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Is Enough Done To Stop Explosive Dust?

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(CBS) You might not think of sugar, corn, or metal as materials that can cause a catastrophic explosion in a factory, but when they're ground into dust-and suspended in the air-all it takes is a small spark to set off a major disaster. As **correspondent Scott Pelley** reports, devastating dust explosions at American factories are more common now than ever.

Since 1980, there have been at least 350 such explosions in the U.S., killing 133 people and injuring hundreds more. There are at least 30,000 factories in the nation vulnerable to dust explosions, and yet, some top federal safety officials tell **60 Minutes** the government agency whose job it is to protect workers is ignoring a tried-and-true way to prevent those explosions.

On the night of Oct. 29, 2003, the Hayes Lemmerz factory in Huntington, Ind., exploded in a ball of fire. The plant made wheels for cars, and federal investigators said aluminum dust had piled up and detonated.

Thirty-three-year-old Shawn Boone was a mechanic at the plant. His sister, Tammy Miser, got a call with word that her brother was seriously injured. "Shawn and a couple of his co-workers were in the furnace room. And there was an explosion. And then there was a second more intense blast," she remembers.

Asked what happened to him, Tammy tells Pelley, "He laid on the building floor. And the aluminum dust actually continued to burn through his flesh."

Tammy says her brother had third and fourth-degree burns on 92 to 100 percent of his body. She says the doctors said there wasn't any hope. "That his internal organs were burned beyond repair. They wouldn't even bandage him. They said that the only solution we had was to take him off of life support."

Shawn Boone was one of 15 people killed in dust explosions that year. It was a turning point for Carolyn Merritt, who was then the head of the Chemical Safety Board, the federal government's own experts who find the cause of the nation's worst industrial disasters.

Merritt ordered the most comprehensive investigation ever done on dust explosions. Her conclusion: hundreds of industries create huge amounts of lethal dust and aren't even aware of the risk. "If this material were gasoline, there would be no doubt in any owner's or operator's mind what needed to be done," Merritt tells Pelley.

Asked if that would be an emergency, Merritt says, "Absolutely."

"Is dust, functionally, the same thing?" Pelley asks.

"It has the same power if a dust explosion occurs," Merritt explains.

"Can you just explain to me how it is that the dust is explosive, I mean, what's going on here?" Pelley asks,

"Okay, if you take an ear of corn, you're not gonna be able to light it with a match. But if you grind that into a powder, the smaller the particle size, the more explosive it is. Metal dust. People don't think metal can burn. But you turn it into a fine powder, and you have a very explosive and flammable material," she explains.

Even a thin layer of dust, once airborne, can be ignited by the smallest spark-a machine being plugged in or a forklift scraping the ground.

One explosion, also in 2003, at West Pharmaceutical Industries in Kinston, N.C., showed just how insidious the problem can be. Because it was a drug company, the factory floor was immaculate. But plastic dust was hidden above the workers' heads.

"We know that as much as two inches of dust had accumulated in the ceiling, probably about a ton of material. That makes for a powerful explosion," Merritt says.

Hours after the blast employees were still trapped inside; seven died and scores were injured. Merritt's investigation concluded that OSHA-the government agency created to safeguard workplaces-had no effective regulation on its books to deal with explosive dust. And she found that OSHA inspectors routinely overlooked the hazard.

Merritt tells Pelley OSHA had been at that worksite before the explosion and that they didn't find any dust issues.

Even when the dust was in plain sight, OSHA inspectors missed it, as they did at CTA, a plant that made soundproofing in Corbin, Ky., where the workplace had been covered in plastic dust. That factory exploded in February 2003, killing seven. The Chemical Safety Board determined that the cause was dust, ignited by an open oven.

Merritt says it was clear there was a dust problem.

"Help me understand, how does OSHA inspect that plant and not find a problem?" Pelley asks.

"The inspectors aren't trained to recognize dust as a critical, catastrophic potential hazard," Merritt says.

Bill Hargraves was one of those OSHA inspectors until he retired this past January. He says he spent 28 years at OSHA but didn't receive any training on industrial dust during that time.

He learned in 1999 how costly that ignorance was when an iron foundry he had inspected in Springfield, Mass., was destroyed; the fire marshal said it was a dust explosion.

Hargraves says three people died and nine people were severely injured in that blast.

"When you were standing in the devastation of that plant, did you wonder why you hadn't been trained on industrial dust before that time?" Pelley asks.

"I had been to that plant before. I had been at the foundry before. And it had not been a consideration of mine," Hargraves says.

Asked why not, Hargraves says, "I did not have the knowledge. Either foreknowledge or knowledge by training."

Ed Foulke has been the head of OSHA for the past two years, and he told Congress last March that OSHA is on the case. "We are doin' the job, and we are getting to the places that we need get to," he said.

Foulke has 1,029 inspectors, and told **60 Minutes** about 50 of them have already had extensive dust training. He says OSHA sends inspectors to companies with the greatest risk of a dust explosion. And it turns out there are a lot of those.

"You've identified 30,000 workplaces that are at risk. How many of those will you inspect over the next year?" Pelley asks.

"Well, approximately 300 or more," Foulke says.

"If you do 300 a year, it'll take you 100 years to inspect all those places that you've identified," Pelley remarks.

"We're not gonna get in every work site every year. It would be physically impossible from a monetary standpoint and on a personnel standpoint to get in every facility once a year. Or even every five years," Foulke says.

Foulke blames employers for the dust explosions. Too many companies, he says, don't comply with existing OSHA safety regulations that he claims take care of the problem. The main one, he says, is the "housekeeping" standard, which doesn't mention dust but does require workplaces to be generally clean and safe.

"It's been on the books since the early 70s. If employers comply with the housekeeping standard, then they have eliminated dust, and you cannot have a combustible dust explosion," he tells Pelley.

"But the plants are exploding, Mr. Secretary. That's the bottom line here. People are dying," Pelley points out.

"It comes down to it's the employers that are responsible for complying with the standards," Foulke argues.

Asked why his inspectors aren't making the employers comply, Foulke says, "Well, we do when we go into the inspection. We cite employers all the time on combustible dust."

But **60 Minutes'** investigation found that of all the dust explosions in the last two years, OSHA missed the problem almost every time. **60 Minutes** went through OSHA's own records and discovered that of 67 factories hit by dust explosions, only one was cited by OSHA inspectors for a dust hazard before the blast. In one case, a plant exploded only three days after a visit by an OSHA inspector, who found no problem with dust.

Twenty years ago, OSHA did deal with one kind of explosive dust: grain dust. Grain elevators used to blow up regularly; OSHA fixed the problem with a new safety standard limited to grain dust.

Carolyn Merritt says it had a dramatic effect. "Fatalities were reduced by 60 percent. And incidents were reduced by 42 percent," she explains.

Asked if it was a big success, Merritt tells Pelley, "And industry is very happy with the standard now and fully supports it."

"So, then why is the same standard not applied to other dust in the workplace? It doesn't seem to make sense," Pelley asks.

"The industry lobby is very strong," Merritt says. "And they do not want new regulation."

"After the grain dust rule was imposed, fatalities went down by 60 percent. And, yet, other industries that have dust see their plants exploding month after month. And the critics say they don't see OSHA putting two and two together. You have a successful program. Why not replicate it?" Pelley asks OSHA head Ed Foulke.

"Well, once again, Scott, as I indicated to you, we do have our standards in place. And we are looking at the data that we have," Foulke says.

Foulke told **60 Minutes** he hasn't ruled out issuing a new industrial dust standard but says the issues are complex and need study. "We're talking about tens of thousands of facilities. We're talking about hundreds of types of processes, at least. Maybe thousands of types of processes," he says.

"When someone says that this is all very complex, and we don't understand it. Well, therefore, we can't regulate it, you say what?" Pelley asks Carolyn Merritt.

"It's just a delay mechanism from actually doing anything," she says.

Merritt was appointed to the Chemical Safety Board by President Bush. Asked what her experience has been with regard to safety regulations in the Bush administration, Merritt says, "The basic disappointment has been this attitude of no new regulation. They don't want industry to be pestered. In some instances, industry has to be pestered in order to comply."

But Ed Foulke says the accusation that the administration is against rule making and doesn't want any more standards is "absolutely false."

This past February there was yet another massive dust explosion investigators say was caused by dust, this time at the imperial sugar refinery outside Savannah, Ga. Once again, OSHA had failed to cite the company for dust. A huge factory building was demolished, dozens of workers were severely burned, and 13 died.

"If OSHA had acted and if the industry itself had paid more attention possibly this incident would not have happened. It should not have happened," Merritt says. "These people should not have been killed."

The Savannah explosion led to immediate action on the part of Congress. George Miller, a California Democrat, told Ed Foulke that lawmakers would impose a new safety standard if Foulke continued to resist. "Mr. Foulke, I must tell you, I just see such an incredible lack of urgency on your part about the role of your agency to protect workers that it's astounding," Rep. Miller remarked. "You're here clinging to what you've done and it's turned out to be fatal for the American workers."

"If the employers comply with the housekeeping standards it would eliminate or at least mitigate the hazard of having a combustible dust explosion," Foulke replied.

Tammy Miser, who lost her brother Shawn in that explosion five years ago in Indiana, now speaks out on behalf of other dust explosion victims. "Our losses are a lifelong, needless sentence because a few people couldn't or wouldn't do what was right," she says.

Asked what responsibility she thinks OSHA bears, Tammy tells Pelley, "I feel that they should take most of the responsibility for this. Because they know. And they're the ones that can prevent it. Nobody else can. There's nobody else out there to take care of it."

In April, a bipartisan majority in the House voted to force OSHA to impose new safety rules for combustible dust. Now the measure goes to the Senate, but the White House is already considering a veto.

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