BEFORE THE
UNITED STATES OF AMERICA
CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

* * * * *

PUBLIC HEARING

GALT HOUSE

LOUISVILLE, KENTUCKY

MARCH 12, 2004

* * * * *

NEAL R. GROSS
COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
(202)234-4433 WASHINGTON, D.C. 20005-3701
WWW.nealrgross.com.

APPEARANCES:

MS. CAROLYN MERRITT,
CHAIRPERSON

MR. RIXIO MEDINA,
BOARD MEMBER

MR. JOHN BRESLAND,
BOARD MEMBER

DR. GERALD POJE,
BOARD MEMBER

MR. CHRIS WARNER,
GENERAL COUNSEL

MR. CHARLES JEFFRESS,
CHIEF OPERATING OFFICER

MR. DAVID HELLER,
LEAD INVESTIGATOR

MR. MIKE MORRIS,
ASSOCIATE INVESTIGATOR

PUBLIC PARTICIPANTS
Mr. Ted Nixon, President
and CEO of D.D. Williamson & Company

Ms. Pat Thixton

Ms. Rachel Grimes

Ms. Leslie Barras

Ms. Cherise Williams

Mr. Kevin McAdams

Ms. Amy Hibbard

* * * * *

I N D E X

.

* * * * *

1

59 - 60 PROCEEDINGS

CHAIRPERSON MERRITT: Good morning. Welcome this morning to this Public Meeting of the U.S. Chemical Safety and Hazard Investigation Board.

I am Carolyn Merritt, and I am Chairman of the Board.

With me this morning are our Board Members, Dr. Jerry Poje, Mr. John Bresland and Mr. Rixio Medina.

Also with us this morning are our Chief Operating Office, Charles Jeffress, and our General Counsel, Chris Warner.

Also with us this morning who will be introduced Mr. Jeffress is our investigative staff and our recommendation specialist.

So that we are not disturbed this morning and in consideration of your neighbors, I would ask that if you have pagers or cell phones that you would please turn them off or use them so that our proceedings aren't interrupted.

Also, for your safety, if an event of an emergency, we would ask that you exit through the back door. To the right and the left at the end of the hall are stairways that lead us out.

Also, directly across is the pedway that leads to the building across the street. To the right of the pedway are also some stairs that go down three flights that would exit outside.

So please exit through these doors in the event of an emergency.

The subject of today's public meeting is a serious accident that occurred at the D.D. Williamson Company, a caramel coloring manufacturing plant here in Louisville, on April 11th of last year.

The explosion took the life of an operator, Louis Perry, who had worked for five years at the plant.

It is difficult to imagine a more tragic situation and circumstance than those that unfolded at the plant that Thursday night last April.

Louis Perry was the lead operator overseeing drying of a batch of caramel coloring, and assisting him was his own brother who had recently been hired and started working at the plant.

Mr. Perry and his brother worked together closely through much of the overnight shift as they

had on previous occasions. But as events began to spiral out of control at 2:00 a.m., Louis Perry asked his brother to go seek outside help from a mechanic.

Moments after he left an eight-foot-tall stainless steel seed tank filled with hot pressurized liquid exploded with tremendous force. Heavy metal debris, including the tank lid, was hurled a hundred yards or more into the air. Louis Perry, standing right next to the tank, had no chance for survival and died instantly.

The explosion also caused heavy damage to the facility, including damage to a large aqua ammonia storage tank. Some twenty-six thousand pounds of ammonia solution were released, forcing twenty-six nearby residents to evacuate, and requiring fifteen hundred others to shelter in their homes.

The Chemical Safety Board's investigation has now uncovered the root causes of this tragedy and investigators are ready to present those causes before the Board and to the public.

Most importantly, the staff will then make recommendations for safety actions to prevent the recurrence of similar accidents at D.D. Williamson, but also at other companies where similar circumstances may right now exist.

We would like to thank D.D. Williamson for their cooperation in this investigation. We get our best products and we have our best results when companies cooperate in the investigation of tragedy.

But this accident, along with many others that we investigate, emphasized that to achieve safety requires understanding the hazards of dangerous processes in detail, and anticipating every possible scenario where something might go wrong and complying with laws, codes and standards that regulate dangerous processes. Not doing so courts disaster.

We begin today's agenda with a presentation by the CSB investigators, David Heller and Mike Morris.

Finally, their presentation on the investigative findings, a Mr. Steven Wallace will present proposed safety recommendations.

The floor will then be open for public comments, and we encourage you, if you have comments, to please feel free to do so. But if you would like

to comment we would ask that you register with Mrs. Spiers outside so that we can get your name and I can call on you at the proper time.

We would ask that your comments be Germaine to this event and that you would limit your comments to five minutes.

Following public comment, we expect to vote on this report and the recommendations.

And after adjournment of around eleven o'clock, there will be a news conference right here to recap the morning's events and to take questions from members of the press.

Mr. Heller and Mr. Bresland, who is the Board Member who accompanied the team on this investigation in Louisville at the time of the accident, will be available for this press conference.

On a personal note and more pleasant note, let me formally welcome Mr. Rixio Medina to the Board. While Mr. Medina has already been with us for a few months, this is actually his first public meeting with the Board as a Board Member.

Mr. Medina has a distinguished career as a safety official with Citgo Petroleum. He was a member of the National Advisory Committee on Occupational Safety and Health, and a leader of the American Society of Safety Engineers.

Mr. Medina, I welcome you. And I know that you will be a strong contributor to process safety in your five-year term with us.

I would like now to recognize any Board Members who, for the purpose of an opening statement, would like to have the floor.

DR. POJE: Madam Chair, I just would also like to echo your remarks. It has only been a few months since Rixio has joined the Board, but I have enjoyed the depth of our conversations about how to prevent chemical accidents, and he brings an enormous experience to our institution. So I think the weight is on his shoulders to help us bring forth a higher level of safety in this country in chemical performance.

But having said that, I think he is amply capable of helping make this institution reach its next paradigm of performance.

CHAIRPERSON MERRITT: Thank you, Dr. Poje.

Yes, Rixio?

MR. MEDINA: Thank you, Chairman Merritt.

As you mentioned, this is my first public meeting as a member of the United States Chemical Safety Board. I am grateful and excited for this excellent opportunity for public service on chemical safety, an area where I have spent more than twenty-five years of my professional life.

During my five-year-term appointment I hope to make significant contributions and assist the Chemical Safety Board achieve its mission of promoting the prevention of chemical accidents such like the one we are going to talk about today, and to safe lives, protecting the workers, the public and the environment.

Thank you.

CHAIRPERSON MERRITT: Thank you, Mr. Medina.

If there are no other statements, then I would like to turn the floor over to Mr. Jeffress, who will introduce the staff and begin the presentation.

MR. JEFFRESS: Thank you, Madam Chairman.

As Chairman Merritt indicated, when an event such as happened here in Louisville occurs we at the Chemical Safety Board dispatch a team of investigators to the site to begin the investigation, do on-site investigation and begin our extensive analysis of what happened and begin an analysis of what can be done to prevent such a thing from happening again.

The leader of the investigation here in Louisville is Dave Heller, who will make the major presentation this morning.

He is a supervisor for our investigative staff in Washington, D.C., as well as the lead investigator here. He has twenty-four years of experience in private industry prior to joining the Board about almost five years ago now, and he is a Certified Safety Professional and a Chemical Engineer.

Joining him on the investigation was Mike Morris, who has also been with the Board -- I guess about three years now with the Board. He has a Master's in Safety Environmental Management from West Virginia University; was the process safety manager in private industry prior to joining the Board.

Joining the two of them this morning in making the presentation is Steven Wallace, who is a

professional engineer and also a Certified Safety Professional and Chemical Engineer with extensive experience in the private sector again, prior to joining the Board, in process safety. Also, a published author of a number of chemical engineering professional trade journals on safety matters.

Thank you all for doing the investigation here forth. And, Dave, I will turn it over to you.

* * * * *

MR. HELLER: Thanks, Charles.

Madam Chair, Board Members, Mr. Jeffress, Mr. Warner, guests. This morning my team and I will present to you results of our investigation of the accident that occurred at the D.D. Williamson Company facility on the morning of April 11th, 2003, when at two o'clock in the morning an eight-foot-tall, two thousand gallon feed tank exploded with catastrophic consequences.

Our presentation will begin with some background on our investigative process and on the D.D. Williamson facility.

Next we will review in some detail the course of events on the night of April 10th and 11th.

We will then present the key findings and the root causes of our investigation.

And finally, we will present to you the recommendations we would like to make to D.D. Williamson, the Commonwealth of Kentucky and others.

Our investigation team arrived at the site on Saturday, April 12th. The field team consisted of myself, Randy McClure and Mike Morris.

With me today are Mike, and Steve Wallace, who is our recommendations specialist.

Our field team spent about one week initially at the site, conducting interviews, examining the scene and recovered debris and reviewing documents. We made three subsequent trips to Kentucky over the months to further our investigative work.

We would like to first acknowledge the cooperation of the staff and employees of D.D. Williamson throughout the eleven months of our investigation.

We would also like to acknowledge the following organizations who assisted us in our work:

Louisville Fire Department, Louisville Police Department, Louisville/Jefferson County

Emergency Management Agency, the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives, the Kentucky Department of Labor, Division of Occupational Safety and Health Compliance, and the Boiler Inspection Section of the Office of the State Fire Marshal and the Office of Housing, Buildings and Construction, which is a part of the Environment and Public Protection Cabinet.

This incident was caused by a lack of effective safety systems or programs to identify hazards in one portion of the facility, and as a result the feed tank that failed was not equipped with necessary protective devices.

The accident at D.D. Williamson resulted in the death of one operator, Louis Perry. Twenty-six thousand pounds of aqua ammonia were released, resulting in evacuations of homes in the close vicinity of the plant and sheltering in place of people within a one-half mile radius of the plant.

Debris from the explosion was found several hundred yards from the site of the explosion. Fortunately, the debris landed without doing any additional damage. The damage to the plant was significant.

Now the D.D. Williamson facility is located on Payne Street, east of downtown Louisville, and it is a mixed neighborhood of some industrial, but very residential. This is an aerial photograph of the site (Indicating). This is Payne Street down here, and these are railroad tracks that run the north of the facility. This is I-64 going by, on by the plant. Again, we point out that most of this area here is residential homes.

D.D. Williamson is the world's largest producer of caramel coloring with facilities on five continents. Caramel coloring is used in a plethora of food products. It is used in cola drinks, alcoholic beverages and sauces.

The Louisville facility has been in operation since 1948. It is D.D. Williamson's largest and has about forty-five employees.

D.D. Williamson's corporate offices are just down the -- walking distance of the plant site, on Spring Street.

Now D.D. Williamson produces the caramel color by heating and reacting liquid sugars with ammonia or ammonium bisulfate, and that is called the

malliard reaction.

There is another reaction they use, a caramelization reaction that -- that is done with aqua ammonia compounds.

About eighty-five percent of the D.D. Williamson product is shipped in liquid form. The remaining fifteen percent dried to a powder. And the incident that occurred last April occurred in the spray-drying area of the plant.

Now this sketch shows a layout of the facility (indicating). North is to the top of this picture. The spray dryer area where the incident occurred was over -- over here (indicating).

And I would like to point out that the ammonia storage tank that leaked was over here (indicating), and this area is surrounded by a corrugated aluminum wall, so it didn't provide any real way to stop the tank when it exploded and left the area and hit that ammonia tank.

We will be talking also about the packaging area, and that was behind a concrete block wall, cinder block wall over here (indicating). Again, here is the tank that exploded, Feed Tank Number 2.

Now the heart of the spray dryer system was a five-story tall spray dryer. And a spray dryer, how it works, is a high pressure stream of liquid caramel is sprayed into the top of this chamber and air heated up to about six hundred degrees is introduced at the bottom. And as the liquid droplets fall and the hot air is rising, these droplets dry by the time they reach the bottom of this five-story drop through the hot air. It is a powdered caramel color.

There were two feed tanks that were used to feed the material to the spray dryer. And it was Feed Tank 2, the larger of these two feed tanks, that exploded.

Two operators ran the spray-dryer system, and their duties included preparing the feed in the feed tanks, monitoring and controlling the spray dryer, and packaging the powdered product. And the D.D. Williamson operators work twelve-hour shifts, 7:00 p.m. to 7:00 a.m., 7:00 a.m. to 7:00 p.m.

I am going to show you in a minute two slides that illustrate how the feed tanks operate in the feed dryer system.

In order to dry caramel color the operators

would put liquid into a feed tank. They added some water into the feed tank and they added a carrying agent, either lye or maltodextrose, which is a dry sugar. And the carrying agent improved the performance of the liquid in the spray dryer.

The operators would then warm up the material, and that was needed because this is a very viscous material, this liquid caramel color. Honey or molasses, especially the one they were working this night, honey or molasses would be an analogy for what this material was like before it was heated up.

Finally the operators would close the tank vent valve and they would put about twenty to twenty-five pounds of air pressure on the tank, and that was to help push the liquid out of this tank and get it to the pumps that ran it up to the spray dryer.

Here is an overall drawing (indicating). This is the two tanks. You see Feed Tank Number 2 on the left, about twenty-two hundred gallons.

This drawing here is more just focusing in on Feed Tank 2, and the key things here to look at are the air in, regulated down to pressure of, we said twenty, twenty-five pounds, with the vent value or winch vent valve, and steam that was coils inside of this vessel to heat up the caramel color.

Before we get into the incident description I would also like to make a few points about the feed tanks, themselves.

They are initially built for use at other D. D. Williamson facilities not in Kentucky. They are built to contain some pressure. They were designed for -- Number 2 Tank was designed for forty PSI, pounds per square inch pressure, and Number 1 was designed for twenty-five PSI.

The operators, as we saw in the diagram, manually control the amount of steam. It had a hand valve to control the amount of steam going in and out of that kettle to warm it up. And they also would control the air going into the top of the tank.

And this is all done based on a batch sheet. That was just kind of a recipe for the material. And it is crucial to note that -- and we will be talking about this in much greater detail later on -- that the tanks were not equipped with emergency relief valves, which are required on pressure vessels to ensure that pressures greater than the designed pressure of the tank can be vented

off safely before pressures reach catastrophic levels.

I am now going to hand things over to Mike Morris, who is going to walk us through the incident description.

* * * * *

MR. MORRIS: Thank you, David.

Good morning, Board Members, Mr. Jeffress, Mr. Warner, general public.

I would now like to present a description of the incident that occurred on April 11th, 2003.

Operators working the day shift on April 10th, towards the end of their shift, loaded a batch of liquid caramel into Feed Tank Number 1, and prepared it for spray drying. The day shift also took apart the spray dryer and cleaned it.

Now between 6:30 p.m. and 7:00 p.m., the two night shift operators arrived. The lead operator at six-thirty, and his brother, also an operator, arrived at 7:00 p.m. for their twelve-hour shift, which ran, again as David said, from 7:00 p.m. to 7:00 a.m.

The operators began their shift by reassembling the spray dryer. Then later in the shift the operators began sending the contents of Feed Tank Number 1 to the spray-dryer system, which automatically dried the caramel and bagged and boxed the product, which was powderized caramel.

Also, during this time they filled Feed Tank Number 2, and began preparing this material to be fed to the spray dryer as Tank Number 1 ran empty.

The process would have been to switch to Feed Tank 2 as Feed Tank Number 1 ran empty, to -- almost as a continual process.

While waiting for Feed Tank 1 to empty they discovered a problem with the labels on boxes that were being filled by Feed Tank Number 1.

Between 1:00 a.m. and l:15 a.m. the operators called their supervisor at home to inform him of the problem with the labels. They continued preparing the material in Feed Tank Number 2 by adding steam to heat the contents while they were also working to correct the problem with the box labels in a nearby room.

During this time the operators checked on the temperature of Feed Tank Number 2 while working on the labels, fixing the labels. And while checking

on Feed Tank Number 2 the operators noticed an aluminum band, which is used to secure insulation on the tank snap, and they also noticed caramel liquid running down the side of Feed Tank Number 2.

Now these were clear indications that the temperature and pressure that was building inside the tank was exceeding normal operating limits.

The lead operator sent his brother to get the maintenance mechanic, and he went around to the back of the tank.

Moments later, before the operator and the maintenance mechanic returned to the room, Feed Tank Number 2 exploded.

The lead operator, who was likely standing directly next to the tank, was killed instantly upon the tank exploding.

The tank, itself, Feed Tank Number 2, was launched to the west where it struck a storage tank of aqua ammonia, knocking it off its base, which caused the drain line on the bottom of the tank to break, releasing the ammonia to the ground.

After striking the ammonia tank, Feed Tank Number 2 then struck the spray dryer structure, toppling the entire structure. This scattered debris up to several hundred yards away.

This is a photo of the top pad of Feed Tank Number 2 (indicating). The tank was nearly eight foot in diameter and was constructed of three-sixteenths stainless steel. This piece was found over one hundred yards away to the west, and this piece weighed approximately five hundred pounds.

This is a photo of the feed tank, itself, Feed Tank Number 2, (indicating). As you can see in the picture, what was once a cylindrical tank is now a flat piece of metal debris.

This is another photo showing damage, looking to the north. The tank lying here (indicating), is Feed Tank Number 1. It is the smaller of the two feed tanks. It is about a hundred feet to the south from its original location, which was in this area (indicating). You can see also this is the, what we have been talking about, as the spray-dryer structure, five-story structure.

Probable chain of events of that evening and early morning, Feed Tank Number 2 was prepared per batch instructions. Operators heated the tank by introducing steam to the internal coils of Feed Tank

Number 2 while other work was in progress, the relabeling of the boxes.

The temperature of Feed Tank Number 2 likely rose above 160 degrees Fahrenheit and continued to rise. The one-inch vent line on the feed tank was plugged with hardened caramel. With no way to vent the internal pressure building up inside Feed Tank Number 2, the vessel failed catastrophically.

This is a photo of the one-inch vent line found from Feed Tank Number 2. Through this line was the only way to vent the excess pressure that was building up on Feed Tank Number 2. Notice as it was found, the line was plugged with hardened caramel material. And that, discussed briefly, the ammonia release was a result of the tank explosion.

Approximately twenty-six thousand pounds of aqua ammonia leaked from the aqua ammonia tank that was knocked off of its base. The vaporizing ammonia formed a cloud that floated towards Payne Street from the back of the plant.

Because of this, residents were asked to evacuate from their homes that were located on Payne Street, and to shelter in place for about fifteen hundred other local residents was instituted.

Concentrations as high as fifty parts per million were recorded at the D.D. Williamson fence line of ammonia by the Jefferson County Health Department and the Fire Department during the Hazmat response.

Because of the large amount of debris and the leak being on the under side of the tank, amidst a lot of other debris, it took them three entries to secure before they could find the source of the leak, and the majority of the ammonia vapors dissipated by approximately 7:30 a.m. on the 11th.

This slide is to give you an idea of amounts of ammonia. The odor threshold for humans is about .5 parts per million. That is when you can begin to smell ammonia.

Immediate eye and throat irritation can occur at 50 parts per million. And according to the National Institute of Occupational Safety and Health, human exposure to ammonia above or at 300 parts per million is immediately dangerous to life and health.

Now I would like to ask Dave Heller to step back up and talk about the key findings from the

case.

MR. HELLER: Thanks Mike.

Key findings, as a result of our analysis of a large body of evidence we gathered during our investigation, this is information from interviews, studies of physical evidence, documents and as compared to the regulatory environment various consensus codes and standards, basic good manufacturing practices, engineering practices, and honed down to the key points of the incident, key findings were then used to derive the root contributing causes.

We identified first a lack of engineering administrative controls on the feed tanks. Feed tanks, again, lacking operational or safety controls.

Controlled heating was manual. The operators relied on their experience and their attentiveness of the operation to ensure that proper temperature was met and maintained.

The operators had little guidance on how to control the equipment or on what actions to take in the event of unusual occurrences. And we will discuss this in some more detail when we talk about operating procedures and training.

There were no alarms on the system to alert operators of abnormal conditions, which increased the likelihood on this night that they had missed the warning signs which preceded the tank failure. And there were no interlocks or safety systems to automatically shut down the feed tanks if safe operating limits were exceeded.

And finally, as we discussed earlier and what we will talk about in more detail, there were no over-pressure protection devices. And we describe this as that there were insufficient layers of protection in this system, sort of like layers on an onion that protect the system. The operators' operate work, alarms and trips, and finally the relief devices that were there to protect the system.

We found a lack of technical oversight or understanding of the hazards in the feed tank system. D.D. Williamson staff did not recognize the two feed tanks as pressure vessels. In the past they had had previous drawing operations with open top vessels, and they called these tubs.

And when they put in the new spray-dryer system, which was in the early, very early nineties,

that same mind set of these feed tanks as being just tubs feeding the spray dryer continued on, so these were never recognized as pressure vessels.

Consultants and contractors who had been in the plant over the years also did not recognize the fact, or did not consult with D.D. Williamson as to the hazards. And this occurred despite the fact that the spray dryer, the five-story spray dryer itself was adequately designed and instrumented for safety, and despite the fact that in other areas of the D.D. Williamson facility there were pressure vessels that had proper relief devices and rupture disks and other safety equipment.

So, again, as a result of the mindset at the feed tanks, it did not receive the required inspections and repairs, and modifications were not inspected or certified.

Operating procedures and training were not adequate for the hazards of the process. The D.D. Williamson operators used batch sheets to guide them through the production process. And the batch sheet for the spray dryer would require the operator to list the amounts of raw materials that were going into the process and they would have various quality control check points; take samples, bring them to the lab for the quality control.

So from a quality viewpoint, which is very important in the plant producing food products, they were covering all the bases. But the batch sheets contained no safety information or warnings or guidance concerning the operation of the equipment or safety for the operators.

The written procedures did not explain the risks of overheating the feed tanks or the consequences that could occur if the vent valves were closed. And, again, operators were relying on their judgment on the length of time it would take to heat up the feed tanks.

Finally, training for the job was pretty much on-the-job training and a new operator would be paired up with an experienced operator. This is a training method that is very common in the chemical industry, but it has some problems in that old bad habits can be passed along, or unapproved operational shortcuts can be transmitted. So some classroom training and some instructions on the batch sheets themselves are really a good adjunct to that.

Now the two feed tanks were operated as pressure vessels. Twenty to twenty-fives pounds of air pressure was added to each batch to push the caramel liquid into the spray-dryer feed pump.

Drawings for the tanks show that they were built to design pressures of forty and twenty-five pounds per square inch. However, there is no evidence that the tanks were built or operated per the requirements of the ASME Boiler and Pressure Vessel Code.

The code regulating pressure vessels in the United States is the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers. That is the ASME.

The ASME first formulated rules for the construction of steam boilers and pressure vessels back in 1911, and ASME writes:

"The Code establishes rules of safety governing the design, fabrication and inspection of boilers and pressure vessels."

Now the two tanks we are talking about were never certified by appropriate inspectors when built. The certification process involves a visual inspection, review of fabrication details such as the welding specifications, and review of test results, pressure tests on the vessel, and this assures the integrity of the vessel at the design or rated pressure.

And the tanks were never registered with the National Board of Boiler and Pressure Vessel Inspectors. The National Board is the organization that serves in the United States as the repository for all pressure vessel records.

And finally, repairs and modifications to the tanks over the years were never inspected or certified.

The ASME Code states that all vessels, pressure vessels that is having an operating pressure above 15 PSI shall be provided with pressure relief devices.

The Code further states that it is the responsibility of the user to ensure that the required pressure relief devices are installed prior to initial operation.

Again, D.D. Williamson did not consider these tanks to be pressure vessels and so did not ensure that pressure relief devices were installed as

required, so the tanks were not equipped with pressure relief devices.

They had had relief devices on them when they were being used in other D.D. Williamson facilities. The devices were removed when the tanks were brought to Kentucky and never reinstalled. But it is typical to take devices or other appliances off a tank when it is in transit to avoid any damage.

Again, since D.D. Williamson had this mindset that they were not pressure vessels or did not see the need for over-pressure relief, and so they did not reinstall devices or look at the operation and see what was required.

Physical failure of Feed Tank Number 2 began with over pressure due to over heating. The Chemical Safety Board calculated that a new tank designed like Feed Tank 2 might have been able to withstand an internal pressure of 180 pounds per square inch.

The tank, on the night of the incident, probably didn't see pressures at the worst of 130 PSI, which was the pressure of the steam that was being used to heat the material in the tank.

The vessel then was most likely weakened from prior damage due to application, misapplication of vacuum and from uncertified repairs and modifications before the vessel was brought into Kentucky.

The pressure relief valves, properly sized to the maximum over-pressure that could have been experienced, would have protected the vessel from catastrophic failure.

Now as in thirty-nine other states, the ASME Code serves as the basis for Kentucky's Boiler and Pressure Vessel Safety Act. The Kentucky Act is the basic boiler and pressure vessel safety law, and the details on how that Act is administered are in the Kentucky Administrative Regulations.

We have said that D.D. Williamson had never informed the State of Kentucky that they were bringing the vessels into the State. The Commonwealth of Kentucky requires that used pressure vessels must be certified and a proof inspector when built and carry a National Board registration number. We said that these vessels were not properly registered with the National Board.

When informed by a vessel owner that an

owner plans to bring a used pressure vessel into the State, Kentucky pressure vessel inspectors will travel to inspect that vessel before it is brought into the State. And in this incident State inspectors would have rejected these vessels because the tanks were not certified and were not registered with the National Board.

Now lack of knowledge of vessels operating that do not meet code requirements is not a problem unique to Kentucky. In our investigation we interviewed the chief boiler inspectors of six other states. We talked to folks in Ohio, Indiana, Virginia, North Carolina, Pennsylvania and Tennessee, and we found this to be a common thread, that pressure vessel and boiler owners and operators do not inform the state that they have these vessels in use. The state really has to rely on a number of informal means to ferret out this information.

Sometimes state inspectors receive calls from fire departments doing routine inspections, from building inspectors and plumbing inspectors. Sometimes even from insurance company inspectors.

We found in general that Kentucky's regulations and practices are in line with the other states. In fact, exceed the other states in a number of areas.

The final results of our investigation analysis of the root causes gave rise to the incident. Root causes flow from our key findings and they are the basic causes that if they had not occurred or had not been in place the accident would not have occurred.

That takes us to our first root cause.

D.D. Williamson did not have effective programs in place to determine if equipment and processes met basic engineering requirements. There is no program to evaluate necessary layers of protection on the spray-dryer feed tanks.

No recognition of the need to provide process control alarms or instrumentation on feed tanks, and was one single temperature indicator that the operators had to read, and that is real insufficient on an operation where you are generating pressure and generating raising temperatures. As a result, the operators were unaware that the system had exceeded normal operating conditions.

The feed tanks were installed for use in

the spray-dryer processor out of review of their design versus system requirements. The need for safety valves on the spray-dryer feed tanks were never considered and they were never installed. And the fact that these tanks were pressure vessels did not register with D.D. Williamson management.

Our second of three root causes:

D.D. Williamson did not have adequate hazard analysis systems to allow staff to identify hazards posed by the feed tanks, nor did it effectively use contractors and consultants to evaluate the response to associated risks.

D.D. Williamson plant lacked methods of systematically evaluate hazards of its operations.

Now as a facility producing food products, D.D. Williamson abides by regulations of the Food and Drug Administration, and they have what they call their good manufacturing practice standards and address issues like cleanliness, quality control, ensuring product safety for consumers.

However, these guidelines from the regulations from the FDA do not address worker or manufacturing safety.

D.D. Williamson relied on reviews by consultants and contractors and inspections by insurance inspectors, OSHA inspectors, local fire departments, but none of these individuals or organizations are really best positioned to understand what D.D. Williamson was doing and how they were managing their operation.

One of the best ways to ensure that staff expertise is properly directed is through systematic reviews of plant systems, procedures and equipment, and these reviews were not being done.

An example would be the review that would be done for determining the proper size for relief devices. A review of this type would have likely have identified that the one-inch vent line was inadequate and improper for the relief of the potential over-pressure scenarios that could arise.

So neither D.D. Williamson or their consultants or contractors recognized the need for over-pressure protection. And, again, another example, this lack of hazards analysis. D.D. Williamson never registered his vessels with the State of Kentucky, his pressure vessels.

Our third root cause:

D.D. Williamson did not have adequate operating procedures or training programs to ensure that operators were aware of the risks of operating the spray-dryer feed tanks to overheat and would know how to respond appropriately.

The hazards of allowing the temperature of the feed tank to exceed normal operating conditions or for heating a batch while the vent valve was closed were not documented in the operating procedures. And the operators were not trained to keep the vent valve open until the process of heating the feed tank batch was complete.

At this point we ask the Board if they have any questions before we proceed to the recommendations.

* * * * *

CHAIRPERSON MERRITT: Thank you, Mr. Heller.

At this point I would open the floor. Are there Board Members who have questions for staff?

Mr. Medina?

* * * * *

QUESTIONS OF MR. HELLER BY BOARD MEMBERS

.

MR. MEDINA: Mr. Heller, you mentioned the calculated rupture pressure for a vessel designed to the same specifications of Tank Number 2 of 180 PSI. You also mentioned the normal working pressure for Vessel Number 2 of 40 PSI, and the steam pressure of 130 and the air pressure of -- not to exceed 25 pounds.

You also mentioned the no more -- the temperature of 160 degrees.

Were you actually able to determine at what temperature or pressure Tank Number 2 failed?

MR. HELLER: No. We were -- we really couldn’t do that. We looked at the damage. We looked at the debris, and we did look at the metal. But there was no way to really come up with an accurate number.

We -- the 180 number is a number calculated for a new vessel, built per the thicknesses and the design of the -- what we saw from the drawings of the tank.

The 130 pounds was an estimate of the maximum pressure we think could have been seen in the tank based on the steam pressure going into the tank.

And the 40 was the design pressure for the

tank.

CHAIRPERSON MERRITT: Are there other questions? Mr. Bresland?

MR. BRESLAND: I have several questions, but I will start my questions and then I can turn it over to Dr. Poje and then I can come back to some, my additional questions.

You talked about a lack of automation on the feed tank and the temperature in the feed tank was measured by one indicator.

What would be, in your professional opinion, a more appropriate design for such a temperature control?

MR. HELLER: Again, we talked about the concept of layers of protection, and one aspect of that is redundancy. So one way this could have been done would be the temperature indicator, and then a separate temperature indicator which would go to an alarm that would be set at say this 160 degrees, or it could be set whatever was necessary to provide the operators with sufficient warning that things were getting to a point where they needed to take action.

But again, redundancy so that one common failure wouldn't take both of these instruments out of service at the same time.

MR. BRESLAND: And would that be a temperature that is -- that controls the steam flow?

MR. HELLER: That temperature could be used to control the steam flow either automatically, or another layer of protection would be a shutdown system.

So if 160 is the alarm and the operators come in and say, `Okay, I can say this batch is fine. I can just turn off the steam now manually,' and you are okay.

Maybe if the temperature gets up to 180, or whatever the setting might be, then the system would say, `Well, the operators aren't here. I have to take automatic action,' and it automatically shuts off the steam valve.

Another layer of protection would have been to have a pressure alarm or pressure warning in the same token. Rather than just checking temperature, now you have another parameter you are checking. Like these are again, some more redundancy, a little more safety.

MR. BRESLAND: Were you able to determine,

in the moments or hours before the incident, whether the tank was completely full or whether it was partially full?

MR. HELLER: The tank was not completely full. That would be an issue. If the tank had been full to the very top, then as the liquid expanded that generates quite a bit of pressure. That was a consideration that we looked at.

But based on D.D. Williamson's looking at the material balances around the tank and our checking those numbers, there was a -- it was not completely full. There was a space at the top of the tank.

It appears that the batch was filled as it should normally be filled per the batch requirements.

MR. BRESLAND: In the description you talk about the aluminum bands that are around the tank that hold on the insulation. You talk about them snapping. Could you expound a little more what that means?

MR. HELLER: There's two possible explanations for that. One is, again, there is insulation around the tank. The aluminum covers that as a way of protection, or protection from any external damage, and then the bands hold that all in place, bands like on a shipping container.

The bands snapping, again, two possible interpretations. One is that the vessel itself was expanding and the band was snapping.

Another interpretation was that what had occurred was some sort of a small leak in that vessel and the caramel was filling up the space between the shell of the vessel and the aluminum inside that insulation area, and that was filling up and expanding.

Both indications of a problem with the vessel.

MR. BRESLAND: Now when the tank was being heated up, you know, the material was put into it, then they opened the steam valve, how quickly did the temperature increase?

MR. HELLER: We talked to just about all the operators in the plant and the numbers were twenty to twenty-five minutes to go from about 120 degrees up to about 160 degrees, somewhere in that ball park. That depended on the time of year and the temperature it came in and different batches would be somewhat

different.

But twenty, twenty-five is what they told us for this material.

MR. BRESLAND: And if the operator was unable to pay attention and the temperature for a period of time, let's say ten or fifteen minutes, how much higher would the temperature have gone, would you estimate?

MR. HELLER: We really couldn't estimate how high it would have gone. We did talk, from talking with the other operators, that they had all experienced situations where the temperature had exceeded what they were hoping to get to, and they had come over and they would open vent valve, or they would have the vent valve already open, and they were able to just bleed off that pressure and continue on with the operation with no adverse consequences.

But they had, all of them had had experience of missing that point where you really had to turn it off and move along.

MR. BRESLAND: I will turn the questioning over to Dr. Poje, but I do have some additional questions.

DR. POJE: Dave, I have a couple of questions in regards to clarification.

What was the condition of the valve on the inlet air side? Were you able to examine that?

MR. HELLER: We found the regulator, and it was -- it was damaged quite a bit. Again, it flew quite a distance from the source of the -- where it was originally located.

We think that where the position of the set screw was that it was set so that it wouldn't have, you know, fell open condition. So we -- what I am saying is we don't think that there was a massive in-rush of 125 PSI air into the vessel. Typically, air regulators don't fail in a fell open position.

DR. POJE: I would also like some clarification on your characterization of the batch sheets. I am recalling another tragic event, the Morton Chemical event of 1988, in which workers stayed around a vessel that was clearly out of control and in a very dangerous situation, and their nearness to the vessel added to the human consequences.

In this case obviously there was an impending situation that wasn't recognized by the

work force and unfortunately they were in the situation far too long.

What is the details of the safety operating equipment batch sheets that you would likely see -- did you see at this facility, and what might you have from your background of professional experience as a better designed batch sheet that might provide more warning on abnormal situations?

MR. HELLER: Well, good practices in the chemical industry is to have some level of warnings and safety information each batch sheet; so, whereas, an operator might have, when he first learned the job, had some training on safety or whatever the issues are.

But having it right on the batch sheet, every night when he is running this product, or whenever -- especially if he is not running this particular product that often, when he does run it he will see, `Do not exceed 160 degrees because . . .' He will see, `Do not let pressure exceed 20 PSI because . . .' of these consequences.

And then it would say, `And here is what you should do if that happens. And the alarms are set at . . . and your shut down is set at . . .' Just has it right in front of the operator every day. So he says, `Okay. I am making product twelve and, gee, I need to be careful about 160 degrees and I need to remember to keep that vent valve open when I get working there.'

DR. POJE: I am also struck by the consequences of this catastrophic failure of this vessel. Can you tell me about the nature of the explosion's impact on the cinder block wall?

MR. HELLER: Right. The vessel itself was propelled to the west, and that was where the ammonia tank was. And then it appeared to have ricocheted back and taken out the top of the spray-dryer structure.

On the right was the cinder block wall that separated the bagging area and where the carrying agent was. That cinder block wall was taken out. And, in fact, the roof structure was precarious and we were -- it was -- we were not going in that area for several days until their structural folks came in and kind of took a look at that situation.

DR. POJE: Then you mentioned that we had an estimated release at this event of twenty-six

thousand pounds of aqua ammonia. This week the National Transportation and Safety Board unfurled results of their investigation into a rail car situation in which anhydrous ammonia was released.

Can you give me some indications of the differences in those two materials and perhaps their behaviors when released to the environment?

MR. HELLER: Aqua Ammonia is a solution of pure ammonia and water, and because of that it sort of mitigates the consequences of release.

Release of anhydrous ammonia, it is going to be immediate large vapor cloud, has very disastrous consequences.

Here, again, the water mitigates that somewhat. The leak at this tank was from a hole, a valve at the bottom of the tank, so it was a slower leak; not a massive release all at one time.

But, again, the consequences were such that emergency responders who were trying to get in there had to wear self-contained breathing apparatus, had to wear Level A suits, moon suits, if you will, fully encapsulated suits to get in there and assess the damage.

DR. POJE: And this event occurred at 2:00 a.m. in the morning. There was a number of impacts upon the surrounding public.

Can you characterize the emergency response function during this event?

MR. HELLER: Their response was very good. The folks were on the scene very quickly. I believe it was the firefighters went door-to-door to evacuate the residents that were most close to the incident.

They brought in buses to stage folks away and prepared to move them farther away if the need arose.

They put water on the scene. It was quite a large response and very quick.

DR. POJE: I have one last thing. You did present that a projectile of a 500-pound piece of the top of the tank was driven far away from the site and next to the railway.

What would be the nature of the types of cargoes on that rail line? Would it include hazardous materials?

MR. HELLER: I would assume so. This was a -- I think it was a CSX Rail Line. There’s two lines going by the plant. The company had a third line,

was their siding.

Again, fortunate -- this head of the tank landed on the D.D. Williamson spur. But, again, it was very close to the -- to where the other lines were.

Another piece of the tank, a motor, the agitator motor on the top of the tank, actually landed in the front yard of a house on the other side of the rail tracks.

DR. POJE: I am recalling an event that Steve Wallace and John Bresland and I were at a little more than a year ago in Pascagoola, Mississippi, in which shrapnel patterns of a failed vessel came near to causing another layer of endangerment to the surrounding community. So, again, this is a very serious incident in my mind, and --

MR. HELLER: Well, I think, again, the ammonia tank was pushed off its foundations and lying separate on the bottom. There was a very large dent in that tank which had thirty-two thousand pounds -- was twenty-six thousand. If that tank had been punctured the release would have been much more significant.

DR. POJE: Thanks.

CHAIRPERSON MERRITT: I have some questions.

Explain for me the air pressurization system. I understand this vessel was installed and at some point air pressure was added to this installation.

There was a regulator for the air pressure. What would be the purpose of putting an air pressure regulator on an atmospheric tank, if that is what it was to be?

MR. HELLER: Well, the plant air system ran off the compressor at about 125 pounds per square inch. The recognition by the plant was that that was way more air pressure than would be needed to push the material out. So the regulator was added to just control that down to a much -- really a controlled level.

CHAIRPERSON MERRITT: Okay. And then -- but pressure was needed to move this out?

MR. HELLER: Right.

CHAIRPERSON MERRITT: Okay. So I assume all the holes were plugged in the tank. And where these pressure relief valves had been, what was put in

their place?

MR. HELLER: I don't know if that was the nozzle where the air was added, but typically a tank has a number of nozzles on the top for various appliances or pieces of equipment.

CHAIRPERSON MERRITT: Can you explain to me what this air vent looks like? Because I understand from the report that air pressure would be added and there was a ball valve. Was that on the vent line?

MR. HELLER: It came off of the vent line. The vent line went into the top of the tank and the air -- I mean, the air pressuring line came to the top of the tank. The vent valve came off of that line and there was a quarter-turn hand valve that was used to open up and bleed off the pressure.

CHAIRPERSON MERRITT: It was there in order to also contain pressure?

MR. HELLER: Right. Right.

CHAIRPERSON MERRITT: If it is open you develop no pressure.

MR. HELLER: Right. To push the stuff from the feed tank to the pump, you would close that valve, add the pressure, and then you would start your pumps and work it off.

After you were done and the tank was empty, you would open that valve to bleed off whatever pressure was left before you refilled the tank with the next batch of caramel color.

CHAIRPERSON MERRITT: Now does D.D. Williamson have any engineering staff that would have looked at this tank and identified they would have needed a ball valve in order to pressurize this tank, or how did they come to that?

MR. HELLER: There was quite a level of experience among the staff. There was a young engineer, but they also had experienced people working at the plant who had many years in this industry and in various industries. And these tanks had been used in other locations where also they had experienced people.

CHAIRPERSON MERRITT: So, indicating that they did not recognize this tank as a pressure tank comes a little hard for me to understand.

MR. HELLER: Right. And that is where, if you have a system where you are having systematic reviews, if one person misses this, or if another person misses it, if you have a group of people

together and kind of put their heads together, it really makes up for the some of the -- some is greater than the individual parts in these kind of systematic reviews.

CHAIRPERSON MERRITT: Okay. Do you have other questions, Mr. Medina?

MR. MEDINA: You explained some of the emergency response activities. I would like to know how effective was the shelter in place notification for the residents, considering that it was two o'clock in the morning.

MR. HELLER: Right.

MR. MEDINA: And how well did they actually follow that recommendation?

MR. HELLER: It seems it went very well. Again, most people were sleeping and they wouldn't have received the notifications which were by emergency radio and -- radio and television. But, again, because it was two o'clock in the morning and there was sufficiently -- the shelter in place requirements is stay where you are, don't go outside because you could walk in the wrong direction and go into the problem.

So the fact that it did happen at two o'clock in the morning, people were asleep, was good.

CHAIRPERSON MERRITT: Other questions, Mr. Bresland?

MR. BRESLAND: On the evening of the accident, or even on a typical evening before the accident, how many people worked -- were at work at the facility?

MR. HELLER: Oh, on the night of the accident there were five people at the plant. There were the two Perry brothers. There were two, a mechanic and another operator working, again, on the other side of this cinder block wall, in the cooker area of the plant. And there was a lab technician up in the offices.

MR. BRESLAND: That is four? Did I miss someone?

MR. HELLER: The two brothers, the two other mechanic and another operator inside, and then the lab technician.

MR. BRESLAND: That is five. Was there normally any supervisor on duty --

MR. HELLER: No, not on the -- I don't know. I really can't answer that in general. But certainly

there was none that night.

MR. BRESLAND: And what is the typical work schedule; what is their normal work schedule?

MR. HELLER: It was a twelve-hour shift, several days on, several days off, twelve-hour shift schedule.

MR. BRESLAND: Five days a week, seven days a week?

MR. HELLER: Seven days.

MR. BRESLAND: So the person comes in to work at seven in the evening and leaves at seven --

MR. HELLER: Right.

MR. BRESLAND: -- in the morning?

MR. HELLER: There is a shift change where you meet the folks from the previous shift and kind of go over what is new, what is different, here is the way we are set up.

MR. BRESLAND: Now what was the job experience of the two operators who were working the equipment that evening?

MR. HELLER: The operator, Mr. Perry that was killed, had been on the job about five years. And the other operator had only been there I think since January, he had been hired on.

MR. BRESLAND: I would like to refer to a section in the complete report as opposed to the shortened version here in which you describe what happened on the shift from the time when the operator came in.

Can you go through the time-line of starting at seven o'clock in the evening as to what actually -- what happened from then until two o'clock in the morning when the explosion took place?

MR. HELLER: Right. The operators came in about seven o'clock in the evening. Our information is that Mr. Perry slept for a few hours at the beginning of his shift. He worked two full-time jobs and he was taking -- his brother covered, really covered for him while he took a nap at the beginning of the shift.

Again, this is a night shift operation. They were getting all their work done. They were considered good operators, and it was not considered a performance issue at the time.

At ten o'clock they got back on getting the first feed tank going into the spray dryer, and continued on with their other duties from that point.

MR. BRESLAND: Was this a normal occurrence?

MR. HELLER: From talking with staff and from interviews with the employees and staff, yes, this was a fairly normal occurrence.

MR. BRESLAND: And what -- you said you investigated that and the relationship between that and the incident was --

MR. HELLER: We saw no causal relationship at all. Again, the opinion was that he got up around nine-thirty or ten o'clock. The accident didn't occur until two in the morning. We know he talked to the plant manager by phone about one, one-fifteen in the morning. We saw nothing that related to the events in any way.

MR. BRESLAND: Okay. I don't have any more questions at this time. Thank you.

DR. POJE: I have just one more question. I am persuaded by the findings that you have and the causation, one of the areas that you have raised is the area of layers of protection, which I think is a very important concept in a number of chemical operations.

One that is sort of closest to the core there has to deal with the inherent design of the operation and safety. Is there any way of producing caramel that does not involve pressurized vessels?

MR. HELLER: I do not know the answer to that question. Again, the caramel is already produced at this point in the process. This is just getting the material ready to go to the spray dryer.

CHAIRPERSON MERRITT: Are there any other questions? And if there's no other questions, I would then turn it over to Mr. Wallace --

MR. HELLER: Right.

CHAIRPERSON MERRITT: -- and do recommendations.

MR. HELLER: Steve?

* * * * *

MR. WALLACE: Good morning.

The incident that occurred at D.D. Williamson was a tragic accident that did not have to happen. The mission of the Chemical Safety Board is to prevent accidents like this in the future.

We do this in two ways:

We investigate these accidents and we communicate our findings from the investigations.

We also make recommendations, specific

targeted recommendations to prevent these type of accidents from happening in the future.

Our recommendations are a primary tool that we use to motivate an implementation of safety improvements and to prevent these accidents. They address specific issues that caused the incident and they address management system changes that will prevent similar incidents in the future.

Our recommendations are issued and closed only by a vote of the Board.

I will now read the proposed recommendations from the staff.

(Reading): We have talked a lot in the findings about safeguards that were not in place. Safeguards are best put into place during the design phase when equipment is designed and should be consistent throughout the life of operating equipment.

Consistent with our findings that these were not designed and operated in accordance with good management practice, we recommend that D.D. Williamson and Company, Incorporated, institute procedures to ensure that pressure vessels are designed, fabricated, repaired and operated according to applicable codes and standards.

And in an effort to assure that there are not similar latent hazards at other D.D. Williamson facilities, we recommend also to D.D. Williamson that they audit all vessels at D.D. Williamson facilities to ensure that they are equipped with adequate over-pressure protection as warranted and equipped with alarms and interlocks as warranted.

As we discussed, one of our findings is that a safety valve which had been in place was removed. Also, we found that this tank replaced an atmospheric storage tank, and it was never fully considered as a pressure vessel by the company, even though it obviously was.

Therefore, we recommend that D.D. Williamson implement a program that includes hazard reviews when existing equipment is used for new purposes and when safety devices are removed or altered.

The lack of hazard evaluation can result in insufficient safeguards to prevent accidents, which we have talked about a number of times this morning.

Therefore, we recommend that D.D.

Williamson and Company implement a hazard evaluation procedure to determine the potential for catastrophic incidents and necessary safeguards that should be in place.

As Mike and Dave discussed, this was a labor -intensive process, requiring operators to monitor the process in the heating of the tank while they were attending to other duties.

Therefore, we recommend that D.D. Williamson audit manual control of process conditions, such as temperature and pressure, to determine if safeguards are needed.

And our final recommendation to D.D. Williamson is that they upgrade their written operating procedures and train operators on these revised procedures.

There is an exemption in the Kentucky Regulations which I will discuss momentarily. The exemption only applies to new vessels and not used vessels.

Therefore, in the spirit of communicating information critical to people who install these types of vessels, we recommend to the Commonwealth of Kentucky that they communicate to owners of pressure vessels, mechanical contractors, engineering consulting companies and insurance companies doing business in Kentucky that used vessels are not exempt from registration and initial inspection before being placed into service in Kentucky.

Further, in the spirit of communicating as much information to as many relevant parties as possible, we recommend to the Mechanical Contractor's Association of Kentucky that they communicate to their members that use pressure vessels are not exempt from registration and initial inspection before being placed into service in Kentucky.

And finally, we would like to recommend to the Risk and Insurance Management Society, RIMS, and the National Board of Boiler and Pressure Vessel Inspectors that they communicate the findings of this report to their membership.

One final issue I wanted to touch on, which is not a recommendation but an issue that we will be following up on.

There is an exemption in the State of Kentucky for new vessels. And the exemption reads, and I quote, "The following vessels shall be

inspected upon installation and reinspection every three years, pressure vessels exceeding 200 PSI maximum allowable pressure."

That comes from the Kentucky Administrative Regulations.

While the vessels that we are discussing this morning were used vessels that were brought into the State, this is not causally related to this incident. However, we believe that by exempting the class of vessels that is less than 200 pounds, which would include vessels such as these that we have talked about, the vessel that failed was designed for 40 pounds.

We believe that there is a significant gap in the Kentucky Regulations when compared with other states. We have surveyed five other states to determine if they have similar exemption for vessels, and we found that they do not.

We are concerned that a large number of dangerous vessels may not receive adequate oversight in the State of Kentucky because of this exemption. And, therefore, we have sent a letter to the State of Kentucky communicating our concerns and requesting that they immediately explore ways to remove this exemption from their regulations.

CHAIRPERSON MERRITT: Thank you.

MR. WALLACE: We would like to try to address any questions you may have about the recommendations.

CHAIRPERSON MERRITT: At this point I would like to open the floor to the Board for any other questions you might have with regard to recommendations.

* * * * *

DR. POJE: Just one of clarification, Steve. In our root cause, the third one that we have identified, we focused in on the adequacy of the operating procedures, being inadequate in this particular incident. But our Recommendation Number 6, I believe it is, focuses in on upgrading those.

Would that include an upgrade that would provide some focus on abnormal situations and the appropriate management to them?

MR. WALLACE: Yes. Appropriate written operating procedures should include deviations that you can have from what you expect and what consequences could come from those deviations,

whether it is an increase in temperature, whether it is an increase in pressure, whether it is an increase in contamination, whatever is critical to keeping that operation safe.

There are normal boundaries that should be recorded, understood, and deviations from those normal boundaries, for instance high temperature, low temperature, high pressure. Those should be documented and people should be trained on how to address those situations, which would include the abnormal situations that you discuss.

DR. POJE: Thank you.

CHAIRPERSON MERRITT: I there a reference that we will provide that would direct D.D. Williamson to these guidelines for proper procedures and training with regard to operations; I mean, if we have some guidelines that we can direct them to, or will we in our recommendations?

MR. WALLACE: Yes. As part of the recommendation follow-up it just doesn't stop with a letter that we issue to the company. We will have a number of times that we communicate back and forth with the company.

We will issue the recommendation to the company. The company and other recipients will then respond to us. And then we will evaluate their response, and we continue to have a back and forth dialogue.

But during that process, we certainly communicate our expectations, as we communicated our expectations when we met with recipients prior to issuing this, when we were deciding exactly what recommendations we wanted to make. We wanted to get their input on it. To go --

CHAIRPERSON MERRITT: So that the CCPS, the Center for Chemical Process Safety, or AICHE, or ASTM, or any of these organizations, do they have best practices for procedures and operations?

MR. WALLACE: Yes. And to address the other part of your question, some very good guidelines exist in industry. Some of the ones that I am most familiar with are with the CCPS, Center for Chemical Process Safety. They actually have books specifically addressing maintenance and operating procedures, and those are aspects of some of their other books.

Some of the OSHA Regulations, which all may

not apply in this case; but, for instance, OSHA PSM-1910.119 has a section, a very brief section, on operating procedures, and discusses what should be in that section as well as training.

So good management guidelines and good practices do exist. There are other ones that exist in different quarters. The American Petroleum Institute puts out a number of publications. I realize that a company like D.D. Williamson probably is not a member of the American Petroleum Institute, but they do have good guidelines. Even if you are not in that field, you can apply those guidelines to procedures that you would develop.

CHAIRPERSON MERRITT: And what about management systems? One of the things we say is that there weren't adequate management systems. Do our recommendations address management system guidelines that D.D. Williamson and others should be following in order to assure that they are paying to these layers of protection?

MR. WALLACE: Well, our recommendations try to speak to the outcome that we would require, and the things that we discuss are the hazard reviews and hazard analysis that should be done in order to determine if they have necessary safeguards.

Hazard evaluation is a management system, an appropriate aggressive, persistent hazard evaluation program which proactively looks at vessels as they are being designed. It looks at vessels throughout their operation. It looks at the training that operators receive. It looks at procedures that are in place in order to assist operations personnel in doing their job.

And it covers issues like changes, management of changes, one management system you have to have in place when changes occur.

These were pressure vessels that were actually used to serve a function that atmospheric tubs had been used in the past. That could be interpreted as a change, and an aggressive management system to evaluate changes would address issues such as those.

CHAIRPERSON MERRITT: And can you find those in manuals or in books that are published under -- by CCPS or others?

MR. WALLACE: Right. Again, I would go back to CCPS. They have some very good publications

specifically on management systems. They have a book that is "Technical Management of Chemical Process Plants. I think I have the name right. And it discusses several management systems that you would have.

And, again, I go back to OSHA PSM Regulation. Even in facilities where the PSM Standard, OSHA 1910.119, is not technically applicable, those same management systems and guidelines that exist there, it is good for business to do those. Not only because it makes business safer, but preventing incidents is a cost benefit for industry; and so, therefore, I would encourage people who are looking for these types of standards to review the OSHA Regulations, but also the Center for Chemical Process Safety and the American Petroleum Institute Safety Guidelines.

CHAIRPERSON MERRITT: Mr. Warner, does it require an amendment if we wanted to reference those documents and those guidelines in our recommendation letter? I mean, we don't proscribe how the recommendation is fulfilled, but does it require an amendment to the recommendation, or can we do that?

MR. WARNER: No amendment would be required.

CHAIRPERSON MERRITT: No amendment would be required? Well, I would like to ask, though, that those documents be referenced in our recommendation letters in the event they are not familiar to the company.

MR. WALLACE: I think that is an excellent idea, Madam Chair. We will do that.

CHAIRPERSON MERRITT: Thank you.

Are there any other questions, Mr. Bresland or Mr. Rixio?

MR. RIXIO: Mr. Rixio?

CHAIRPERSON MERRITT: Mr. Medina.

(No further questions indicated.)

* * * * *

CHAIRPERSON MERRITT: Well, with that then, we would like to open the floor to public comment. First of all, I would like to acknowledge that Councilwoman Tina Ward Pug is here and we appreciate very much your coming and attending this meeting. We feel it is important to have local representation here to see what the proceedings are like, and that you very much for taking time out of your schedule to come.

At this time what I would like to do is, Number One, ask you to keep your remarks Germaine to this event. Number Two, to keep them to five minutes or less, and we will time you so and give you a warning.

Also, so that you can be heard, we would like you to use the microphone over here to your left, and please pronounce your name clearly so our court reporter can get it, and spell it for us and tell us what your affiliation is.

With that, I would like to ask, or recognize Mr. Ted Nixon.

* * * * *

.

PUBLIC COMMENTS

MR. NIXON: Good morning, and thank you. I am Ted Nixon. I am currently the President and Chief Executive Officer of D.D. Williamson and Company. Nixon is spelled N-I-x-o-n.

I appreciate the opportunity to share my thoughts on what I believe we have all learned through the efforts of the Chemical Safety Board and many others since the tragic accident nearly a year ago.

This was difficult experience for everyone. We lost a friend and associate in the accident, and certainly caused some anxiety among our many friends and neighbors in the Clifton Community.

We were determined to understand what happened and how it could be prevented. That is why we welcomed a rigorous review by the Chemical Safety Board and three other investigation groups.

When we talk about the fabric of safety practices that surround us in our lives we can see that they have been developed either by anticipating potential risks or learning from failures. I wish this situation could fit into the earlier category, that we could have imagined what might have happened and put controls in place to handle it.

The fact is, this tank operated safely and reliably for ten years.

As our Chairwoman pointed out earlier, companies need to not just look at how things are supposed to work, but how they might go terribly wrong.

Unfortunately, everyone missed it. Inspectors, outside consultants, insurance companies

and our own engineers. But it was our tank and it is ultimately our responsibility.

We respect the findings of this Board and are here to learn, and certainly not to argue with this report. I would appreciate the opportunity, however, to clarify what I feel may be one misunderstanding.

And that is that when the tank -- when the feed tank was brought into the State of Kentucky, as Mr. Heller pointed out, the pressure relief valves were removed to prevent them from damage. And the reason that they were installed was that -- and that it was not certified by the State, was that for four years it was utilized as a non-pressure storage tank. The State did not make a mistake, and we did not make a mistake when the tank came in.

Three years later the feed tank was put into a low pressure situation, and I wish certainly today that we had reinstalled the pressure vessels at that -- the pressure relief valves at that time.

We sought to follow the law. Everyone had done their jobs. But the fact is that a tragic accident still happened. What we have learned from that is that we must be more vigilant.

We have already drawn from this experience and the investigation over the last few months to incorporate many advance safety designs in our new facility. We have completely re-engineered our processes and equipment to eliminate sources of over pressure and high temperature in the feed tank operation.

Dr. Poje asked if pressure and temperature are required in the feed tank operation. Our process now has been changed to eliminate both pressure and temperature in this operation.

We have computerized equipment monitoring in controls in several operations. In our rebuild, all of our raw materials, including our aqua ammonia, will be stored inside the building with highly sensitive leak detection devices to protect our neighbors.

We have designed fans and other noise producing equipment for quieter operation. New emissions equipment has been and will be installed as we rebuild to further protect our air and water quality.

We have contracted with DuPont Safety

Resources to review all of our operations on a global basis and to help us develop a uniform best practices safety program which will be implemented at all of our facilities.

The end result of these efforts is something we have always sought to have and our neighbors deserve, a plant that is safer, cleaner and quieter.

Along with these enhancements to our Louisville Facility, we have also launched a six-point safety enhancement plan at our plants around the world which addresses all of the recommendations of the Chemical Safety Board. I would be happy to provide anybody with details of that at a later date.

In closing, I want to add my deepest appreciation for our neighbors in Clifton and our many friends in this community of Louisville.

I feel so sorry about what happened in our neighborhood a year ago. We sought during this last year to keep them informed of what happened and what we are doing about it, because that is what neighbors should do.

All along their many expressions of support and encouragement have meant a lot to me and to our associates. They have made us a better company and, in turn, we hope in a small way we have reaffirmed the value of businesses and residences working together.

Thank you.

CHAIRPERSON MERRITT: Thank you, Mr. Nixon.

* * * * *

CHAIRPERSON MERRITT: I would like to recognize Pat Thixton.

MS. THIXTON: Good morning. Thank you for the opportunity to address the Board and the D.D. Williamson management.

I guess I come as a lifelong resident of the neighborhood, and I am coming just to share some of my concerns, and I come with more questions than comments.

I would like to know what assurance do we have that the corrective plan of action that has been put in place will ensure that a similar occurrence does not take place in the future?

What kind of oversight or inspection procedures are in place by the regulatory agencies to determine that laws, codes and standards are followed

to the law?

As a result of the explosion there has been reconstruction. From casual observation, it appears that there has been a significant expansion of the facility. Does that also imply that there is significant risk to the neighbors who live in the area?

And I guess have the personnel of D.D. Williamson been trained to handle the worst case scenario?

Thank you.

CHAIRPERSON MERRITT: Thank you for your comments.

* * * * *

CHAIRPERSON MERRITT: The next person is Rachel Grimes.

MS. GRIMES: Good morning. My name is Rachel Grimes. That is G-r-I-m-e-s. I live at 2042 Frankfort Avenue. I serve on the Board of the Clifton Community Counsel, also. I can actually see the D.D. Williamson plant from my rear yard if I look west along the CSX Rail Line.

During the ten years that I have lived here there have been two catastrophic explosions at this plant. This recent explosion made pictures fall off my walls, something that the freight lines does not cause.

I understand from several articles in the Courier-Journal that this company has had twenty-seven hazardous spills since 1991. There have also been fifty-nine violations, other fines and civil suits brought upon them by MSD -- that is our Metropolitan Sewer District -- for being a significant non-complier with waste water pollution discharge.

I am outraged that the owners of this company have been so grossly and repeatedly negligent with regard to the health and safety of its workers and the residents of Clifton.

Clearly this Chemical Safety Board has found that this accident was preventable. D.D. Williamson’s willful avoidance of compliance resulted in a man’s death.

It is not enough that 140-year-old company has committed to rebuilding a safer state of the art plant. They should implement the recommendations that have been brought to you today by this Board.

But I also feel they should implement a hazard communication program for the workers and the residents that would include an audio component for Clifton's many visually impaired residents as well as those that are sleeping soundly in their beds.

Both of these explosions that I refer to happened at two in the morning.

I feel very strongly that they should be held accountable to the full extent of the law with regard to the environmental health and safety regulations that they have negligently avoided repeatedly.

Thank you.

CHAIRPERSON MERRITT: Thank you very much for your comments.

* * * * *

CHAIRPERSON MERRITT: All right. I would like to call Leslie Barras.

MS. BARRAS: Good morning. My name is Leslie Barras. My last name if spelled B-as in boy-a-r-r-a-s. My husband and I live at 100 North Keats Avenue within the Clifton neighborhood.

We are approximately a half a mile as the crow flies from the plant, well within the odor shed of the plant, and also I believe within the area of impact from a worst case release, according to the Company's Clean Air Act Risk Management Plan.

We also live about twenty-five to thirty feet from the CSX Rail Line. I can assure you there are a lot of hazardous materials moved along that line, including large quantities of Chlorine, Methyl methacrylate, molten sulfur, pretty much the gamut of materials. So that is another concern and I appreciate that being raised.

I am going to address two proposed recommendations for your consideration to add, adding to the report, and then make just a couple of comments.

One is that I would like for you to consider recommending that the company have an independent registered professional engineer review and certify both the design and as-constructed-installation of the expansions that are currently either already been completed or under way right now. Someone who puts their independent RP on the line, to make sure that in fact those plans and proper codes are being addressed in this new construction.

Secondly, I notice that one of the recommendations that there be an audit of global facilities. I would like to see that a recommendation be considered that for the next five years that the company have an annual environmental health and safety audit conducted by a qualified consulting firm and that the results of that report be shared with the neighborhood, just to ensure that as they put programs into place and implement them that someone is actually doing an evaluation, since -- my concern is that we are not getting the government oversight required, that a qualified firm come in and do that and then share the reports or the results.

In terms of comments, my first comment -- and I was glad to Mr. Heller address the land use issue in the neighborhood. The initial Federal Register Notice for this meeting indicated that the neighborhood is a mixed industrial/residential area. And I can assure you, as Mr. Heller brought out, it is a very residential area.

Clifton is approximately four to five hundred acres. It is a National Register Listed District, a local Historic Preservation District.

According to our adopted neighborhood plan, which was adopted in 2002, the percentage of breakdown of zoning by land use is approximately nine percent industrial, ten percent office, retail and restaurants, sixty-seven percent residential and fourteen percent community.

That community percentage is important because that includes the campus of the Kentucky School for the Blind, which has been in the neighborhood since the eighteen-fifties, and the American Printing House for the Blind within a couple of blocks of the facility. And because of that there is -- this neighborhood has one of the largest populations of visually impaired residents living anywhere in the entire country, which we believe is a special consideration in terms of safety protections for this particular facility.

I would like to make a brief comment on the conduct of the company and to give some context for my remarks.

I have been an environmental attorney for twenty years. I spent the first fifteen years of that experience in environmental law, consulting for

industry, particularly the process industries, with a consultant who is actually Terrell Minnett (phonetic), a competitor of RNT Jones and Moyse (phonetic). I hope you don't hold that against me.

Process industries included the petroleum, petrol chemical industries in Southeast Texas, South Louisiana, including a facility, Mr. Medina, in Lake Charles I am sure you are familiar with. Facilities in Pascagoola.

Part of what I did was to be involved in to lead and actually participate in environmental health and safety audits that our clients wanted to initiate on their own.

And I am very familiar with companies in the process industries who are very responsible, who go out and conduct their own internal environmental health and safety audits, to uncover problems ahead of time, to be pro-active. These are large, sophisticated, publicly traded companies, and so I am very well aware that companies take their compliance commitments very responsibly and understand the importance of them.

Particularly based on what Ms. Grimes said, and looking at the recommendations, maybe you can't say this, but I will say it. I am appalled. Some of these are so basic to process issues.

This is not an unsophisticated company. Its management has been trained in engineering at one of the better public educational schools in this entire country, and I don't view this issue as an isolated issue.

With the environmental problems that have occurred over the past decade, the two explosions, the fact that when this particular incident happens there was no timely notification to the National Response Center. The company had also failed to keep up to date its hazard communication submittals for local Emergency Management Agency.

My concern is that what we are seeing is a very systemic, systematic, pervasive failure to meet basic minimum compliance requirements. And that causes me very great concerns.

And part of what I ask for in terms of having some independent ongoing review through qualified companies would hopefully correct that problem.

But this is not an isolated issue. This is

a very sophisticated company, and it really calls into my mind really how much was known and how much was intentionally not taken care of at this particular facility.

The other issue I would like to address very briefly is the conduct of government. And this is something I am just responding to quickly based on reading the Courier-Journal this morning.

I was somewhat concerned that our Metro Emergency Management Agency indicated that they considered this facility as not a high risk facility and that they were amazed by the force of the blast and the tremendous destruction.

I am amazed at that comment, because I wonder what the basis of that comment was. It makes me wonder whether they have the facility's Risk Management Plan. You know, why weren't they notifying the facility that they weren't fully submitting their community right to know materials, and that causes me great concerns as well.

And I thought about also asking for possibly a recommendation from you that our Metro Emergency Management Agency go back and do its own exhaustive self-evaluation in terms of how they truly do identify and respond to risks. Because I -- I have not a great level of assurance right now after reading that comment this morning.

Finally, and this is just a personal line of inquiry I am going to follow up on. I would be curious with the new, very complex, exacting requirements of the Bio-Terrorism Act of 2002, particularly the food security requirements which recently have come into force, requires companies to be registered, as to whether this company has taken the time to meet those compliance responsibilities.

Of course, those are very serious. There are very quick, stiff sanctions, particularly for import and export of their products at port of entry. And if the answer I find out is that in fact they have met all those regulatory requirements but yet we have got a situation of where Federal Environmental Health and Safety laws that have been on the books for thirty years, somehow escaped that level of scrutiny. That particularly would cause me great concerns.

Thank you for your very thoughtful evaluation in your technical staff evaluation.

CHAIRPERSON MERRITT: Thank you.

* * * * *

CHAIRPERSON MERRITT: Ms. Cherise Williams.

MS. WILLIAMS: Good morning. My name is Cherise Williams. That is C-h-e-r-I-s-e. And I am a neighbor that lives about two hundred yards from the plant.

I would like to open with maybe a question type of comment. And -- well, let me first say that I was not going to speak because I am very, very angry about what has happened here. But I feel it is very important for my anger to be known because I know that I am not alone, in living in this neighborhood with what has happened in this plant in the past ten years that I have lived there.

I am directly affected by ongoing smells in emissions. Better air pollution control devices as well as, from what I understand, drainage control devices need to be in place.

I am concerned for the safety of my neighborhood as well as for the employees at the plant.

My more immediate thoughts after this explosion were that D.D. Williamson needed to move out of a neighborhood setting and into a more industrial area.

And why were these vessels not inspected prior to the accident which killed a man when installation of this valve could have prevented such a tragedy?

In today’s Courier-Journal, the CEO of the company stated that they thought that they had a good safety program and that this was a wake-up call.

And I want to remind you, I am not a family member of the man that was killed, nor did I even know him. But I found that remark very offensive because this man will not ever wake up again.

While we are on this subject of wake-ups, I have been awakened two times in the past seven years from my sleep in my bed from explosions. The first time was in ‘96, when I thought an airplane was about to land on my roof.

The aftermath from that was the pistachio green or mint green snow covered the entire neighborhood to the north of the plant. The houses, the lawns, the walks, the cars, everything were covered.

April 11th, I was sound asleep again. This was the second time that it felt like my house had been picked up and put back down. My first thought that it was a bomb. And then I started fearing for my elderly neighbors and I ventured out to check on their safety, and then I discovered that it was again an explosion at D.D. Williamson.

I might add I was not evacuated. And I am only a hundred to two hundred yards from the plant.

They have now built a very unattractive prison-looking expansion that I see every morning on my way to work when I am looking straight at it.

If they are to continue to operate in my neighborhood or any other location, I would hope that safety devices as well as air pollution and drainage controls would not only be in place but that inspections by external agencies would be instigated by D.D. Williamson and not rely on their knowledge of whether they have a safe operation or not.

CHAIRPERSON MERRITT: Thank you.

* * * * *

CHAIRPERSON MERRITT: I would like to call Kevin McAdams.

MR. McADAMS: Thank you. Kevin McAdams, a resident of Clifton. M-c-A-d-a-m-s. My remark will be brief.

For want of a safety valve, a man died, a neighborhood was imperilled. Assurances about future behaviors are all well and good, but accountability for past practice is paramount.

I ask our Commonwealth Attorney and our Attorney General to investigate and explain to my Clifton neighbors why this incident is not a culmination of criminal negligence.

Thank you.

CHAIRPERSON MERRITT: Thank you.

* * * * *

CHAIRPERSON MERRITT: Amy Hibbard. Please come to the microphone so we can hear you.

Okay. Thank you.

MS. HIBBARD: Hello. I am Amy Hibbard. I am a stepdaughter to Louis Perry, the deceased. I just had a few questions.

Why would the valve not have been installed after they had brought it into Kentucky, and why there were no alarms?

I am sure it could have did a lot more

damage than what was done. And basically the rest have been answered.

Thank you.

CHAIRPERSON MERRITT: Thank you. And the Board's condolences to you and your family.

* * * * *

CHAIRMAN MERRITT: With that note, we would -- are there any other comments that are to be made?

(No other comments indicated.)

CHAIRMAN MERRITT: Then with that, what I would like to do is briefly take a ten-minute adjournment so that we might talk about the comments and we would proceed from there. So we will adjourn for a brief ten minutes.

If you would agree to that we would appreciate it, and we will reconvene in ten minutes.

* * * * *

(Whereupon, a ten-minute adjournment was had.)

* * * * *

(Following the adjournment, the appearances being the same as heretofore noted, the proceedings reconvened, as follows:)

.

CHAIRPERSON MERRITT: Well, I really appreciate the comments and suggestions that were made. They were very thoughtful and also things that we need to take into consideration.

I would ask -- many of the comments that were made, I think are comments that should be directed to others besides this Agency, and we are using this forum as a way to get these comments out.

What I would like to do, with the Board's concurrence, and I don't think I need a vote on this, is to write -- when we get our transcript we will write a letter to the Louisville City Council, to the Environmental and Safety organizations in the area and to the company and to -- we will identify one person, if one person wants to be considered a focal point, we will be happy to communicate with that person, reiterating the comments and questions that were made.

One thing that I would strongly recommend -- it sounds like there is a gross need for some intimate communication between the company, the community, and the regulatory and governing organizations and public bodies in this area.

Mr. Wallace and I just returned from Contra Costa County, California, in which the number of refineries and chemical plants in the area -- this is in the area of Monterey, California, very environmentally sensitive area. The Contra Costa County has a wonderful regulatory organization through their health department that regulates the companies and communicates and coordinates with the companies, and also through their public participation.

And I can't emphasize enough how important public participation is with regard to these kinds of communication and -- not just communication, but public satisfaction that your right and your safety are being protected through the rules, regulations and enforcements of regulations that are on the book, or possibly may need to be enacted in the local community specific to your own situation.

Contra Costa County -- and I will spell that for you, because I know I am not saying it right -- has a marvelous model that I think, and many people have recognized it besides myself, as a model of how this triad really works between elected officials, the industry in the area and the interests of the public, how this can work and work to the benefit and satisfaction of everybody.

And I will include information and contact in my communications to you when that comes out.

At this time I would like to open the floor to the rest of the Board Members for your comments concerning the recommendations and any other actions that we should take.

DR. POJE: Yes, Madam Chair.

* * * * *

COMMENTS BY BOARD MEMBERS

DR. POJE: I was very impressed. It is an honor to be a member of an institution that can bring its work before the public, and in particular then to hear from members of the public in reaction to that work and to the incidence that calls a federal agency into its actions.

There is always important learning that occurs for me through that, so I am honored by the opportunity to have heard all the comments that people have made today.

And I also realize that it is very difficult to stand up in public, but I think that is

the hallmark of what makes this nation great, is people having forums to stand up in public and making their comments heard. So it is a tribute to this community that so many have turned out for this meeting.

I am persuaded that the Board's staff's presentation today, both in the findings, the causations and in the recommendations, all move in a very important direction towards making this lesson learned well and for recommending how to prevent it from occurring in the future.

There are additional matters that were raised in the public comment that I would like to gather more information about. But I think we have enough information before us today for us to make a decision, and I would like to encourage my colleagues here to pursue making a decision coming out of our presentations today.

* * * * *

CHAIRPERSON MERRITT: Mr. Bresland, do you have a question, comment?

MR. BRESLAND: I don't have a question, but I do have a couple of comments, and they relate to some of the presentations made by members of the community.

There were several specific recommendations made by Ms. Barras on independent evaluation of the operation, and I think I agree with Madam Chair that we should take those comments under advisement and go back and discuss them among ourselves.

I think we, as an agency, have the power of making recommendations. We don't have the power of saying to someone `You have to do it.' And I think the recommendation or a requirement that an independent evaluation be made of the operation would be better coming from the appropriate agencies in Louisville and in the State of Kentucky where there might be more, a little more strength to them.

And I would like to go back and among ourselves talk about that and think about it and make a decision on that some time in the very near future and then communicate that decision back to the people in the community, to the company and to the appropriate agencies here in Louisville and in the State of Kentucky.

CHAIRPERSON MERRITT: Yeah. It is possible, if we vote to accept these recommendations as they

stand, it is also possible for us to go back to evaluate the comments and to make additional recommendations at some time in the future. And that is done through a Board vote and is noticed on our Website, and so that information -- for those of you who don't know, all of our proceedings as well as all of our reports, all of our recommendations and all of the follow-up action are published on our Website for tracking, and you can access our Website through www.CSB.gov, and you would be able to track all of that activity as well.

* * * * *

MR. MEDINA: I would like to ask a question of Mr. Wallace.

Steve, could you explain briefly what is the process to manage the recommendations? What is the work done by the staff with the recipient, and how the Board gets involved in that process of accepting those recommendations?

MR. WALLACE: Okay. I will be glad to, Mr. Rixio. This is basically --

CHAIRPERSON MERRITT: Huh-oh. I am sorry.

MR. WALLACE: Mr. Medina. I am sorry. It is contagious.

MR. MEDINA: That is fine.

MR. WALLACE: Basically this is the beginning of the process for us. It is not the end. We issue recommendations that is done through a formal communication with recipients, and some of the particular recommendations that we focused on this morning involved audits that are done. We communicate to facilities what we -- what the recommendation is, and per our conversation this morning we are also going to mention good management practice guidelines that can be referenced in order to ensure that those recommendations are addressed in accordance with what the intent of the Board if.

When we issue that, we will then receive responses from recipients. We will evaluate those responses to determine if what is being proposed meets the intent of what we have.

We will then assign a status to the recommendations. It could be that the intention is there but the action has not been taken, in which case we may call it acceptable response, but we leave it open. We do not close it out.

And the staff action at that point is to

ensure that the action which is proposed is actually taken.

For instance, on audits what we would do is, we would want to see the audit questions that are being used. We would want to see how the audit is being performed. We would also want to see evidence that the audit actually was done and what findings and recommendations came out of that audit, and then what follow-up came from those recommendations to ensure that it is closed out.

It is not enough to simply go find problems. If you find problems and you make recommendations, you have to follow up on those recommendations to ensure that the actions are taken, that problems are fixed and the incident will not happen again in the future. So we will actually look for the response for the audit.

The company has indicated that they have hired DuPont to come in and do an external audit. We would expect to see that information from their audits that they do as part of the follow-up to our responses.

We also recently -- Chairwoman Merritt mentioned that we were in Contra Costa County on that instance along with meeting with the county. We actually followed up with a facility in which we had made recommendations in the past. And we not only reviewed their documentation, but we actually sat down and conducted interviews with some of the subject matter experts who implemented our recommendations.

They developed procedures. They changed procedures in accordance with what out recommendations were, to evaluate not only what was on paper but what was actually physically being done to comply with the recommendations. That gave us a second check.

We don’t do that in all cases, but we did do that in this particular case.

Speaking to the issue of how that information is available, the status of our recommendations is available on our Website. Anyone from the public can go to our Website and see what the status is of any recommendation.

As far as the material that goes into assigning the status for recommendation, that material can be available to the public provided that

it doesn't contain confidential business information or trade secrets which has legalities involved. But that information can be made available to the public and requests for that information should go to Chris Warner, our General Counsel

Did that address your question?

MR. MEDINA: Yes, thank you.

* * * * *

CHAIRPERSON MERRITT: Well, and then finally the staff makes recommendation to the Board, and the Board actually votes as to whether or not we accept those recommen -- the recommendation to leave the recommendation open as acceptable, or in some instances unacceptable, and also or to close it.

Now we don't close vote very many unacceptable. We are pretty good at nagging people. We do have the bully pulpit, and we are not afraid to use public pressure to help companies to implement the recommendations that our findings feel are founded and would prevent this from happening again.

So somebody once said that our recommendations may not be binding. But it is like bringing a note home from the teacher to your mother. It is something of great importance that the federal government does take seriously and we take seriously.

With that, are there any other questions then about this -- what I would ask staff to do is, I would ask our recommendations staff to take the questions, the recommendations that have been made here, to go back to the office and to review them and to determine whether or not indeed additional recommendations need to be made that we would then vote on or act on as a Board.

I will produce a letter that will go to the three constituents. If somebody from the public would please identify yourself as a recipient, I would be happy to make sure that the letter gets to that person. And then we will proceed.

* * * * *

CHAIRPERSON MERRITT: If there are no other questions or comments at this point, I would ask then does somebody have the question that should be presented concerning the acceptance of this report and its recommendations?

MR. MEDINA: Madam Chairman, move to approve the CSB Staff Investigative Report and Recommendations regarding the catastrophic vessel

failure at the D.D. Williamson and Company, Inc., plant in Louisville, Kentucky on April 11th, 2003.

CHAIRPERSON MERRITT: Is there a second for this?

MR. BRESLAND: Second it.

CHAIRPERSON MERRITT: Is there any other discussion concerning this question?

DR. POJE: My only comments are, I have a few editorial comments, but I believe them of a minor nature and we will work with the staff to implement those changes.

CHAIRPERSON MERRITT: That will be incorporated in the final report?

DR. POJE: Could be incorporated into the final report.

CHAIRPERSON MERRITT: With that, if you would, Mr. Medina, I will re-read this, approve the CSB Staff Investigative Report and Recommendations regarding a catastrophic vessel failure at the D.D. Williamson and Company, Incorporated, plant in Louisville, Kentucky, on April 11th, 2003.

If you would signify aye or nay, Mr. Bresland?

MR. BRESLAND: Aye.

CHAIRPERSON MERRITT: Mr. Medina?

MR. MEDINA: Aye.

CHAIRPERSON MERRITT: Dr. Poje?

DR. POJE: Aye.

CHAIRPERSON MERRITT: And I vote aye as well.

With that, the report and recommendations are approved. And I thank you all, and I thank you staff, and I thank you members of the public and the company and the community for attending.

With that vote to approve the report, we are at the end of this planned agenda for this morning.

After this meeting, Mr. Heller and Mr. Bresland will be available for a conference with members of the news media.

Thank all of the investigative staff for their work on this case. The team has uncovered the root causes of this accident and developed important safety recommendations.

If D.D. Williamson implements these recommendations carefully, the plant, its workforce and its neighbors will be safer.

We understand that there are about five thousand pressure vessels registered for use in the State of Kentucky. No one knows how many other unregistered vessels may be out there. No one knows how many of those may be operating right now in an unsafe condition, perhaps just one misstep away from total failure.

Kentucky officials need to communicate with other owners and installers of pressure vessels throughout the State about the safety requirements for safe operation of those vessels.

Owners must abide by codes and regulations, perform required inspections and install needed safety equipment. Used vessels must be inspected prior to being brought into this State.

It is also important to install, repair and maintain pressure equipment according to good and established engineering practice.

The Board concludes that the accident at D.D. Williamson's might not have occurred if this pressure vessel had been previously inspected and properly engineered and certified.

Vessel failures caused by inadequate pressure relief are all too common. In the six and a half years of the Board's existence, we have determined that inadequate pressure relief systems figured in no fewer than seven of the nineteen serious accidents that we have investigated.

All seven accidents caused substantial facility damage. And sadly and more importantly, four of the accidents also killed employees.

D.D. Williamson has, I believe, learned a great deal from this accident at a very high cost. This was the worst day of its existence.

I encourage Mr. Nixon and others who have had this kind of experience in the State of Kentucky to take the word out to its neighbors, to its colleagues and its customers and suppliers, and let them know that the cost of prevention is far less than the cost of a major accident. We all owe that service to Louis Perry and to his family.

And certainly our Board is willing to be working with, as well as independently, getting the word out on this accident in order to prevent it from happening again.

Perhaps this accident should also be a wake-up call to the state officials in oversight and

enforcement with oversight and enforcement authority for pressure vessels.

As mentioned earlier today, I have also urged the State, separate of this investigation, to review the current exemption for the inspection of new pressure vessels rated at less than 200 pounds of pressure.

Although this exemption was not a cause of this accident, it did -- pardon me.

Although this exemption was not causally related to the accident at D.D. Williamson, which involved an unregistered used vessel, I believe that Kentucky should consider following the example of other states and find mechanisms that would include all pressure vessels, new and used, to get inspected for safety.

As D.D. Williamson accident shows, even vessels that operate far below 200 pounds per square inch of pressure can cause tremendous damage if they fail catastrophically.

On another note, sadly, the Board will be back here in Kentucky this year for the completion of our investigation of another devastating accident. This time involving dust at the factory in Corbin on February 20th of 2003.

The explosion at CTA Acoustic Insulation plant killed seven workers and injured a dozen more. And it also raises serious problems with hazard awareness with regard to combustible dusts in industrial operations.

Our investigation is making good progress, and the Board plans to meet in Corbin later this summer to release our final report.

With that, if there is no other comments or questions, I adjourn this meeting.

.

(MEETING ADJOURNED AT APPROXIMATELY 12:00 NOON.)

* * * * *

.

.

.

.