implementing the grain handling standard and increasing the knowledge to avoid fires and explosions have been very beneficial.

It is indisputable that great strides have been made in reducing the incidence and severity of fires and explosions at grain handling facilities over the last 40 years. The record of improvement in reducing personal injury and equipment damage from grain dust explosions is proof that the grain handling standard and ongoing education efforts have been and continue to be effective.

³ Production data source: USDA's National Agricultural Statistics Service.

NFPA 61, Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities

NFPA 61, *Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities* is the primary voluntary standard used for the grain handling industry. The industry has had participants from virtually every sector of industry (grain elevators, feed mills, soy processing, starch manufacturing, flour milling, and other types of mills) over the years serve on the committee to fine tune the recommendation of the standards to fit our operations. There has been a great effort by industry to have practical and workable standards. Results of the industry research projects have been shared and incorporated into the NFPA 61 standard for all the industry to view and use. Research on proper and effective ways to vent bucket elevators is one example; others include the role of static electricity and metal sparks in dust explosions and the need for proper selection, use and maintenance of bearings. Basic facility design elements, such as placing legs outside of facilities and use of safety monitoring devices, also have been shared through committee participation and NFPA 61 development.

Thus, we do not consider it appropriate that the CSB combine our industry with others – such as the chemical, metals, wood working or sulfur handling industry – in assessing combustible dust-related incidents and potential recommendations. Each of those industries has vastly different equipment and hazards than ours. Facility and operating practices differ and require different prevention solutions. As a result, one size does not fit all because many new concepts and operational practices cannot be applied to existing construction without great costs and design changes that are not even necessary.

Industry Response to Question 1 of CSB Request for Comments in Call to Action

In real-world working conditions, where dust is an inherent aspect of the operation, can a workplace be both dusty and safe?

As previously explained in detail, the current OSHA grain handling standard has been recognized by the CSB, OSHA, unions and the grain handling industry as effective in significantly lowering the number of fires and explosion over the past 30 years.

In facilities to which OSHA's grain handling standard does not apply, the answer is, yes. One classic example is a sugar bin. Such a bin can hold many tons of sugar, have air-borne dust as sugar is brought into and out of the bin, have dust built up on support beams and walking surfaces, and yet still operate safely.

Industry Response to Question 2 of CSB Request for Comments in Call to Action

In such working environments — where the amount of ambient/fugitive dust cannot be wholly eliminated 100 percent of the time — how does an individual or organization distinguish between an acceptable or safe dust level and one that has been exceeded?

How often does judgment or experience play a role in such decisions? Should it?

Bulk raw grain, which produces the grain dust regulated under the OSHA grain handling standard, is the primary element that is received, processed, stored and shipped in bulk at grain

handling facilities within the scope of the standard. Grain dust properties generally are well known and understood by the industry.

NGFA's guidelines followed and supported by the OSHA grain handling standard have resulted in the industry investing hundreds of millions of dollars in new equipment, dust collection systems and other more modern mechanical equipment, along with annual operating and cleaning costs on top of this original investment. The safety improvement record indicates that more than 80% of the safety hazard now has been eliminated. This balanced, effective approach is a story of success that a singular focus on more stringent housekeeping criteria, e.g. dust accumulation levels, would impede in our judgment.

We believe the grain handling standard and NGFA guidelines effectively and properly balance the need to control potential ignition sources, have effective work procedures, and control dust in priority housekeeping areas. The balance was achieved because there was extensive data on our industry regarding the most common ignition sources involved in past explosions, the most frequent location of primary explosions and the means found effective to control and reduce such hazards. The information used to arrive at the grain handling standard is specific to our industry and is unlikely to be improved upon by a general industry combustible dust standard.

The regulatory approach finally adopted by OSHA in the grain handling standard recognizes that regulations should address numerous factors contributing to hazards. In this regard, the grain handling standard addresses employee training requirements, entry into grain storage areas, hot work safety precautions, housekeeping to minimize dust accumulations, contractor safety, preventive maintenance requirements, and grate openings on receiving pits to minimize the introduction of spark-producing material into the grain handling system. In addition, the standard contains specific facility or equipment requirements for emergency escapes, grain dryers, filter collectors and inside elevator legs that are intended to enhance employee safety and minimize explosion hazards at grain handling facilities.

In facilities to which OSHA's grain handling standard does not apply, we also observe that the question poses what is in many cases a false dichotomy. There are many places "where the amount of ambient/fugitive dust cannot be wholly eliminated 100 percent of the time" but where it is meaningless to speak of "acceptable" and "unacceptable" dust levels. Again, a classic example is the sugar bin; but there are many others.

Issues relating to combustible dust rarely are straightforward or simple. On the contrary, American industry is so varied, and the settings in which combustible dusts are present can be so different and often so complex, and dusts so varied in their behaviors, that no single set of guidelines will be both understandable and useful. That is why OSHA determined that a comprehensive regulatory approach was not feasible. The same will be true of CSB's efforts to lay down guidelines covering all industries and settings. In trying to cover all cases, they will either be too simple to be helpful, or inapposite in many settings, or too complex to be helpful. They almost certainly will fail to be any more helpful than the several already-existing NFPA standards on combustible dust.

Industry Response to Question 6 of CSB Request for Comments in Call to Action

How should the effectiveness of housekeeping be measured? What methods work best (e.g. cleaning methods, staffing, schedules)?

Proper housekeeping is important to safe operations. Housekeeping effectiveness should be measured by routine inspections by facility personnel of the operating areas of a facility. A written housekeeping plan – one of the requirements under the OSHA grain handling standard – is established to formalize a company’s policies on the procedures to be followed to regularly inspect for housekeeping conditions and to take action to correct conditions considered deficient (i.e. accumulations of fugitive grain dust on ledges, floors, equipment and other exposed surfaces) as soon as possible.

Industry Response to Question 7 of CSB Request for Comments in Call to Action

As equipment is used and ages, it requires mechanical integrity to maintain safe and efficient operability. How does inspection, maintenance and overall mechanical integrity efforts play a role in dust accumulations, and how are organizations minimizing such contributions in the workplace?

Preventive maintenance programs are key to overall efforts to control dust. Preventive maintenance refers to the regular inspection, lubrication, maintenance and repair of equipment to keep the facility running efficiently and safely. Regular, scheduled inspections should be conducted of the mechanical and safety control equipment, including grain dryers, grain stream processing equipment, grain dust collection equipment (*including filter collectors*) and bucket elevators. Malfunctioning or defective equipment should to be repaired promptly to control fugitive dust or any non-routine leak.

Industry Response to Question 10 of CSB Request for Comments in Call to Action

Are workers empowered to report issues when they feel something needs to change with regard to dust accumulation? What processes are in place to make these concerns known?

Many grain handling facilities empower their employees with a “Stop Work Authority” for any unsafe situation. Companies in our industry also conduct periodic safety meetings that elicit employee feedback. In addition, the employees are strongly encouraged to raise any safety related concern with their supervisor.

Industry Response to Question 11 of CSB Request for Comments in Call to Action

How can combustible dust operators, industry standards organizations, and regulations better share information to prevent future incidents?

The NGFA provides educational material that is available to both members and non-members within our expansive industry. This includes videos, webinars, workshops and guidance documents. The material is designed to provide updates on emerging and evolving regulatory requirements and more information on certain types of hazards and suggested ways to protect employees through safety best practices.

Conclusion

It is indisputable that great strides have been made in reducing the incidence and severity of fires and explosions at grain handling facilities since the late 1970s. The record of improvement in reducing the risk of personal injury and equipment damage from grain dust explosions is proof that the grain handling standard and industry education and training efforts have been and continue to be effective.

We encourage stakeholders and CSB members to review the comments submitted by NGFA on January 19, 2010 in response to the Combustible Dust Advance Notice of Proposed Rulemaking (Docket No. OSHA – 2009-0023) (See Attachment) where we discuss in further detail the success of the grain handling standard and industry safety education and training initiatives.

We also are concerned by the link in this *Call to Action* to the Didion incident because no agency as yet has identified any cause of the incident, including no link to any compliance deficiency that contributed in any way to the cause of the incident.

Further, this one incident at Didion does not reflect the accomplishments, as previously noted, of the grain, feed, milling, processing and export industry in mitigating hazards, enhancing training in safety and loss prevention, and reducing explosions over the past four decades. Government regulators often prefer to develop standards that can apply to all. However, it is clear the effects of our industry's self-initiated and self-funded actions, including significant facility, equipment and technology improvements, extensive education and research efforts, and improved commodity handling, storage, and shipping practices, is being reflected in substantially reduced risks of fires, explosions and associated injuries and fatalities.

The undersigned organizations appreciate the opportunity to comment on the *Call to Action: Combustible Dust*. If you have any questions, please contact Jess McCluer, NGFA Vice President, Safety and Regulatory Affairs at (202) 888-1102 or jmclcluer@ngfa.org. Thank you.

American Feed Industry Association

Corn Refiners Association

National Grain and Feed Association

National Oilseed Processors Association

North American Millers Association

U.S. Beet Sugar Association

Attachment