Engineering & Materials Consulting

Rapperport Associates, Inc.

Report on the Conn-Weld March 5, 2012 Dust Collector Fire and Deflagration and Associated Litigation

Prepared for:

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Introduction

Rapperport Associates has been retained by counsel for Conn-Weld Industries, Inc. to investigate, analyze, document, and offer expert opinion on the tragic fire and deflagration that occurred at the Conn-Weld facility in Princeton, WV on March 5, 2012. The incident caused severe burn injuries to Conn-Weld employees, and eventually the death of one employee. Consequently litigation was initiated involving Conn-Weld and several other parties. Since Rapperport Associates was retained after the litigation resulting from this incident was initiated, we were not able to conduct the site investigation and evidence collection until February 2014.

Tasks conducted in preparation of this report included said site inspection, review of documentation and photographs produced during discovery, review of deposition transcripts produced to date, and some reports of testing of evidence and of dust samples. Attachment A is a detailed list of these items. The three authors of this report, Robert Zalosh, Jeffrey Drake, and Dan Rapperport, also bring our backgrounds involving investigation of many other important industrial fires and explosions, including many combustible metal dust fires and explosions.

Conn-Weld Shot Blasting and Dust Collection Equipment

The Conn-Weld equipment pertinent to the March 5, 2012 incident are the Pangborn shot blaster and Cann Tech dust collector and ducting between these two items. The layout of this equipment in Bay 6 of the Conn-Weld plant is shown in Figure 1, which also shows the man lift brought into this area upon discovery of smoke.

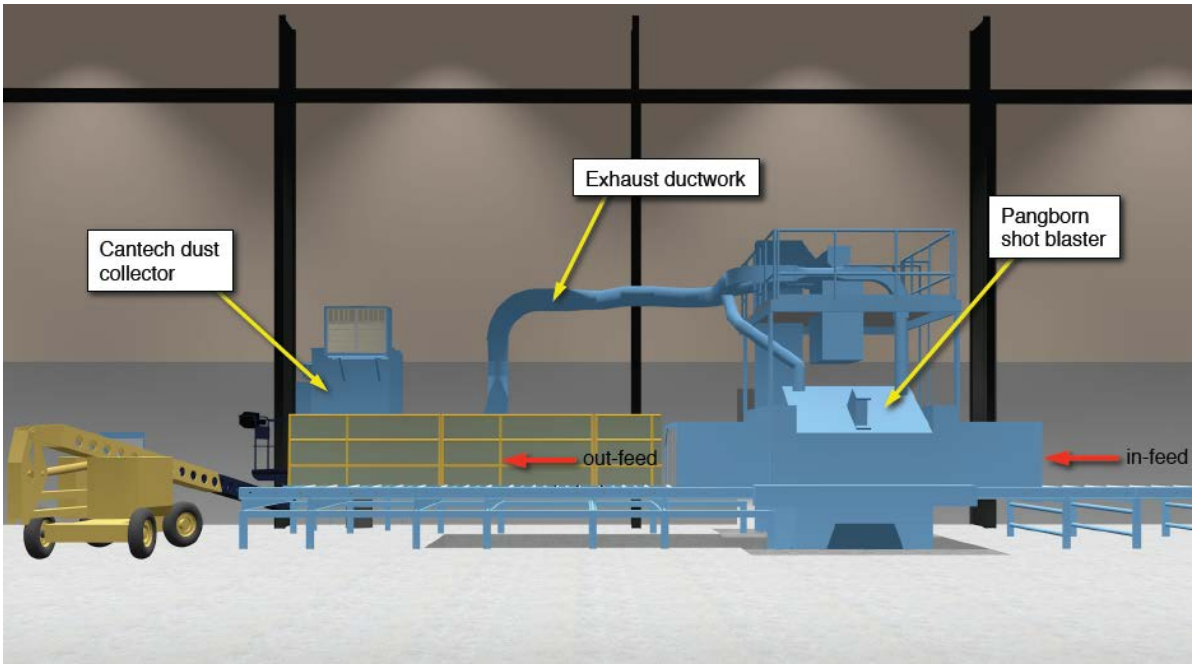

Figure 1. Pangborn shot blaster, roll conveyor, dust collector, and ducting, and Grove manlift.

The Conn-Weld Pangborn shot blaster is a Model ES-1937 Rotoblast continuous abrasive cleaning machine installed in 1991. It is used throughout most of the work day to clean a wide variety of steel

parts. According to the Pangborn specifications[1], it can clean plates up to 8 feet wide on a single pass through the system, and up to 10 feet wide on a rotated double pass through. The amount of abrasive required to charge the ES-1937 Rotoblast is approximately 10 tons.

At the time of the incident, the dirty air exhaust from the shot blaster flowed through ducting to a Cantech Model 16CP-4RP cartridge dust collector purchased from Pangborn with the Rotoblaster. The collector is rated to handle 5,000 cfm flowing through the 16 cartridges, each of which has 180 sq-ft of dust catching surface area. Access to the cartridges is through four hinged doors on the collector heavy gage steel housing.[2]

Dusty air entering the collector via the inlet at the top of the hopper flows up through a baffle plate and into the cylindrical pleated paper cartridge filters. Some of the dust clings temporarily to the cartridges and some falls to the hopper below. The clean air flows through the cartridges, up into the clean air plenum above the tube sheet, and out of the collector through HEPA filters situated at the top of the collector. Compressed air piping, valves, and venture nozzles periodically deliver reverse flow compressed air pulses to the interior of the cartridges to blow off the dust on the cartridge exterior surface. A pulse timer controls the flow of compressed air from row to row of cartridges. Dust in the hopper falls down and out through a short flexible hose into a 55-gallon drum.

Combustibility Properties of Dust Collector Materials

Besides the paper cartridge filters, the primary combustible material in the dust collector is the dust itself. Since the dust collector is drawing dirty air from the shot blaster, the dust consists of a mixture of steel from the parts being cleaned and fine particulates from the shot used in the blaster. Conn-Weld used Metaltec S-230 steel shot. According to the S-230 MSDS (Bates # CW000997) the shot is composed of greater than 96% iron, and less than 1% each of manganese, carbon, and silicon. Thus the steel shot and most of the steel parts cleaned in the blaster are mild (plain carbon) steel.

The combustibility of steel dust, as with other metal dusts, is highly dependent on particle size distribution and extent of oxidation. The OSHA investigation after the March 5, 2012 incident included conducting tests on a sample of dust from the dust collector drum. The OSHA Tech Center measured particle size distribution for the Pangborn drum sample showed that 59 weight % passed through a 200 mesh sieve, i.e. was smaller than 75 micrometers.[3] The OSHA sample composition analysis showed that 86 weight % of the sample was iron, manganese was 0.9 % and the other tested metals had less than 0.2 %. Most importantly, the OSHA dust combustibility test on the Pangborn drum sample produced an OSHA 20-liter low-turbulence K_{st} (normalized rate-of-pressure-rise) of 2.65 bar-m/s, and a pressure ratio of 2.44. The OSHA lab report conclusion from this data was that the dust sample was explosive, since the pressure ratio was greater than 2 and the OSHA K_{st} was greater than 1.5 bar-m/s.

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[1] Pangborn Installation, Operation, and Maintenance Instructions for ES-1937 Rotoblast – Descaling Machine, 1-4-1991.

[2] Pangborn Response to Plaintiff's First Set of Requests for Production of Documents, 8/13/2014, page 678 if 749.

[3] OSHA April 24, 2014 response to FOIA request from Ms Molly Underwood, p 3 of file.

In 2013, Camfil Farr had a Panborn dust collector drum sample tested by Fauske Associates. This drum sample, which had 100% of the particles smaller than 75 µm, produced a Go (combustible) result in the Go/No Go screening test, a maximum explosion pressure, P_{max}, of 3.3 bar gauge (corresponding to a pressure ratio of about 4.3), and an ASTM E-1226 K_{st} value of 53 bar-m/s.[4] Thus, both the Pangborn dust collector samples tested demonstrate that the collector dust is indeed combustible and thereby capable of producing a flash fire or explosion. However, compared to many other combustible dusts with similar particle size distributions, the Pangborn collector steel dust has relatively low P_{max} and K_{st} values.

Pertinent Conn-Weld Fire Protection Provisions

Since there was no national consensus standard on steel dust fire protection in 1991[5], and since Pangborn did not verbally advise Conn-Weld about the need for fire protection for the Pangborn dust collector, there wasn't any installed fixed fire protection in the collector when the Pangborn system was installed and when the 2012 incident occurred. Conn-Weld had not conducted any combustibility testing of the Pangborn system dust prior to the 2012 incident, nor had they been advised to do so by any OSHA inspector, or their safety consultant, Safety & Compliance Services, Inc.

The only fire protection equipment in Bay 6 at the time of the 2012 incident was a number of portable ABC fire extinguishers. Conn-Weld purchased the extinguishers from Fire Safety Products and relied on Fire Safety Products to determine the required number and spacing of extinguishers and to periodically inspect and recharge the extinguishers. All the extinguishers were ABC type and there was never any discussion or recommendation to acquire Class D extinguishers for the areas containing metal dust.[6]

Previous Dust Collector Fire

Conn-Weld experienced a smoldering fire incident in the Pangborn dust collector in approximately 2005. According to an account by Mike Connolly during his deposition,[7] a few filters in the dust collector were smoldering at the time the fire was discovered. Using a man lift to access the collector doors, the maintenance supervisor opened the doors, and donning a fire resistant glove, he was able to smother the filter fire and remove the smoldering filters. There was no need to use any portable fire extinguishers or apply any other extinguishing agent in that fire. Although there was no written report of this fire, Bradley Gillespie and other Conn-Weld personnel heard verbal accounts of it.[8] The success that Conn-Weld had in dealing with the 2005 dust collector fire was a factor in the approach of key personnel to the 2012 dust collector fire.

March 5, 2012 Incident

The first indications of a fire at Conn-Weld on March 5, 2012 were the observations of light smoke being emitted from the dust collector and from one of the Pangborn blaster components. Brad Gillespie, Maintenance Supervisor, was notified of the smoke, and he made arrangements for him and Clarence

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[4] Exhibit 11 in Conn-Weld Response to Interrogatories, Bates # CW001067 and 1068.
[5] The first edition of NFPA 484, Standard for Combustible Metals, Metal Powders, and Metal Dusts, was issued in 2002.
[6] Mike Connolly deposition pages 214-218. Brad Gillespie deposition pp. 35-37.
[7] Mike Connolly deposition pages 137-139.
[8] Bradley Gillepie deposition pp. 51-52.

Worrell to use the Grove manlift to access and open the filter access doors on the collector. The position of the manlift and the work basket in which Mr. Gillespie and Mr. Worrell were situated is illustrated in Figure 2.

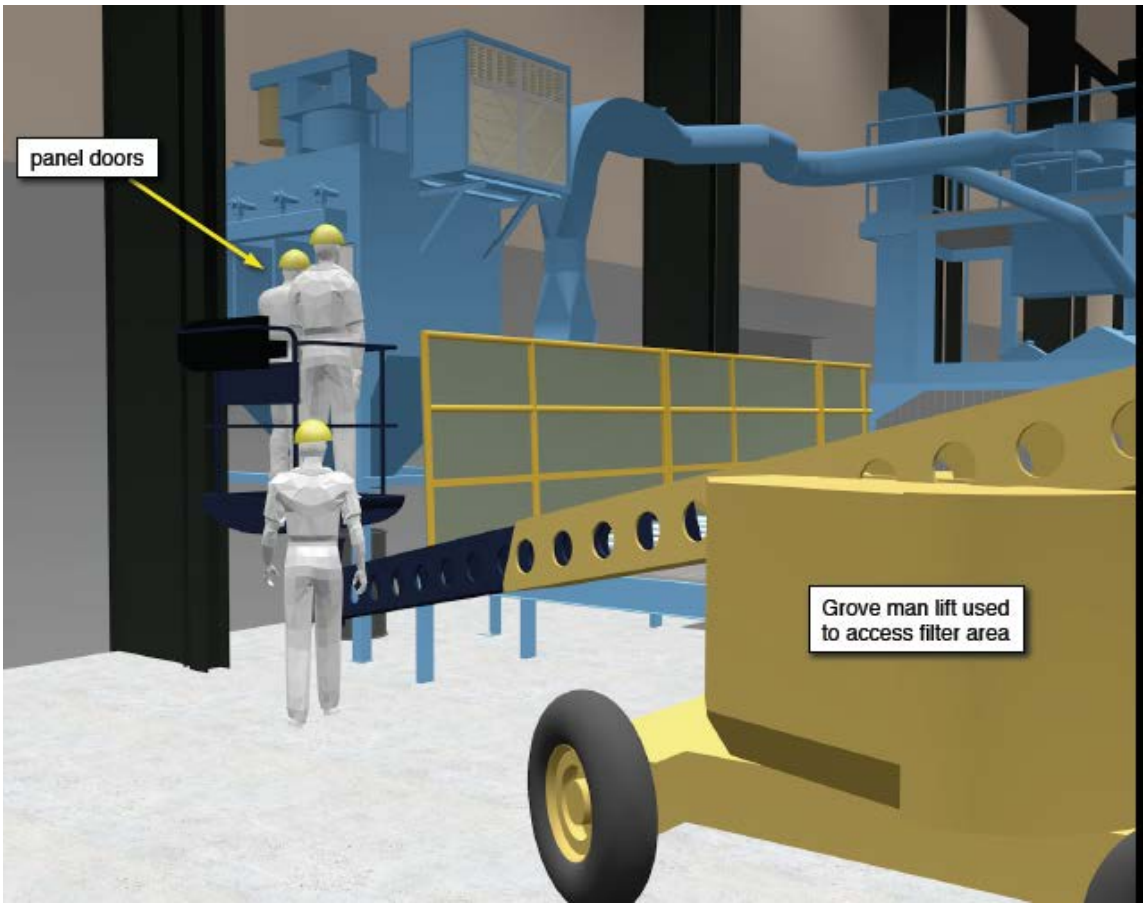

Figure 2. Position of Lift Work Basket and Personnel Next to Dust Collector

Mike Connolly, Conn-Weld Vice President and Director of Operations, also noticed the smoke and made closer observations of the blaster and collector to determine that the collector was the smoke source. He then turned off the electrical supply to the collector.[9] Details and the estimated times of these and the following incident events, as gleaned from various deposition accounts of the incident, are presented in the Incident Timeline, Attached B to this report.

Upon opening two of the access doors, Mr. Gillespie observed that at least one of the filters[10] had fallen into the hopper below where it was burning. It became apparent that the smoke source was this and other dust laden burning filters in the collector. Mr. Connolly, who was positioned below the Man lift with other employees, and Mr. Gillespie decided to attack the smoldering fire with portable extinguishers. Although Mr. Gillespie discharged between 5 and 15 extinguishers into the collector from the man lift, the fire continued burning in the lower section of the collector. At some point while he was

[9] Mike Connolly deposition, p. 93.
[10] Eye witnesses on the ground, such as Mike Connolly, saw an absence of several filters inside the open door.

fighting the fire, Mr. Gillespie asked Wayne Purdue to get him a nearby air wand attached to a compressed air source. Mr. Perdue gave the following account of what happened when Mr. Gillespie used the air wand inside the collector door opening. "After he done that you could see some flames sort of coming up out the door."[11]

After five to ten minutes of unsuccessful attempts to control or extinguish the collector fire, a deflagration[12] in the collector suddenly projected flames out the open door. The flames engulfed both Mr. Gillespie and Mr. Worrell who were initially unable to escape from the caged work basket on the Manlift. They suffered severe, and in Mr. Worrell's case, fatal burn injuries.

The vented deflagration occurred so suddenly and unexpectedly that eye witnesses have not so far provided a consistent account of actions immediately preceding it. According to Mr. Gillespie, "I don't know what I was doing in the doorway but when I reached in the doorway, it just went off in my face and knocked me down." [13] He also says "Once the initial blast happened, it knocked me down."[14] However, Mr. Connolly says he thought, at his order, Mr. Gillespie and Mr. Worrell were backing the manlift away from the open door when they were enveloped in the vented flame. However, Mr. Connolly and several other eye witnesses deposed to date were not looking at the manlift when the flame was first projected. Mr. Purdue could not recall the time interval between Mr. Gillespie using the air wand and the flame erupting from the collector.[15]

The fire in the collector continued to burn unabated for several minutes as Conn-Weld personnel frantically tried to move the Manlift and rescue Mr. Worrell, who was trapped in the Manlift for a longer period of time than Mr. Gillespie. Soon after the flame erupted, Mr. Gillespie says he crawled over the rail of the man lift basket and fell to the floor when residual flames burned his lanyard attaching him to the basket.[16] Eventually, Conn-Weld personnel and then responding firefighters extinguished the collector fire. The fire damaged filter compartment of the collector is shown in Figure 3. Most of the fire damage occurred during and after the vented deflagration since there was just smoke in the filter compartment before Mr. Gillespie attempted to extinguish the fire. Figure 4 is a broader view of the collector fire damage showing the thermal discoloration of the hopper and clean air chamber walls as well as the filter compartment.

[11] Wayne Purdue deposition p. 91, 96.
[12] A deflagration is defined in NFPA standards as "Propagation of a combustion zone at a velocity that is less than the speed of sound in the unreacted medium." In this case, the propagation occurred through a combustible dust cloud in the collector.
[13] Bradley Gillepie deposition p. 56.
[14] Bradley Gillepie deposition p. 60.
[15] Wayne Purdue deposition p. 151.
[16] Bradley Gillespie deposition, p. 60.

Figure 3. Fire Damaged Collector Filter Compartment


Figure 4. Dust collector after fire.

Incident Analysis

The attempts to extinguish the collector fire with ABC portable extinguishers were unsuccessful because most of the combustion was due to the steel dust on the filters and in the hopper. Dust samples from the barrel drum and from the collector hopper were obtained by Rapperport Associates investigators

earlier this year and submitted to the EAG chemistry laboratory for X-Ray Fluorescence analysis. The results reported by EAG[17] for these two samples listed the following percentages of chemical elements. These results show that the most prevalent material was iron oxide produced from the oxidation of steel dust. ABC extinguishers, in this case using an ammonium phosphate based extinguishing agent (as indicated by percentages of phosphorus and nitrogen in this and another hopper sample), are not effective on combustible metal (Class D) fires.

Table 1
Drum and Hopper Dust Sample Composition Analysis (EAG Report xxx)

Element	Weight % in Barrel Drum Sample	Weight % in Collector Hopper Sample
Iron	59.4	36.9
Oxygen	36.3	42.8
Nitrogen	0.3	3.2
Carbon	2.0	7.7
Phosphorus	0.026	3.86
Sulfur	0.019	1.86
Calcium	0.073	1.32
Each Other Element	< 0.8	< 0.5

The vented deflagration resulted from the ignition of a suspension of combustible steel dust inside the collector. The ignition source was either flame from the fire that preceded the deflagration, or the hot hopper wall that had been heated by the preceding fire. The suspended dust cloud could have been generated by: 1) the discharge of compressed air onto the accumulated dust; 2) the discharge of another extinguisher into the accumulated dust; or 3) by the air motion induced by another filter falling into the hopper below. Elaboration follows on these three possible dust cloud generation mechanisms.

Discharge of compressed air could have been due to another use of the air wand by Mr. Gillespie immediately prior to the deflagration. He states that he reached into the open doorway at this time, but doesn't remember what he was trying to do. Another source of compressed air at the collector is the compressed air piping and tubing connected to the collector valves used to pulse the filters. However, in order for the compressed air to be discharged within the collector, one or more of the four diaphragm valves in the compressed air header on the collector exterior (see Figure 5) would have to be open. These valves open when they are triggered by a small (1/4 inch) pilot air tube connected to the solenoid valves[18] in a housing at the top of the collector. Since the electrical supply to the collector was shut off after the fire was discovered, the solenoid valves would not have been activated. It is not likely that the diaphragm valves would have opened by thermal degradation before the deflagration because there was no significant fire thermal exposure on the collector exterior until the deflagration. Therefore compressed air discharge via the installed compressed air piping and valves is less likely than possible use of the air wand.

[17] EAG X-RAY FLUORESCENCE (XRF) ANALYSIS REPORT, 03 Oct 2014, for Rapperport Associates, Inc.
[18] See CW001048 for a description and diagram of the diaphragm valves and CW001039 to CW001043 for the pilot valves and enclosure.

Figure 5. Compressed air header and valves at top of collector.

It is possible that Mr. Gillespie discharged another portable extinguisher when he reached the open doorway just prior to the deflagration, and that the discharge created a dust cloud in the collector hopper. However, the extinguishers are probably pressurized with nitrogen so that there may not be a sufficiently high oxygen concentration in the dispersed dust cloud. This may be why the deflagration did not occur when all the earlier extinguisher discharges occurred in the collector hopper. Another possibility is that there was not a large enough flame or sufficiently hot hopper wall to ignite the dispersed cloud until the deflagration actually occurred.

The falling of one or more filters into the hopper might have occurred just as Mr. Gillespie approached the open doorway, but this would be quite a coincidence. It is also not clear whether or not the falling filter would generate sufficient air turbulence to loft a dust cloud large enough to produce the large vented flame that burned the men in the manlift. Therefore, I would judge this dispersal mechanism to be less likely than those above.

Irrespective of the actual dust cloud generation mechanism, the conditions leading up to the dust collector deflagration represent a dangerous lack of appreciation of the hazards of combustible metal dust and proper ways to deal with a combustible dust fire. The responsibilities of the various litigation parties in contributing to this lack of appreciation are discussed in the remainder of this report.

Contributing Responsibilities of Various Parties in Litigation

Conn-Weld Responsibilities

Conn-Weld had a responsibility to comply with the provisions of NFPA 484 applicable to the combustible steel dust in the Pangborn shot blaster, ducting, and dust collector, and to the response to the incipient fire on March 5, 2012. However, Conn-Weld management and employees were not aware of this responsibility prior to the March 5, 2012 incident because they did not realize the steel dust in the collector was combustible or explosible in the context of NFPA 484. They were also not aware of the need to have dust samples tested per NFPA 484-12 Chapter 4 methods to determine if the dust was combustible or explosible according to NFPA 484 applicability criteria.

One reason Conn-Weld was not aware of its responsibility regarding the applicability of NFPA 484 to the dust collector is that NFPA 484 did not exist when this equipment was installed at Conn-Weld in 1991. NFPA 484 and other NFPA standards have a retroactivity section (Section 1.4 in the NFPA 484 2012 edition) concerning the applicability of provisions to equipment that existed prior to the effective date of the standard[19]. The retroactivity statement about such equipment is that "the authority having jurisdiction shall be permitted to apply retroactively any portions of this standard deemed appropriate" to "existing situations presenting an unacceptable degree of risk." OSHA is one such authority having jurisdiction, and it cited Conn-Weld for locating the Pangborn dust collector (indoors) near employees. Although it is not clear whether or not the dust collector location was a critical aspect of the events of March 5, 2012, Conn-Weld accepted the OSHA citation and has installed the replacement dust collector outside the building in compliance with NFPA 484 and the OSHA Citation 1a hazard abatement measure.

OSHA cited Conn-Weld for not having Class D extinguishers for use on combustible metal fires at an incipient stage, and for not providing adequate training on the hazards of fighting combustible metal dust fires. Conn-Weld did not challenge these citations and has instituted directives and training to prevent the employee firefighting actions that led to the March 5, 2012 deflagration and associated burn injuries. The firefighting and employee training requirements in NFPA 484 are explicitly retroactive.

Another reason that Conn-Weld was not aware that the steel dust in the Pangborn collector was combustible is that none of its co-defendants in this litigation, and apparently none of its other equipment and material suppliers, had informed them of the need to have the dust tested to determine its combustibility.[20] Conn-Weld's experience with the 2005 collector smoldering fire incident led management and key employees to believe that it was the paper filter rather than the metal dust that was the primary combustible material in the collector. Mike Connolly acknowledged that he had seen a Metaltec MSDS statement about steel dust fire and explosion hazards, but that he didn't know how to interpret the statement. Furthermore, OSHA decided to classify all their citations as serious rather than willful. In view of these circumstances, as well as the actions of Mike Connolly in trying to fight the fire

[19] NFPA 484-2012 became effective as of August 31, 2011.

[20] Some steel manufacturers, such as Nucor, inform their customers of the need to test steel dust for combustibility, but it is not clear if Conn-Weld purchased steel from Nucor for use in the shot blaster, and if they received such a warning.

alongside his employees so that he too was injured on March 5, 2012, it is inconceivable that there was any deliberate intent to injure Mr. Gillespie, Mr. Worrell, or any other Conn-Weld employee.

Pangborn

Pangborn and its subsidiary Cantech had extensive experience in handling and collecting dusts produced from steel shot blasting operations. They also had experience handling and collecting other metal dusts that are more reactive than steel dust. The Pangborn User Manual provided to Conn-Weld included a two page Important Notice Regarding Hazardous Materials[21] that informs the reader of flammability hazards and recommended precautions "when cleaning aluminum, magnesium, titanium and similar metal parts." Since Conn-Weld had no intention of using the shot blaster to clean these more reactive metals, the warning was not applicable to the Conn-Weld operations.

Mike Connolly and Randy Goode have stated that Pangborn did not provide any written or verbal warnings about fire and explosion hazards associated with cleaning steel parts. The absence of such warnings despite the fact that fires had occurred previously in steel shot blasting and dust collection operations, (and that Pangborn has been aware of metal dust collector fires that have occurred in some of its products)[22] was an important factor in the impression that Conn-Weld had about its use of the Pangborn shot blaster and dust collector in the years and months leading to March 5, 2012. In my opinion, Pangborn has a responsibility to keep its customers aware of important hazards with the use of its shot blasters and dust collectors, particularly when those hazards have not been previously identified and disclosed.

Metaltec

Metaltec Steel Abrasive Company, the original supplier of steel shot for the Pangborn blaster, provided Conn-Weld with a 3-page Material Safety Data Sheet for its S-230 steel shot.[23] The second page does have a warning about moderate fire and explosion hazards when the "material is in the form of dust and exposed to heat of flames, chemical reaction, or contact with powerful oxidizers." The problem with this statement is that the steel dust also poses a flammability hazard when it is exposed to other ignition sources that are more likely to be present in a shot blaster and the connected ducting and dust collector. The most common ignition source in this environment is a hot spark or ember generated in the blaster. The MSDS should have emphasized this hazard rather than list much less likely ignition sources for its intended use. Metaltec customers would be more likely to heed that more applicable warning, particularly if it is also included in the shot delivery packages.

Another pertinent problem with the Metaltec MSDS is that it lists dry chemicals as the first extinguishing method/agent. Conn-Weld did use many dry chemical extinguishers on the March 5, 2012 fire to no avail. The last several editions of NFPA 484 have required: "only listed, Class D extinguishing agents and those agents shown to be effective for controlling combustible-metal fires shall be provided in areas

[21] Bates Numbers CW001003 and 1004.
[22] Pangborn's Answers to Plaintiff Kathy Worrell's Interrogatories No. 12 and No. 18.
[23] Bates Numbers CW000997 to 0999.

where metals in a combustible form are present."[24] Another paragraph in the NFPA 484 section on extinguishing agents allows ABC dry-chemical extinguishers "to be used on other classes of fires in the area where combustible metals are present."[25] These two deficiencies in the Metaltec steel shot MSDS may have been factors in Conn-Weld's inappropriate response to the March 5, 2012 incipient fire.

SCSI

Safety & Compliance Services Inc. was retained by Conn-Weld to provide various consultation services related to safety training and site inspections. Since the retention agreement was only verbal, there is no documentation of its scope, prior to this litigation. The SCSI Response to Plaintiff's Interrogatory No. 9[26] does list specific dates in 2010 on which SCSI conducted training on certain safety subjects, and conducted site inspections. Several of the Conn-Weld deponents remember one or more SCSI personnel walking through many Conn-Weld areas including the area with the Pangborn blaster and dust collector.

Since SCSI in general, and its president Tim Fitzgerald in particular, offers consultation services on OSHA compliance issues, and since the training sessions provided by SCSI to Conn-Weld included an OSHA 10-hour general industry training, it was logical for Mike Connolly to recall his understanding of the SCSI scope of work to include his request for Mr. Fitzgerald "to role play as an OSHA inspector, and to go around and evaluate the entire premises at Conn-Weld, and anything that he saw that was involved in an OSHA violation."[27]

It seems from Mr. Fitzgerald's notes of his site inspections (as included in the SCSI Response to Plaintiff's First Set of Interrogatories) that he was looking for general OSHA violations in various areas including the Pangborn blaster. Since he would have seen the dust collector attached to the blaster, he should have realized there was metal dust in the collector, and that one of the important recent OSHA programs is the Combustible Dust National Emphasis Program[28], which includes instructing its Compliance Officers to take dust samples and have them tested to determine dust combustibility. He made no recommendation to Conn-Weld to have the collector dust sampled and tested.

Fire Safety Products

Fire Safety Products (FSP) provided fire extinguisher services to Conn-Weld including extinguisher inspection and maintenance, and periodically repairing or recharging the numerous portable fire extinguishers in the facility, as well as selling new extinguishers. FSP also installed, inspected, and maintained two special fire suppression systems for specific areas and equipment not related to the shot blaster.[29] Although FSP inspectors may not have been aware of the presence of combustible dust in and around the Pangborn dust collector, they were presumably aware of the limitations of the numerous ABC portable extinguishers that they sold to Conn-Weld. They also presumably were aware

[24] NFPA 484 Standard for Combustible Metals, 2012 Edition, paragraph 15.3.3.1.
[25] op cit, paragraph 15.3.3.6.
[26] Defendant SCSI's Response to Plaintiffs' First Set of Interrogatories, p 5.
[27] Mike Connolly deposition, p. 204.
[28] OSHA Directive CPL 03-00-08, Reissued 3/11/2008.
[29] Fire Safety Products' Response to Plaintiffs' First Set of Interrogatories, Interrogatory No. 11.

that Conn-Weld shot blasters produced metal dust because that is an inherent part of a shot blaster operation.

Conn-Weld relied on FSP for recommendations on the placement of the appropriate portable extinguishers in various areas including the Pangborn shot blaster area. FSP never asked about, let alone recommended, use of listed Class D extinguishers in this and other areas at Conn-Weld that generated metal dust. This FSP lack of inquiry and explanation about the inappropriateness of ABC extinguishers for metal dusts was another important factor contributing to Conn-Weld's misunderstanding about what to expect when Mr. Gillespie discharged numerous ABC extinguishers onto the burning steel dust in the collector on March 5, 2012.

The preceding summarizes our opinions to date based on the resources at our disposal. We reserve the right to revise, modify, and supplement this report as we become aware of additional pertinent information and resources.