U.S. CHEMICAL SAFETY AND
HAZARD INVESTIGATION BOARD

+ + + + +

COMBUSTIBLE DUST EXPLOSION AT
IMPERIAL SUGAR COMPANY
PORT WENTWORTH, GEORGIA,
ON FEBRUARY 7, 2008

+ + + + +

PUBLIC MEETING

+ + + + +

Cumberland Ballroom
Hilton Hotel
15 East Liberty Street

Savannah, Georgia

Thursday,
September 24, 2009

The above-entitled meeting came to order, pursuant to notice, at 6:30 p.m.

BOARD MEMBERS:

JOHN BRESLAND, Chairman
GARY L. VISSCHER
WILLIAM B. WARK

WILLIAM E. WRIGHT

CHRISTOPHER WARNER, General Counsel
INVESTIGATION TEAM MEMBERS:

JOHN B. VORDERBRUEGGEN

LUCY SCIALLO
JOHNNIE BANKS

I N D E X

P R O C E E D I N G S

(6:30 p.m.)

MR. BRESLAND: Good evening, and welcome to this public meeting of the U.S. Chemical Safety Board, the CSB. I'm John Bresland, Chairman and CEO of the Board. With me this evening are board members Gary Visscher, William Wark and William Wright. Also joining us is our general counsel Chris Warner and the CSB staff members whose efforts have facilitated this meeting.

Before we begin, I would like to take a moment to extend my deepest sympathies to those who were injured and those who lost friends and loved ones as a result of this terrible accident. I would also like to acknowledge the many organizations that responded to this accident, including the fire departments, EMTs and the local hospital whose organized and cooperative efforts provided valuable assistance to victims and families during this event.

The CSB is an independent nonregulatory federal agency that investigates major chemical accidents at fixed facilities. Our investigations examine all aspects of chemical accidents, including physical causes related to equipment design, as well as inadequacies in regulations, industry standards and safety management systems.

Ultimately we issue safety recommendations which are designed to prevent similar accidents in the future.

The purpose of this evening's meeting is for the CSB investigative team to present their findings to the Board and for the Board to vote on the final report in the February 7, 2008, explosion at Imperial Sugar in Port Wentworth, Georgia. Following that presentation we will open the floor to public comments, and then the meeting will conclude with a discussion by the Board and a vote on the final report.

Before we begin, I would like to

point out some safety information. Please make a note of where the exits are. There are three doors here, and those doors, if you move to the right, will take you outside the building in case there is an emergency. I'd also ask that you please mute your cell phones so that the proceedings are not disturbed. I'll give a second to do that.

(Pause.)

MR. BRESLAND: Thank you.

On the evening of February 7, 2008, at the Imperial Sugar refinery in Port Wentworth, Georgia, there were 101 employees and contractors present at the facility. A combustible dust explosion and fire fatally injured 14 employees. In addition to these victims, 39 others were injured, including 23 who were burned. Of these 23 burn victims, 15 had serious and life-threatening injuries, requiring hospitalization at the Joseph M. Still Burn Center in Augusta, more than a hundred miles from Port Wentworth.

There was a tragic, unnecessary loss of life, and so the Chemical Safety Board began an investigation. Let me explain the process the Board follows to complete an investigation.

Each independent member sitting up here this evening has had the opportunity to individually study the draft report. At this public meeting we will discuss our opinions about the report and then vote on the report and its recommendations. Our objective is to leave here with strong, effective recommendations, based on the report's findings, that will help prevent future accidents.

If anyone in the audience wishes to comment publicly after the investigators' presentation, please sign up at the tables in the check-in area, and I will call your name at the appropriate time. However, please note that we will have to limit public comments to three minutes each, and also note that we are not able to take questions for the investigators directly from the audience, and so I ask that all

comments be directed to me as the presiding official.

And if there is a point that is raised in your comment where I believe the investigators can provide some immediate clarification, I'll ask them to do so.

I'd like to thank the team for their diligent work on this investigation, and I will now recognize other board members for an opening statement.

Mr. Visscher?

MR. VISSCHER: None. Thank you, Mr. Chairman.

MR. BRESLAND: Mr. Wark?

MR. WARK: None, thank you.

MR. BRESLAND: Mr. Wright?

MR. WRIGHT: Nothing, Mr. Chairman.

MR. BRESLAND: Thank you. At this time I will ask CSB Investigation Supervisor John Vorderbrueggen to introduce the investigation team and begin his presentation.

Mr. Vorderbrueggen is a mechanical

engineer and a registered Professional Engineer and has worked for several well known engineering firms. He has more then 35 years of experience in engineering consulting, mechanical and structural design and process safety. He has led a number of major investigations since joining the Chemical Safety Board in 2002.

Mr. Vorderbrueggen.

MR. VORDERBRUEGGEN: Thank you, Chairman Bresland.

Members of the Board, General Counsel, ladies and gentlemen, to start this presentation, let me first introduce my colleagues here at my left.

Ms. Lucy Sciallo holds a bachelor of science degree in industrial health and safety from the Pennsylvania State University. Prior to joining the CSB, Ms. Sciallo worked in the oil industry as a Health and Safety Specialist and focused on incident reporting and analysis, facility auditing and chemical consequent analysis. She also holds a Graduate Safety

Practitioner designation from the Board of Certified Safety Professionals.

Mr. Johnnie Banks worked for 22 years at the Chevron-Texaco Corporation refinery prior to joining the Chemical Safety Board. In addition to being a head operator, he was involved with health and safety initiatives at the facility, such as the implementation and coordination of near-miss reporting and incident investigation tracking programs. Mr. Banks is a graduate of the University of California-Berkley and is a Certified Fire and Explosion Investigator.

As Mr. Bresland introduced, there was a significant emergency response because of this incident. And let me just acknowledge a few by name. The emergency response was headed by the Port Wentworth Fire Department and Fire Chief, and to support that effort, the Pooler Fire Department, Bloomingdale Fire Department, Thunderbolt, Savannah and Effingham County Fire Departments participated in the fire

suppression, search and rescue, and recovery of the victims involved in this incident.

In addition, the Savannah-Chatham Metropolitan police and of course the Port Wentworth police and sheriffs in the counties and areas participated in this terrible tragedy. The Georgia State Fire Marshal had a team on site within hours of this incident. The Georgia Emergency Management Agency supported this emergency response. The Chatham County Emergency Management Agency participated. The Georgia Search and Rescue conducted extensive search for the victims inside this facility.

In addition, the Salvation Army and the American Red Cross supported this activity. In particular, Salvation Army spent many months on site providing food for the folks that were in the disassembly of the damaged equipment and the like.

And, then, finally, I want to recognize Our Lady of Lords Catholic Church, which is directly across the street from the

facility, for their effort in supporting the families that night and for many days after that as they worked through this tragedy.

The agenda for this evening will cover the following subjects. There'll be a brief presentation on what is a combustible dust explosion; how does it occur? And that's primarily for the benefit of the audience, who may not be familiar with the concept.

There'll be a brief company description. Then we will present an incident animation, which is a presentation of what the investigation team concluded was the sequence of events for the primary dust explosion and how it progressed in the facility.

We will then present the findings and causes of this event. There will be a discussion on the regulatory impact as a result of this event. Then we will conclude with recommendations to the Board for consideration and then we will close with Board questions. And as Mr. Bresland pointed out, there will be a

comment period from the members of the audience.

For the benefit of the audience, I'm going to present a very short combustible dust explosion video. There's a couple of demonstrations in this video. It describes how -- why dust becomes combustible and explosive, and I just want to note that one of the examples they refer to polyethylene dust, which is used in the demonstration. Polyethylene dust has similar characteristics to sugar dust. So when you see the two events and when they specifically polyethylene, it is essentially equivalent to sugar dust.

(Whereupon, a video was played.)

MR. VORDERBRUEGGEN: Okay. With that introduction of dust explosion sequence of events, I'll move into the activities of our investigation and our findings.

The five-member investigation team arrived on site on February 8, 2008 -- that is a typo; I apologize. The incident occurred on February 8, 2007. More than four months of

activities were conducted on site as the facility was dismantled; the damaged areas were dismantled.

Some 2,500 man-hours of effort went into just that piece of our 19-month investigation. We conducted approximately 140 interviews of workers, contractors, managers, supervisors, company executives. We photo-documented the facility as it was disassembled, we reviewed equipment records, we collected sugar samples for later testing to determine what kind of characteristics the sugar dust in these sugar samples might have, and we reviewed thousands of company documents and correspondence dating back to the 1950s, 1960s and up to, of course, the present. And that included the predecessor owner of that facility, Savannah Foods.

Just a brief summary of Imperial Sugar and their history: Imperial Sugar Company has more than a century of refining and packaging experience in the sugar industry.

They operated the Sugar Land, Texas, sugar refinery; it was closed a few years ago. They are headquartered in Sugar Land. They purchased the Port Wentworth facility in 1997 and have operated that facility since, and they operate the Gramercy, Louisiana, sugar refinery.

In 2005, the Port Wentworth, Georgia, facility manufactured approximately 774,000 tons of granulated sugar, and the Gramercy facility manufactured approximately 570,000 tons of granulated sugar. This represents -- Imperial Sugar is one of the largest granulated sugar refiners in the country.

This is a view of the refinery prior to the incident, and I'm going to point out a few features in this view. That first rectangle that shows is principally what the portion of the refinery that shows in this view -- just for orientation purposes, the river is to the right in this view, and Route 25 and the main entrance to the facility is off to the left.

The second frame shown there is the sugar silos and the west bucket elevator on the left, and there was an east bucket elevator on the right. The silos are approximately 40 feet in diameter, 100 feet tall. There was what is called a penthouse that went across the top. There were conveyors in the penthouse, and what is not seen in this picture, because it's down below the silos, is the silo tunnel that we will talk about later. And it will show up in the animation. And the silo tunnel contained two conveyor systems. One was an 80-foot-long steel conveyor under the two silos on the right, and the silo on the left had a single conveyor under it. They were at ground level.

Surrounding the silos -- and you can see that they're pretty much surrounded -- is the south packing building. It was a four-story building with dust collectors mounted on the roof and associated equipment. Behind the silos in this picture was a four-story building called the north packing building, or also known as the

Bosch and it was -- so the silos are completely surrounded.

In our investigation we obtained copies of photographs that show the conditions at various times in the facility. This first photograph shows spilled powdered sugar and powdered sugar dust accumulations. The photographs are dated in July 2007, approximately seven months before the explosion. The left photograph, there is a few inches of powdered sugar on the floor; the walls are covered with sugar dust. You can see a small motor or a motor to the right-hand side, and even the conduit feeding that motor is covered with sugar.

The photo on the right is another view of the area, and the powdered sugar piles on the floor is many inches deep; approximately, you know, 12, 14, 16 inches, and again the equipment is totally coated with powdered sugar from leaks in the conveyor systems.

Now, this, in and of itself, is not

necessarily dangerous, but if it is lofted, as we saw in the demonstration, and if there is an ignition source, then a tremendous explosion could occur, and this clearly is an unacceptable existing condition for this type of accumulation.

Density-wise, the lofted dust, just to give a reference point, is if the dust is so dense that you cannot see three or four feet in front of you, that is when you have -- when we're talking sugar dust, that's the type of hazard. Just having dust floating in the air may be even annoying, but a little isn't sufficient to burn. But when it is very dense and when you have a large quantity, that's when the hazard exists, the real hazard exists.

Another example of dust accumulation and granulated sugar accumulation is shown in this October 2006 series of photos. This is granulated sugar. The photo on the left is a screw conveyor. We're looking upward at the ceiling. The motor is covered with sugar dust

that was generated from moving granulated sugar and leaks of granulated sugar out of the conveyer, and the conveyer itself actually has powder or dust from the sugar adhering to the side. And the picture shows dust accumulations on the horizontal braces and brackets, and across the top right corner is a conduit, and you can see literally a layer of sugar there.

The photo on the right is granulated sugar. It's a couple feet deep in this view. It's spilled out periodically from the screw conveyors. And, again, even though it's granulated sugar, there's significant dust that results from granulated sugar spilling and moving the sugar as shown on the motors and horizontal surfaces on that conveyor.

The solution to the spill, at least on that granulated sugar, is to collect it and reprocess it back in the refinery. It is not technically waste product. So it was a nuisance, but it was a continuous problem, as the photo evidenced that we obtained from the

records in the facility.

In the arena of hazard awareness for the company, the workers, the contractors, there were a number of documents we reviewed. And again there's a telling story of even the understanding of a hazard. Sugar and cornstarch material safety data sheets, MSDSs, identified the explosion hazard for sugars manufactured at this facility.

In fact, the Imperial Sugar MSDS for granulated sugar dated October 2001 specifically stated that sugar dust accumulations are explosive. We also have the MSDS for their powdered sugar, and it had the same warning for the users of sugar. So there was a knowledge of the explosive characteristics of sugar and sugar dust.

Our conclusions, as per our investigation team, is that management did know sugar dust could be an explosion hazard. We saw internal correspondence dating from the 1960s that identified the explosion hazard in Port

Wentworth.

Now, that's a long time ago, but we saw documents through the years of that type of situation. And also I want to note that in 1998 Imperial Sugar actually had a mill explosion in Sugar Land, Texas, that injured a worker. That was just under ten years before this incident.

Just another couple of photos. These photos are also dated October 2006. The photo on the left is the powdered sugar mill room. They took granulated sugar, mill it to powder form to make powdered sugar, and the picture says it all. There's dust everywhere; there's deep accumulations of powdered sugar.

The photo on the right happens to be the conveyor under the western-most silo in the silo tunnel, as I mentioned at the beginning of the presentation, and that's a granulated sugar transfer system; yet there is sugar dust accumulated from the transfer and the leaks of granulated sugar. So sugar dust did exist in this silo tunnel for many years.

Talk briefly about incident history at Port Wentworth. I mentioned the incident in 1998 at Sugar Land, but we'll look now at Port Wentworth. Workers reported and records showed, both from the fire departments, that there were small fires and the facility. And there was even dust collector blowouts; in other words, a dust collector -- some event occurred, and it blew a panel out. This was amidst accumulations of all this combustible dust. This dust generally, we concluded, was a constant problem; these large accumulations were constant problems that required continual cleaning.

And there were dust collectors -- there were fires and blowouts that did occur. And in fact, in late January 2008, less than three weeks before the February explosion, a dust collector blowout occurred on the roof of the south packing building. It did not result in any injuries, and there was no fire.

The collector was mounted on the roof, it had blowout panels, and it did what it

was supposed to do. That's what it was -- that was one of the few pieces of equipment that were really designed -- installed at that facility to handle an event. They had a malfunctioning piece of equipment, and it blew out. That dust collector happened to be out of service the night of this explosion.

We also saw worker injury reports in 2006, 2007, that identified significant sugar accumulation that caused slippery walking surfaces. Water was used to clean some of the floors; you get sugar and water together and it became slippery. And there were records of injury reports where there were inches of accumulated sugar that resulted in these conditions.

We also looked in particular at a facility inspection that occurred in late 2007 in I believe December that identified tons of spilled sugar routinely occurred in the packing buildings.

And in fact Imperial had started to

take action. This particular inspection was the result of their beginning to be concerned with all the excessive spilling that was occurring. And the records identified throughout -- in a number of locations in the building that there were tons spilling on a monthly basis.

Yet in more than a hundred operating years at this facility -- or approximately a hundred at this facility, and certainly when you add their Sugar Land Facility and their Gramercy facility, there was never a catastrophic dust explosion that resulted in fatalities or major injuries or major facility damage. They were able to operate that many years until the event occurred in February 2008.

The team reached a conclusion on what we believe is the sequence of events under the silo tunnel that led to this incident. And I just want to preface this video animation. The aerial is based on actual photographs of the facility as that earlier animation showed; the focus is going to be on the silo tunnel

underneath the silos, the 80-foot-long steel belt. At the tail end of the animation, or right after the animation, there are two security videos that we'll show.

The first security video was a capture of the initial explosions that occurred. The video camera was about two miles south of the facility looking north from the Georgia Ports Authority.

The second video -- and focus on the top center of that picture because it comes up fast. The second video occurred -- security video -- is 15 minutes into the incident, and yet there are major and violent eruptions coming from the facility. And that was from a camera approximately a half mile south, at the PCS phosphate facility.

(Whereupon, a video was played.)

MR. VORDERBRUEGGEN: It was a devastating and tragic incident. Just to show how it progressed, or the end result, this is how the facility looked before the incident, and

the result of the sugar dust -- that was the end result.

As part of our investigation and interviews -- as I mentioned, we did interview executives and managers within the facility, an important observation from one company executive, "I am amazed at the extent of destruction. I understood the hazard, understood the risk, seen dust collect to an extent and had flashes and then before seen explosion suppression systems that worked, but never imagined the propagation that occurred at Port Wentworth."

The consequences of this event are pretty well known, but I will summarize them. The human consequences were terrible; there were 14 fatalities. Eight of those workers died at the scene. Six other workers succumbed to their burn injuries, some of those many months after the incident, the last dying almost six months after the incident occurred.

Thirty-six injured workers

ultimately survived this terrible event. Thirteen of those 36 had been treated at the Joseph M. Still Burn Center in Augusta, Georgia; 23 were treated in Savannah-area hospitals. And certainly some of those injured workers have life-altering, major conditions.

The physical consequences were also significant. The silos and towers around the silos were destroyed. The south packing building, as you can see in this photo, was destroyed. The palletizer building, which was to the left of the south packing building, was destroyed as the blast blew the roof off, and it was essentially gutted by fire.

The refinery portion also sustained major damage. It was not totally destroyed, but there was major damage as the explosion and fires progressed back into the refinery area.

Yet -- and this was troubling to our team -- three weeks after the Port Wentworth explosion, OSHA visited the Gramercy, Louisiana, facility, and they found what they believed to

be imminent dust hazard dangers during that inspection, and it was only as a result of that inspection that Imperial Sugar made the decision to discontinue those operations at Gramercy until they were fixed.

So even after this tremendous explosion, there was still lack of understanding of how dust and why dust occurs, and why, in a hundred-plus years of operation, did this event occur? It was a hard thing to understand.

That concludes the discussions on the history and or determination of what occurred, and I will turn it back over to Chairman Bresland for questions to the team.

MR. BRESLAND: Thank you, Mr. Vorderbrueggen.

We'll take this opportunity now to allow the board members to ask some questions of the investigation team, and we'll start on my left with Mr. Wright.

MR. WRIGHT: Thank you, Mr. Chairman.

Mr. Vorderbrueggen, let me ask you your professional opinion. Had the installation of the stainless steel cover on the conveyor system included a dust collection or mitigation system, do you believe this tragic event might have been prevented?

MR. VORDERBRUEGGEN: The short answer is it probably would not have occurred. Dust collection -- if that collector had had the dust removed -- or that conveyor -- dust had been removed before it built to explosive concentrations, there wouldn't have been an explosion.

The ability to put mitigation, such as blast panels, in that system was virtually impossible because of its physical location, buried in the center of the structure, but just a dust collector might have prevented this event.

MR. WRIGHT: Thank you. That's all I have at this time.

MR. BRESLAND: Board member Wark.

MR. WARK: Thank you, Mr. Chairman.

First of all, I would also like to extend sympathies and condolences to the victims of this tragic event. I actually deployed with the team and was flying over that in a little helicopter while it was still burning, and it was devastation that I had not seen in a long time.

I'd also like to thank the team for an outstanding job in their investigation.

Approximately how many emergency responders were present at this event, and how did the reporting agencies interact? Was the response -- how would you characterize the response?

MR. VORDERBRUEGGEN: We never did a head count, but there were, I would say, at least 200 emergency response personnel on scene and that may be an underestimate. Again, police departments were involved in traffic control, crowd control.

Port Wentworth was devastated by

this event. The Bureau of Alcohol, Tobacco and Firearms was on scene pretty much first; they had first control of that.

When we arrived on scene, we started that coordination activity. and it went extremely well. We had extreme cooperation from the incident commander, the fire chief of Port Wentworth, Chief Long; the state fire marshal, we coordinated with him.

And then it took a couple of days before the Bureau of Alcohol, Tobacco and Firearms released the facility, and then we moved in and, again, it was total cooperation, including Imperial Sugar.

I have to give them credit. They worked hard to accommodate our needs. We pushed them hard when we needed to. OSHA was involved; we coordinated with OSHA.

So I would offer it was probably the best incident-investigation cooperation I've had, and it was certainly the largest.

That's all I have.

MR. WARK: That's all I have, Mr. Chairman.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: Thank you, Mr. Chairman.

John, I wanted to ask. You talked sort of this level of awareness by the company, but then there wasn't like follow-through, it seems. Had they done any testing, that you found, of the sugar, in terms of explosivity or the minimum ignition temperatures needed or any of those kinds of tests that one might do on a powder that might be combustible?

MR. VORDERBRUEGGEN: To our knowledge, neither Imperial Sugar nor their predecessor at this facility, Savannah Foods, had ever conducted any laboratory analyses. And there are standard test methods -- they're detailed in our draft report -- on the four or five key characteristics that are used to predict the ignition energies, the density of

airborne sugar that -- the minimum explosible concentration, it's called -- and other key parameters.

The words on their material safety data sheet and their acknowledgment of explosible considerations are derived from the records and the history of knowledge in industry, which dates back to the early '20s. There was knowledge that sugar dust was explosible.

MR. VISSCHER: How -- I think it was in the animation suggested that the investigation came to the conclusion that the most likely scenario was that the source of the ignition was an overheated bearing.

How -- I guess two questions. One is how hot roughly -- what would be the temperature required to ignite the sugar dust at Imperial? And, second, would there have been a way to determine this malfunction, the bearing malfunction?

MR. VORDERBRUEGGEN: To answer the

first question on ignition temperatures, the thermal contact temperature for sugar and sugar dust is approximately 700, 750 degrees Fahrenheit, 300-plus degrees Celsius. And airborne sugar, or the dust that's airborne, actually the temperature drops a little bit for that.

The other interesting characteristic of sugar dust is if there is smoldering sugar -- let's say, the bearing got to that temperature -- a flame has not occurred but the sugar is smoldering. Well, post-incident testing, primarily by Imperial Sugar -- and there is some literature that we reviewed that also discussed this -- but Imperial conducted extensive tests on their own products, found that the vapors, the fumes, that are liberated from a smoldering sugar pile are very flammable in and of themselves.

So if a bearing had been hot enough to cause the sugar to liberate this type of vapor into that chamber, that would have made

the situation worse. It would have taken less sugar dust to do what we saw. The reason we concluded it was most likely a bearing -- and again, it's always difficult to determine what the actual ignition source is on any major event, especially when there's so much devastation. The fire's burned so long -- some things were just burned essentially beyond recognition.

But there wasn't a lot of fire that existed in the tunnel itself. There was scorching, and at one end of the tunnel it was burned out very bad because of the amount of sugar pile at the discharge end. But there really wasn't much in the way of ignition sources. There's metal-to-metal contact, sliding metal contact could be, but it takes a fairly high velocity for that to occur. The literature -- and our conclusions was based on the literature on that phenomena.

We didn't think that the traveling -- it was a steel belt, but we didn't

think that traveling belt was the source. There were only a few electrical devices that were enclosed with that -- when they enclosed the unit, and they were related to alignment switches on the belt itself. And it turns out, in post-incident examination and some photographic review of those, that those switches -- three of those switches survived; one was totally burned out. But we concluded and we agreed with Imperial that those switches were rated -- we saw the labels; they were rated explosion-proof; the photos indicated they were sealed.

So we ended up concluding that an electrical spark was not likely. Static was not really credible, because this is all steel; it was all grounded, things like that. So the final thing is heat. There were dozens of bearings that support that 80-foot-long steel belt.

Operators did tell us that -- and there were other bearings in other equipment as

well throughout the facility, and there were records of bearings that got hot enough to where they caused fires with flame.

And somewhat through a process of elimination and the fact that there were dozens of bearings, that's really the only logical thing. And the blast patterns clearly showed that there was a major explosion in that device that essentially started in the center and went outward along its 80-foot length. There was no logical progression that would have said any other ignition. So it was preponderance of evidence, to close the question.

MR. VISSCHER: Did you -- when they put the covers over the conveyor belts -- I guess you indicated, or the animation indicated, that the reason for that was really to keep contamination from getting on the sugar. Is that correct?

MR. VORDERBRUEGGEN: Yes. This particular area -- although it had limited access, it was final food product, and the

rules, the good manufacturing practices and the Food and Drug Administration and everybody else that regulates the food quality, expects certain cleanliness, et cetera. And the covers were installed because of the recognition that the sugar could be contaminated, either intentionally or unintentionally, in this tunnel.

So the decision was made in early 2007, about a year before the event, to cover the conveyor. The actual covers were not finished until, I believe it was, May 2007, so dozens of years of operation without covers, nothing ever -- you know, they never had a catastrophic event. The only change we were able to identify in this facility that could have led to something to consider harder was the addition of these covers in May, so it was less than seven months before the explosion.

MR. VISSCHER: You kind of led toward answering this question already, but have we learned anything about the explosivity of

sugar and sugar dust that wasn't known before?

You talked about the fumes, for example, from -- that are possible, being given off that might actually lower the ignition temperature. I guess that's one thing that might not have been recognized before. But has this expanded our -- or has was most of this common knowledge, should have been common knowledge before?

MR. VORDERBRUEGGEN: In general, the explosivity of sugar dust is common knowledge, and it dates back to the '20s, 1920s. One thing I thought was notable was that granulated sugar is just about as dangerous as sugar dust if the granulated sugar can be lifted into the air and ignited. The difference is it's hard to ignite because the grains are so large, and because the grains are so large it doesn't like to stay in the air. It immediately falls.

But we concluded that really the progression of the event and why it ultimately was so devastating was because of the spilled

granulated sugar in the work areas, and even when some of the equipment might have broken, it might have released sugar. But now you're raining granulated sugar down into the fire, and it was not much different than sugar dust.

The only learning -- and, again, I will give Imperial credit for this because they have conducted studies -- is, although we were aware and we report on this concept of the fumes liberated are also flammable and make the hazard worse, Imperial has conducted extensive studies on that as a result of this event, and they would report it's probably more significant than the literature has presented.

MR. VISSCHER: I just want to add my thanks to the team for the extensive investigation and thoroughness of your investigation.

Thank you, Mr. Chairman.

MR. BRESLAND: Mr. Vorderbrueggen, in your investigation was there any evidence that in the facility there was what you'd

consider to be sort of standard explosion-prevention devices such as emergency relief vents or explosion-suppression systems, where if there was an explosion a piece of equipment there would be a suppressing agency immediately pumped into that piece of equipment?

MR. VORDERBRUEGGEN: In all of the equipment we examined as the facility was dismantled as well as even the areas where they did not actually do dismantling, we saw no evidence of suppression systems that would kick in or take action in the event of an ignition of some sort.

As I mentioned earlier in the presentation, the dry dust collectors on the roof of the south packing building -- I believe there are five of those; there might have been six. They're large, cylindrical devices. The dusty air blows into them; there's cloth bags that captures the sugar dust. Air exits out over the roof, and the sugar dust is knocked off the bags and returned for reprocessing.

Those devices actually had explosion vents integral with the device. And in fact that's why the incident that occurred two or three weeks before safely vented out over the roof of the building and no fire ensued.

The device had to be repaired or replaced, but it did what it was intended to do. There may have been a few of the bucket elevators -- they had some newer bucket elevators. There may have been some explosion panels on those devices, but they were farther away from the area, at least the ones that survived that we were able to look at. And we really don't have any opinion on the suitability of those protections.

MR. BRESLAND: One other question. It always seems surprising, and maybe it's surprising to the audience as well, that the sugar that we all put in our coffee in Starbucks in the morning has a potential for a catastrophic explosion.

Can you give examples of some other

materials that would have an equivalent explosivity as the very fine sugar dust that we saw here?

MR. VORDERBRUEGGEN: Certainly cornstarch. And in fact they use cornstarch at Imperial Sugar. There is a small amount of cornstarch in the powdered sugar you buy in the store. Cornstarch actually is a little more energetic in some of those test parameters. Cocoa powder is highly energetic. And, again, some of the old literature back in the early days, even before these standards were developed, offered that of the food products, sugar, flour, cocoa and maybe a few others, they argue that sugar dust might be the worst. And, of course, flour dust and -- any grain that creates a dust can result in explosible concentrations of that dust.

MR. BRESLAND: Okay. Thank you. And I'll turn the presentation back to you.

MR. VORDERBRUEGGEN: Okay. Thank you, Chairman Bresland, Board members.

At this point in time I will ask Ms. Sciallo to come up to the podium and discuss the finding and causes that we concluded were involved in this incident.

MS. SCIALLO: Thank you. Good evening. As Investigator Vorderbrueggen stated, I will list and briefly describe the Imperial investigation team's findings.

After reviewing Imperial Sugar Company documentation and interviewing employees, the team has found that Imperial Sugar and the sugar industry have long known of sugar dust hazards. Port Wentworth facility personnel were aware of the explosion hazards and prevention methods but did not take adequate action such as eliminating sugar leakages from equipment, appropriate sizing the dust collectors and improving housekeeping practices.

Based on employee interviews, previous reports from the Garden City Fire Department and a review of internal incident reports, the Port Wentworth facility had a

history of sugar fires, but none caused a catastrophic dust explosion. These near-miss events were relatively minor incidents, lulled management and workers to believe that a dust explosion of this magnitude would not occur.

As conveyed in the animation, the CSB found that the presence of the new steel belt enclosure created a confined space where sugar could accumulate to the minimum explosible concentration, or a concentration where sugar dust in air could ignite. The enclosure was not equipped with explosion vents that would relieve a buildup of pressure before gaining enough energy to propagate into a more powerful explosion.

The OSHA Combustible Dust National Emphasis Program, or NEP document, was distributed to management and supervisors, but prompt action to remove the sugar dust hazard was not implemented. The National Emphasis Program or NEP document was provided to supervisors and management in December 2007, two

months before the incident.

The team also found that sugar leakages from equipment, undersized dust collectors, and inadequate housekeeping practices resulted in large accumulations of sugar and sugar dust, which fueled the second explosions. Housekeeping practices in place at Port Wentworth at the time of the incident focused mostly on food quality, sanitation, and slippery walking surfaces.

Zurich Services Corporation is the Port Wentworth property risk insurer, and risk engineers from Zurich conduct an audit of the facility annually. In May 2007 Zurich Services conducted an audit at the Port Wentworth facility but did not address combustible dust hazards.

Two reports were generated as a result of this audit. A nine-page report was provided to a Imperial management, and a more detailed 32-page report of the audit was distributed internally at Zurich. The internal

report for review by Zurich only spoke to dust management.

The report provided to the company, or Imperial, did not mention dust. Zurich has comprehensive training materials on combustible dust developed by senior Zurich risk engineers, but this training material is not distributed to their clients.

The team identified seven causes related to this incident, and I will list them in the next portion of this presentation.

Airborne combustible dust accumulated in the newly enclosed steel belt assembly under the middle and east silos. An overheated bearing most likely was the ignition source for a primary dust explosion in the tunnel under the silos. Overheated bearings were an occasional problem at the Port Wentworth facility. For example, in April 2001 the Garden City Fire Department responded to the refinery to suppress a fire that was caused by an overheated bearing on a conveyor belt.

This next slide shows two photos taken under the silo after the explosion. These are taken from standing under the middle silo, looking to the east in the left photo, and then looking to the west in the right photo from the same location. And these photos were actually taken two days after the incident.

I just want to take a moment to point out some equipment. The stainless steel frame which had front and side panels to fully enclose the belt, as pointed out now, and also the belt itself, the steel belt itself, which flowed west to east under the middle and east silo, and above is the silo discharge port where the sugar flowed from the silo; in this case, the middle silo to the steel belt; and finally, the crumpled panels that covered the belt were blown in both directions, east and west, and they're being circled right now.

Sugar conveying equipment such as screw conveyors were not designed or maintained to minimize sugar or sugar dust leaks into the

packing areas.

A lack of proper housekeeping resulted in significant accumulations of combustible sugar and sugar dust throughout the facility.

The accumulated sugar present on the floors, overhead beams, and other flat surfaces in the packing house fueled secondary explosions and fires which spread throughout the packing building. All fatalities most likely resulted from secondary explosions and fires.

And last, emergency evacuation plans were inadequate. Investigators found no evidence of a formal process for evacuation drills. Prompt work notification of an emergency was also inadequate. The only way to notify the workforce of an emergency in the facility was through radios or phones. There was no facility-wide audible or visual alarm system.

And now Investigator Vorderbrueggen will return to the stand to discuss regulatory

action.

MR. VORDERBRUEGGEN: Thank you, Ms. Sciallo.

I just want to make a note on the question on the number of emergency responders. My colleagues slipped me a note. It was in excess of 370 who responded.

In the regulatory arena, in 2003 the Chemical Safety Board investigated three major dust explosions: West Pharmaceuticals in North Carolina killed six workers; CTA Acoustics in Corbin, Kentucky, killed seven workers; and Hayes Lemmerz in Huntington, Indiana, killed one worker in an aluminum manufacturing facility. And those three reports are on our website.

As a result of those three incidents, the Board commissioned what is call the Combustible Dust hazard study, and that hazard study was issued in November 2006, more than two years before the Port Wentworth incident.

I want to point out one specific

item out of that report. In the dust study the Board made a recommendation to OSHA to issue a regulation to prevent combustible dust fires and explosions in general industry, meaning food processing, sugar, and those areas and based that regulation on the current National Fire Protection Association Dust Explosion Standards. As of the date of the explosion in Port Wentworth, OSHA had not acted on that recommendation.

There were some actions involving that incident as well as even a few that preceded the incident. As Ms. Sciallo mentioned, there is a National Emphasis Program compliance directive that OSHA prepared, and they issued that in October 2007 and that was in fact distributed within the Port Wentworth facility in late 2007.

It's important to note, however, that the National Emphasis Program Compliance Directive is a document, and the program itself is an OSHA program. The directive is a document

that is provided to the compliance officers who conduct facility inspections, and it gives the compliance officer guidance on what to look for, how to look for it, and how to interpret the OSHA standards or rules that might be applied to what they observe.

As a result of the Imperial incident, the compliance directive was reissued in March, about three weeks later. And I will read from the executive summary of that compliance directive, the revision: "As a result of a recent catastrophic accident involving a combustible dust explosion at a sugar refinery, OSHA has decided to intensify its focus on this hazard."

That reissuance included augmenting the number of facilities that headquarters was directing the regional offices to perform inspections. And I believe it augmented the schedule for those to occur. Imperial Sugar was not yet -- at least Port Wentworth had not been inspected by OSHA for this National Emphasis

Program.

One other result of the Imperial Sugar incident from OSHA was that they issued a fact sheet in March 2008, right at the same time of the reissuance of the NEP, and it was titled, Hazard Alert, Combustible Dust Explosions. It's available on their website. It's still there today. They actually have a website that focuses on dust and that was addressing issues related to combustible dust.

Recently, actually April 29, 2009, this year, OSHA has announced a plan for a proposed rulemaking on combustible dust. And in fact the advanced notice of proposed rulemaking, or what is called an ANPR, that draft has been undergoing review by OSHA management and is near completion, as we understand it. So there is some movement in OSHA on this arena.

Moving over to the State of Georgia, prior to this incident, the State of Georgia did not have regulations specifically addressing combustible dust and managing that dust,

designing to prevent releases, et cetera.

But as a result of the Port Wentworth incident, the Georgia Office of Insurance and Safety Fire Commissioners enacted an emergency combustible dust rule. It was good for, I believe, 120 days, and it's been reenacted every 120 days since it was originally promulgated.

It requires, or it will require, effective January 1, 2010, that all companies that deal with combustible particulate solids, as determined by testing, must register with the state. They must submit updated material safety data sheets with the information on the characteristics, the hazard characteristics, of that dust. And they must create written emergency evacuation plans.

Furthermore, the emergency regulation requires the companies to train their employees on those hazards and on the evacuation procedures and conduct monthly refresher training to all employees and the contractors.

And finally there are provisions that if the Fire Marshal's Office or other state investigators identify violations, that the violators are subject to civil fines and enforcement action, including shutting down the operation.

Are there any questions from the Board on either the findings and causes or regulatory impact?

MR. BRESLAND: Thank you, Mr. Vorderbrueggen.

Board member Wright?

MR. WRIGHT: Thank you, Mr. Chairman.

Early on you led me to believe that a lot of the dust had accumulated due to complacency or a feeling that nothing can happen here -- or hasn't happened here, historically.

Would you agree with me that companies have a duty to proactively seek out hazards and to address and/or mitigate them in order to keep their facilities and their

personnel safe?

MR. VORDERBRUEGGEN: I would agree with that, and there are certain laws on the books that lead to that.

MR. WRIGHT: Thank you.

That's all I have, Mr. Chairman.

MR. BRESLAND: Board member Wark.

MR. WARK: No more questions, thank you.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: No questions at this time.

MR. BRESLAND: I just have one question about the insurance inspection. I'm a little puzzled as to why that insurance company that probably finished up with a significant dollar loss didn't recognize this potential hazard when they did a survey or an investigation of the facility, I guess about a year before the explosion happened. Any thoughts on that?

MR. VORDERBRUEGGEN: I'll let Mr. Banks respond to that.

MR. BANKS: In conversations with Zurich, there was an indication that the inspection was concerned primarily with the potential for damage to the facility through hurricanes and the such, so there was an emphasis on insuring that the facility could withstand this type of onslaught.

The inspection itself was done with a checklist and a process that, to the best of their ability, was intended to capture any risks that the facility would come under.

MR. BRESLAND: Okay. Thank you, Mr. Banks.

I'll turn it back to Mr. Vorderbrueggen to continue.

MR. VORDERBRUEGGEN: Okay. With that, I will ask Mr. Johnnie Banks to come up and present the recommendations to the Board for their consideration.

MR. BANKS: Thank you, Mr.

Vorderbrueggen.

For the next portion of our presentation I'll be presenting the recommendations developed in the course of conducting the investigation by the team. But prior to doing so, for the benefit of our audience, I'll give a quick overview of our agency's recommendation process.

The recommendations are the primary tools to motivate implementation of safety improvement. These recommendations address specific issues that caused the incident to occur and are aimed at preventing recurrence of similar incidents by identifying management system changes.

The CSB communicates to recipients, and works to ensure successful completion of and adoption of the recommendations. The recommendations are directed not only to the owners of the affected facility but also to industry, government, trade associations and trade unions.

The status changes of recommendations require a formal vote of our Board. The status of recommendations for this an other cases that the CSB is investigating can be tracked at www.csb.gov/recommendations.

Now, the first series of recommendations are directed to the Imperial Sugar Company. And in conjunction with rebuilding, design, and operation of the new Port Wentworth facility, the CSB recommends that Imperial Sugar Company apply the following NFPA standards: NFPA 61, The standard for the prevention of fires and dust explosions in agricultural and food processing facilities; NFPA 499, Recommended practice for the classification of combustible dust and hazardous classified locations for electrical installations and chemical process areas; NFPA 654, The standard for the prevention of fire and dust explosions for the manufacturing, processing and handling of combustible particulate solids; NFPA Handbook, Electrical

Installations in Hazardous Locations; and finally, NFPA 70, Article 500, Hazardous classified locations.

The next recommendation for the Imperial Sugar Company is to conduct a comprehensive review of all existing Imperial Sugar Company manufacturing facilities against the standards listed in Recommendation R-1 and implement identified corrective actions.

The next recommendation to Imperial Sugar Company is to implement a corporate-wide comprehensive housekeeping program to control combustible dust accumulations that will ensure sugar dust, cornstarch dust, or other combustible dust does not accumulate to hazardous quantities on overhead horizontal surfaces, packing equipment, and floors.

The next recommendation to Imperial Sugar Company is to develop training materials that address combustible dust hazards and train all employees and contractors at all Imperial Sugar Company facilities. We also ask that they

require periodic annual refresher training for all employees and contractors.

The last recommendation to the Imperial Sugar Company is to improve emergency evacuation policies and procedures at the facility and specifically to install an emergency alert alarm system in the facility and to require routine emergency evacuation drills and critiques.

Now, the next series of recommendations are to trade associations that the Imperial Sugar Company and its insurer Zurich are affiliated with.

The first of these recommendations are directed to AIB International, or the American Institute of Bakers. AIB is a corporation founded by the North American wholesale and retail baking industries in 1919 as a technology transfer center for bakers and food processors.

To AIB International, we recommend that they incorporate combustible dust awareness

into employee and member companies' training program, such as the safety and health management systems training course.

Also, to AIB, to look at the combustible dust characteristics, the best practices for minimizing dust accumulation and safe housekeeping practices. Additionally, to AIB International, we ask that they add specific combustible dust inspection requirements and metrics to the food contact packaging facility audit procedures.

The next recommendation recipient is the American Bakers Association, or ABA. ABA is a Washington, D.C.-based trade association that represents the interests of the wholesale baking industry before the U.S. Congress, federal agencies, state legislatures and international regulatory authorities.

To the ABA, we recommend that they actively promote improvements in combustible dust hazard awareness and control throughout the wholesale baking industry by publishing

bulletins or safety guides that address combustible dust characteristics, best practices for minimizing dust accumulation, and safe housekeeping practices.

The next recommendation is to the Risk Insurance Management Society, Incorporated, or RIMS. RIMS was founded in 1950 and is a nonprofit membership organization of risk insurers for members such as Zurich or FM Global. This recommendation to Risk Insurance Management Society, Incorporated, is to required member companies to develop and implement combustible dust hazard awareness training for all facility audit personnel and to incorporate combustible dust hazard identification in the audit protocols.

The final recommendation is to Zurich Services Corporation, which, as Ms. Sciallo pointed out earlier, provided the risk insurance to Imperial Sugar Company. That recommendation is to ensure that all risk engineers are trained in the hazards of

combustible dust and that refresher training occurs at regular intervals and that they provide a copy of combustible dust hazard awareness training materials to clients who deal with combustible dust.

That concludes my portion of the presentation. I'll turn the proceedings back over to Mr. Vorderbrueggen. Thank you.

MR. VORDERBRUEGGEN: Thank you, Johnnie.

Chairman Bresland, any questions or comments?

MR. BRESLAND: Thank you, Mr. Banks. Thank you, Mr. Vorderbrueggen. This section of questions would reply to the recommendations, and we'll start again with Board member Wright.

MR. WRIGHT: I have no questions. Thank you, Mr. Chairman.

MR. WARK: No questions.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: Thank you, Mr.

Chairman. I'd like to add a recommendation to the ten that have been listed and for that purpose move the following recommendation be added to the draft report.

It will be a recommendation 10.6 to the Occupational Safety and Health Administration. The wording would be, "Proceed expeditiously, consistent with the Chemical Safety Board's November 2006 recommendation and OSHA's announced intention to conduct rulemaking to promulgate a comprehensive standard to reduce or eliminate hazards from fire and explosion from combustible powders and dust."

So I move the adoption of that as an amendment to the recommendations in the draft report.

MR. BRESLAND: Thank you, Mr. Visscher.

Do we have a second for that motion?

MR. WRIGHT: I second the motion.

MR. BRESLAND: Thank you, Board member Wright. The motion spoken by Board

member Visscher is 10.6 to the Occupational Safety and Health Administration, "Proceed expeditiously, consistent with the Chemical Safety Board's November 2006 recommendation and OSHA's announced intention to conduct rulemaking to promulgate a comprehensive standard to reduce or eliminate hazards from fire and explosion from combustible powders and dust."

Do we have any discussion on this motion from the Board members?

Mr. Visscher?

MR. VISSCHER: Just briefly. The presentation by Mr. Vorderbrueggen described the fact that in November 2006 the Board made a recommendation to OSHA to do a comprehensive standard -- general standard on combustible dust.

That's since been endorsed several times in testimony before Congress, by Chairman Bresland, by Interim Chairman Wright when he was the interim chairman made -- been very clear about that position. And again, as John

mentioned during the presentation in April of this year, OSHA, and the Secretary of Labor actually, announced that they would initiate a rulemaking on combustible dust.

So I think that our position, the Board's position, on this has been clear. And this reiterates that and also underlines it to the Occupational Safety and Health Administration, also asks them to move expeditiously on it.

The rulemaking process is a cumbersome one in the federal government for many good reasons, and sometimes for not good reasons, but we're asking that they move expeditiously on this in light of this obvious -- this tragedy.

MR. BRESLAND: Board member Wright.

MR. WRIGHT: I have nothing further.

MR. BRESLAND: Board member Wark.

MR. WARK: I have nothing further. Thank you.

MR. BRESLAND: I guess, just

following up on Board member Visscher's comment, I think the important word in here is "expeditiously," so that we are recommending to OSHA that they do move as quickly as possible to develop the combustible dust standard. However, having said that, I don't think there is any more opportunity or any more discussion, so I'll read the motion again, and I call for a vote.

The motion is to add Recommendation 10.6 to the Occupational Safety and Health Administration, "Proceed expeditiously, consistent with the Chemical Safety Board's November 2006 recommendation and OSHA's announced intention to conduct rulemaking to promulgate a comprehensive standard to reduce or eliminate hazards from fire and explosion from combustible powders and dust."

We call for the vote.

Board member Wright.

MR. WRIGHT: Mr. Chairman, I vote in favor of the amendment.

MR. BRESLAND: Board member Wark.

MR. WARK: Yes, I vote in favor.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: Yes.

MR. BRESLAND: And I vote yes.

The motion has passed, and we're adding that recommendation to our report.

Do we have any other discussion on the recommendations? Board member Wark.

MR. WARK: No, I have nothing.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: No.

MR. BRESLAND: With that, we will move on to the public comment section of the meeting. As you came in, there was an opportunity for the public to sign up if they did want to make comment. We have one person who is signed up; however, that does not preclude people from standing up and making a comment without having signed in. And we will certainly welcome comments.

We would also remind you that we are limiting the comments to three minutes and remind you that the comments should be directed to me as the chair and not to the investigators. And if there is an issue that could be responded to by the investigators, I will pass that on to the investigators and allow them to make a response.

Please, when you stand up, please state your name and your affiliation. And the first person I have here is Ralph Clements. If you could spell your name also, that'll be very helpful to the court reporter.

MR. CLEMENTS: Thank you, Mr. Chairman, and members of the Chemical Safety Board. My name is Ralph Clements, C-L-E-M-E-N-T-S. I am vice president of manufacturing for Imperial Sugar.

I've been with Imperial Sugar since September of 2008. On behalf of the company I would like to first, again, express our deepest sympathy to those who were affected by the

accident at the Port Wentworth facility and in particular those who lost loved ones and those who are still suffering from injuries today.

I'd also like to acknowledge the heroic efforts of so many people in this community who responded to this tragedy: the fire and police and other emergency personnel who first responded at the scene, the medical personnel who saved lives and comforted the injured, the many, many volunteers who contributed in so many ways to the recovery. We again thank you for a helping hand during this difficult time.

Mr. Chairman, we appreciate the opportunity to attend this public hearing and to learn more about findings and recommendations set forth in the final investigation report. This has been a very valuable and helpful process.

We appreciate the extraordinary efforts of the Chemical Safety Board's investigators. We believe their efforts will

accomplish what everyone in this room wants to acknowledge: to increase awareness in the industry about hazards of combustible dust and prevent this kind of catastrophe from ever happening again.

To that end, our company has fully adopted the recommendations directed to Imperial Sugar made by the CSB in the final report. While some projects relating to the recommendations have not been fully completed during the rebuilding process at Port Wentworth, we are confident that we will meet or exceed all of the recommendations prior to the operation's date it will resume.

In fact, as we rebuild the Port Wentworth facility, we are working closely with the top experts in the country in the areas of combustible dust and general safety, and we intend to set the standard for our industry. The employees at our Port Wentworth facility will be working in what we believe will be the safest facility of its kind in the country.

Finally, I must emphasize that we're not only working to set a standard for the industry, but we are sharing the lessons we have learned with other companies throughout the United States and North America. Our company leaders have already made presentations at several industry conferences, and we intend to do many more in the future. Our peers in the industry have greatly appreciated and benefitted from the lessons that we can share with them.

Again, thank you for the opportunity to participate in this hearing, and we thank the Chemical Safety Board for the valuable information presented in this forum.

MR. BRESLAND: Thank you, Mr. Clements.

Do we have anybody who would like to make a comment, make a statement?

We have -- are you coming up to make a statement?

No. Okay.

MS. PHELPS: Would it be appropriate

to ask a question?

MR. BRESLAND: Will you come to the microphone, please.

MS. PHELPS: Is it appropriate to ask --

MR. BRESLAND: Yes, it is. Yes.

MS. PHELPS: I am Lou Phelps with Savannah Morning News. I have a question. We were wondering, in your investigation -- this is addressed to the Chairman of the investigative board.

Was a complaint filed by an employee at the time it was filed with OSHA in the winter of 2007, a month after the regulations were sent out -- was that reviewed in this investigation, and what was the conclusion of OSHA's work in investigating the employee complaint filed November of 2007, three months before the explosion?

MR. BRESLAND: I will ask Mr. Vorderbrueggen if he has any knowledge of that complaint.

MR. VORDERBRUEGGEN: Mr. Chairman, we don't have any specific recollection of such a complain that would have been filed with OSHA. Of course, those types of complaints would be handled through OSHA, and so I -- we have not seen any of that.

MR. BRESLAND: Do we have anyone else who'd like to make a comment or ask a question?

(Pause.)

MR. BRESLAND: Going once.

(No response.)

MR. BRESLAND: Okay. With that, that's the end of the public comment session, and I'm now going to ask for a motion to approve the report.

Board member Wright?

MR. WRIGHT: Mr. Chairman, I move to approve the report as amended.

MR. BRESLAND: Now, do we have a seconder?

MR. VISSCHER: Second.

MR. BRESLAND: And the motion is -- would you like to read the motion, Mr. Wright?

MR. WRIGHT: Certainly. I move to approve the CSB Investigation Report and recommendations as amended (No. 2009-05-I-GA) regarding the agency's investigation into the explosion and fire that occurred on February 7, 2008, at the Imperial Sugar Company facility in Port Wentworth, Georgia.

MR. BRESLAND: I'll repeat the motion stated by Mr. Wright. I move to approve the --

MR. VORDERBRUEGGEN: Excuse me, Mr. Chairman.

The report number, I believe, is 2008-05-I-GA, because that date is based on when the incident occurred, not today's date.

MR. WRIGHT: I stand corrected.

MR. BRESLAND: Thank you, Mr. Vorderbrueggen.

I will repeat the motion. I move to approve the CSB Investigation Report and

recommendations as amended (No. 2008-05-I-GA) regarding the agency's investigation into the explosion and fire that occurred on February 7, 2008, at the Imperial Sugar Company facility in Port Wentworth, Georgia.

Do we have any discussion among the board members?

Board member Wright?

MR. WRIGHT: Thank you, Mr. Chairman. I applaud the improvements that Imperial Sugar Company has made as part of their rebuilding effort, but I'm personally disappointed that it took such a catastrophic tragedy to bring about these changes, or these safety improvements.

I believe this was a preventable event. It should not have occurred. It either occurred through a lack of knowledge of or awareness of the hazard, or a blindness to the risk that did exist, or complacency. I can't put my finger on exactly which one it is, but I think it may be one of those or a combination of

those.

So I strongly recommend that we approve the report and the recommendations as amended. Thank you.

MR. BRESLAND: Board member Wark?

MR. WARK: No additional comments.

MR. BRESLAND: Board member Visscher?

MR. VISSCHER: Just wanted to, well, first of all, thank -- I think you've put your finger on it, Bill, in terms of the issue here. Also, follow up -- I guess this is our general discussion not specifically on the report but follow up on something Mr. Clements mentioned about building awareness not only in the sugar industry but in other industries. We still have a long way to go.

I picked up an article from actually a couple of months ago now, I think, that appeared in a trade publication about OSHA's National Emphasis Program and the inspections that they're doing under the Emphasis Program.

And it mentions that, even now after all this has happened, mentions that, for example, in 32 inspections in Georgia resulted in 311 citations as part of this series of inspections they're doing over combustible dust. And it gives some more statistics to neighboring states.

So there's a long way to go, and I encourage Imperial to work on that effort of sharing what it's learned and what -- its experience. And we have a long way to go in terms of continuing to build the awareness of the dangers. Mr. Bresland said at the outset it's entirely preventable hazards and it's often a lack of awareness is where it starts. So continue to work on that. Thank you.

MR. BRESLAND: I would just like to follow up on that comment and also Board member Wright's comment. This tragedy was completely preventable. It's just really unfortunate that it had to happen. The board members have had an opportunity in recent weeks to tour facilities where there has been some enlightenment because

of incidents, one in Baltimore, one in Gramercy and one right here in Port Wentworth. And it's striking to me the difference between the photographs that we saw in this presentation and what we've seen in these facilities in terms of how well they can be operated if management really takes it seriously.

What worries me -- and it's probably something Board member Visscher is saying as well. What worries me is what is the rest of the world doing in this area? What's the rest of the sugar industry going? What's the rest of the food industry doing? We need to get out -- not only have regulations but we need really good education as well so that people are aware of the hazards and something like this never happens again and the people who are affected by it, and some of whom are here this evening never have to -- should not have to suffer like this and other people in other facilities should not have the potential to suffer like this. It's just really tragic that it did happen in this

way.

So I will repeat the motion, and we'll go for a vote.

And the motion is to approve the CSB Investigation Report and recommendations as amended (No. 2008-05-I-GA) regarding the agency's investigation into the explosion and fire that occurred on February 7, 2008, at the Imperial Sugar facility in Port Wentworth, Georgia.

And I'm going to call for the vote.

Board member Wright.

MR. WRIGHT: I vote to approve, Mr. Chairman.

MR. BRESLAND: Board member Wark.

MR. WARK: Yes.

MR. BRESLAND: Board member Visscher.

MR. VISSCHER: I vote to approve.

MR. BRESLAND: And I vote to approve.

And with that, the report is

accepted and approved.

Just some final closing remarks. I would like to thank each of the Board members for your participation. All of us have a strong interest in preventing these tragic accidents. We see them on a day-to-day basis and we want to make sure that we stop seeing them on a day-to-day basis. Our hope is to make sure that accidents do not occur in the future as a result of dust explosions.

In the next few months the CSB will be working with Imperial Sugar, with bakers' trade organization, with trade unions and insurance companies to ensure implementation of the safety recommendations that were approved here this evening.

I would also like to thank very much the investigating team who worked very hard. They were down here for many, many months under very, very difficult circumstances investigating this accident and have done an excellent job, and thank you very much.

MR. VORDERBRUEGGEN: Thank you, Chairman Bresland.

MR. BRESLAND: I'd like to thank everyone who came this evening. I appreciate your turning out this evening to be here to here our report, and with that, the meeting is adjourned.

(Whereupon, at 8:15 p.m., the meeting was adjourned.)

T