U.S. Chemical Safety and Hazard Investigations Board

Business Meeting

September 2, 2020

CSB Headquarters Office - Washington, DC

U.S. CHEMICAL SAFETY BOARD MEMBERS PRESENT:

KATHERINE LEMOS, Chairman & CEO

STAFF PRESENT:

Anna Brown, Director of Administration

Stephen Klejst, Executive Director of Investigations & Recommendations

Tom Goonan, General Counsel

Wills Hougland, Investigator

Lauren Grim, Supervisory Investigator

Chuck Barbee, Director of Recommendations

Amanda Johnson, Recommendations Specialist

OPERATOR: Hello, and thank you for joining the Chemical Safety Board public business meeting. At this time, all participants are in a listen-only mode. Later, you will have the opportunity to ask a question in the question and answer session. You may register to ask a question at any time by pressing the star and 1 on your touchtone phone. Please note, this call may be recorded. I will be standing by should you need any assistance. It is now my pleasure to turn this conference over to Chairman Katherine Lemos. Please go ahead.

CHAIR LEMOS: Welcome and good morning. We will now call to order this business meeting of the U.S. Chemical Safety and Hazard Investigation Board, referred to as "the CSB."

I'll start by introducing myself, Dr. Katherine Lemos. I'm the Chairman and CEO for the agency. As you may know, this is my second public meeting in this role, having started a few days prior to our previous public meeting four months ago. I am honored to serve the agency and the American public in this capacity.

So, joining me today in our offices in Washington, D.C., is our senior leadership team. We have the Director of Administration, Anna Brown; Executive Director of Investigations and Recommendations, Stephen Klejst; and our General Counsel, Tom

Goonan. Due to COVID-19 pandemic, this is an audio-only meeting and we are maintaining social distancing per CDC guidelines.

So, today we meet in open session, as required by the Government in the Sunshine Act, to discuss operations and agency activities. For those of you not familiar with our agency, the CSB is an independent, non-regulatory federal agency that investigates major chemical incidents at fixed facilities.

The investigations examine and evaluate a wide range of aspects to include equipment design, regulations, industry standards and guidance, training, operations and procedures, and human and organizational factors. With the facts, we conduct analyses to determine the probable cause and contributing factors for chemical incidents. We also issue safety recommendation or actions that the community can take to prevent similar incidents in the future.

Today, we have a full agenda. In the first part of the meeting, I'll review business items to include recent activities and accomplishments, safety products released, audits and financial status, as well as management challenges and priorities. We'll then provide an update on investigations where you'll have the opportunity to hear directly from our experts in investigations and recommendations. And they'll highlight some

of the unique accomplishments in this area. I'm really looking forward to that. We'll then take some time for public comment.

As the first order of business, I'll start by highlighting our most recent deployment, which has been a large part of this agency's activity this week.

So the CSB deployed to the Bio-Lab chemical plant fire that occurred in Westlake, Louisiana this past Thursday, August 27th, at approximately 7:48 a.m. central daylight time. This was following the landfall of Hurricane Laura.

On Saturday, CSB investigators arrived onsite at the facility to begin their investigative activities into the incident. Unfortunately, due to site safety concerns — and as you know, safety is our number one priority — the investigation team was initially able to survey the facility perimeter only and we did learn a lot from that work.

On Monday the 31st, two days ago, we provided an update to our deployment and we released an initial set of confirmed facts. This information can be found on the first page of our website, csb.gov.

As an update, yesterday, the investigation team was finally able to enter the area where the fire actually occurred to begin their inspection of that area.

The CSB will provide updates throughout the initial phase of its investigative activities, and you can be assured that the CSB will conduct a thorough and transparent investigation of this incident. I'll discuss the status of other investigations further in the agenda.

I'd now like to speak about our accomplishments. Our agency has made significant progress in the first four months of my tenure, and I'm pleased to report some of these accomplishments to you.

In terms of staffing, we've been really successful in hiring investigative staff and we've also identified some of the other staffing gaps that will provide the resources that are required for us to fulfill our mission.

We've hired seven investigators over the past 12 months and we recently closed a job announcement for several more investigators. After having received a lot of applications, I'm extremely hopeful that multiple candidates will be selected and become excellent additions to the CSB team.

I'll say that the investment in recruiting and training is a priority for me and our agency and requires our creating a culture to retain this talent through enhanced communication and engagement.

Along with taking the time to understand our business and operations, I've reached out to our federal agency counterparts and stakeholders to build and strengthen our interagency collaborations. I've also reached out to many of our key stakeholders across the chemical industry.

For those of you on this call, I want to thank you for taking the time to meet with me, for joining today. And I sincerely look forward to additional meetings scheduled for the coming weeks, especially with those that I have not had the opportunity to speak.

Meeting our mission successfully will require strong working relationships and communication. And I am truly energized by the enthusiasm and the support expressed as we work together to drive chemical safety change.

In terms of products, during this time, we have also been working diligently on our investigations and safety products to meet the mission of our agency. As a highlight, in June, we closed a significant recommendation to the chemical…sorry, the Center for Chemical Process Safety, or CCPS, that came out of the Arkema Chemical Plant fire investigation. The recommendation focused on guidance for actions facilities should take to prevent catastrophic failures during extreme weather events. We've

produced a short video and press release to reiterate the safety lessons and alerts that are especially relevant this time of year. And once again, we commend CCPS for their contribution to our community with this quality product.

In a few minutes, after these business items, our team will be speaking about three other safety products we've recently completed. There's been a release for a Safety Spotlight for Airgas, highlighting the company's actions following a 2016 Nitrous Oxide Explosion. There's also been a release of the Factual for Aghorn, an accident involving the release of hydrogen sulfide. And we've also closed three additional safety recommendations that came out of the Pryor Trust gas well blowout and fire investigation.

I also would like to point out the advocacy efforts we've invested in over the past month for the recommendations from our West Texas event involving ammonium nitrate, which closed in 2016. The tragedy in Beirut caused much needed attention to the handling and storage of ammonium nitrate.

Finally, in our list of recent accomplishments, I am proud to report that the CSB received the Silver TELLY Award for the animation of the 2018 Explosion and Fire at the Husky Refinery in Superior, Wisconsin. I've heard numerous comments from everyone

I speak to about our animations. And I really can't say enough about the impact that they have on our industry and community and learning and making significant safety changes moving forward. So I want to extend a special thanks to our public affairs and animations team members for this well-deserved achievement. You can find information about that on our website.

Moving on to audits, as of the end of July, the CSB is currently working with the Office of Inspector General to provide documents as requested for both the annual Financial and Federal Information Security Management Act audits. Both of these audits are expected to be completed in November.

As for our financial update, currently the CSB is operating under FY20 appropriated funding with a total of $12-million. The House Committee on Appropriations has funded the agency again, for 12 million, for fiscal year '21. Now, we still have a way to go in the budget process, but I'd like to express our gratitude towards Congress for continuously funding the agency so that we may continue to keep our nation safe from chemical disasters.

I also know that many of our stakeholders had a role in advocating for our agency and we really appreciate your continued support. It is not unnoticed.

I'd like to turn now to a few of our most pressing challenges as an agency. It's important for you to know, from my perspective, we are addressing our issues head-on — not just me, but our senior team and all of our agency members — to take a proactive approach to move our agency forward to meet our mission.

The most pressing issue currently facing the CSB is the need for more board members, as you may know was highlighted by the EPA Inspector General's report last month.

I can't reiterate enough that our top priority is to execute and fulfill our mission. We currently have 14 open investigations and 141 open safety recommendations. Some of these might require urgent action. A board vote is required to approve investigative reports, new safety recommendations, and status changes to existing safety recommendations. That is the purpose of the board.

So, although the current situation is not ideal, our current regulatory language allows the board to vote with a Quorum of One. And we have full support from our legal team on this. So, until more board members are appointed, we are pressing forward with our investigations and safety products.

As a reminder, the technical integrity of our safety products comes from our highly qualified team of investigators. And fortunately, the CSB has an amazing and growing number of technical staff that continues to impress me every day. They have diverse backgrounds and are located across the country. And It is their findings and recommendations that are presented to board members. They are the ones that are fully versed in the investigation's technical details.

So, certainly I look forward to the day when we also have a diverse team of board members, because they can provide technical input to our safety products. And most importantly, they can work with me and outreach to advance the message of safety and close on recommendations.

In summary of this topic, there is no question about the legality of the board acting with a quorum of one. The situation is certainly unique. We are one of several federal agencies with the regulatory language that supports this. However, we find ourselves in a position that we have never been called on to exercise this option. It's a call to duty. The CSB serves a critical mission for our nation and it's our duty to put forth the needed findings, learnings, and recommended actions that will continue to protect and serve our nation and people.

Another issue we're addressing at the management level is board efficiency and engagement. And that stems from our current governance structure regarding what the board member roles and responsibilities. And for those of you familiar with the IG report, this is highlighted and has been. It's interesting that our current policies run counter to our statute, which clearly defines board members as technical experts.

So, in response to this, our leadership team, in consultation with other federal safety agencies, are working to align our internal policy with the CSB's enabling statute and the governance structure that provides clarity and will enhance efficiency, productivity, and engagements.

The end result is that staff will be empowered to execute on business decisions. And board members will more vigorously be able to pursue the agency's mission through technical reviews, stakeholder collaboration, and community outreach.

As you can see, we've been diligently focused on addressing the management challenges presented by the EPA Inspector General's office and we look to have these changes in place by the end of this fiscal year.

Now, I've been asked many times over the past four months, "What are the top three short-term priorities for the agency?"

In concert with our leadership team, there are three top resounding priorities.

The first one is to continue delivering safety products to the community. The second is to drive efficiency of operations. And that comes through meeting our staffing demands to support these products as well as by addressing the IG's, the Inspector General's, recommendations regarding roles and responsibilities for a more efficient, productive, and accountable agency. And finally, to leverage and strengthen our stakeholder relationships. And I'm being very broad in that use of the word "stakeholder" to include our federal agencies, our counterparts, our colleagues, industry, and associations. Together we can improve the safety of the chemical industry.

So, now moving onto our investigation update. As I highlighted, the CSB deployed to the Bio-Lab incident this past week. And I am pleased to announce that our team has been working diligently to move our open investigations forward.

The investigation into the Kuraray incident, which occurred on May 19th in 2018 in Pasadena, Texas, that involved 23 workers and a discharge of ethylene, is in the final review stage.

In addition, we released the factual update focusing on our Aghorn investigation in July. Today, we will have our lead

investigator for our Aghorn incident, Investigator Hougland, provide an overview of our factual update. So at this time, Investigator Hougland, please proceed with your presentation.

INVESTIGATOR HOUGLAND: Thank you, Chairman. On Saturday, October 26th, 2019, a release of water containing hydrogen sulfide, a toxic gas, occurred at a facility called a water flood station. The release fatally injured an employee and his wife. This facility is operated by Aghorn Operating, Inc., and I'll refer to that as Aghorn throughout the rest of this presentation.

A water flood station is used during the recovery of crude oil from underground reservoirs, and the water flooding process increases the amount of oil companies can extract from the ground. Water flooding happens when water is pumped under high pressure into an oil reservoir and, thus, increases the pressure underground. The additional pressure in the reservoir pushes more crude oil to the surface.

On the evening of Saturday, October 26th, 2019, a component on a pump in the water flood station failed, causing water containing hydrogen sulfide to spill from the pump.

At 6:43 p.m., while an Aghorn employee was at home, he received a phone call notifying him that a process alarm was triggered at the water flood station. As a part of his normal

duties, he drove to the facility to determine what had caused the alarm. After the employee arrived at the facility, and while he was working on the pump, he was overcome by the hydrogen sulfide gas.

Several hours later, the employee's wife became worried that the employee had not returned home. She loaded their two children into her personal vehicle and together they drove to the facility. After she arrived at the facility, and while searching for her husband, she was also overcome by the hydrogen sulfide gas. Just after 10:00 p.m., emergency responders arrived at the water flood station and were able to rescue the two children who were still in the vehicle the employee's wife drove to the facility.

On Sunday, October 27th, 2019, the release of water from the pump was stopped when a valve on piping leading to the pump was closed.

The CSB sent a two-person investigation team to the facility after the incident. During its examination of the Water Flood Station, we determined one of the plungers, the part on the pump that pressurizes the water to be injected into the reservoir, shattered. The broken plunger is a likely release point of the water.

There is also a hydrogen sulfide detection system installed at this facility. When we tested the system, the results showed that it may not have been performing as expected. And when we spoke to eye witnesses who were at the water flood station on the night of the incident, none of them saw the warning light that the alarm system was set to turn on if hydrogen sulfide was detected.

The CSB released the factual update related to this incident on July 27th of this year. We are planning to release the final report by the end of the calendar year. Thank you.

CHAIR LEMOS: Thank you, Investigator Hougland. A question for you. What are the next steps for this investigation?

INVESTIGATOR HOUGLAND: The team is working to complete several different investigation activities. And we are also currently in the process of drafting the final report. We plan to continue to examine physical evidence from the scene as well as reviewing documentation provided to us by Aghorn and other companies, as well as other government organizations. Right now, we're on schedule to release that final report before the end of the calendar year 2020.

CHAIR LEMOS: Thank you so much. I really appreciate that, Investigator Hougland.

The second presentation is from Supervisory Investigator Lauren Grim, who will provide an overview of the key findings from the agency's Pryor Trust investigation. This will be followed by our Director of Recommendations, Mr. Chuck Barbee, who will be discussing the Pryor Trust Recommendations. Then the final presentation from Ms. Amanda Johnson, Recommendations Specialist, will be discussing a recent advocacy document.

Supervisory Investigator Grim, please proceed with your presentation.

INVESTIGATOR GRIM: Thank you, Chairman. I'll begin by describing the Pryor Trust incident, and then I will describe some of the causal factors that led to the three recommendations from Patterson that we're highlighting today. And then I'll turn it over to Recommendations Director Chuck Barbee to discuss how Patterson has implemented these recommendations.

On January 22nd, 2018, a blowout and rig fire occurred at the Pryor Trust gas well, which is located in Pittsburg County, Oklahoma. The rig fire caused fatal injuries to five workers who were inside the driller's cabin on the rig floor. The well was operated by the company Red Mountain Operating, and Red Mountain contracted with Patterson-UTI, or Patterson, to drill the well.

On January 11, 2018, 11 days before the incident, Patterson began drilling the well. At the time of the incident, the well had been drilled to a metric depth of over 13,000 feet. In our investigation of the incident, we found that during the drilling operation, the well had become "underbalanced," which means the fluid, called “mud”, inside the well bore could not prevent gas from entering the well.

For conventional drilling operations like this one, the goal is to prevent gas from entering the well during drilling. Gas in the well during conventional drilling operations is dangerous and it can lead to a blowout if the gas is not detected and controlled.

The rig was not equipped to perform an underbalanced drilling operation. The rig workers were not trained to drill underbalanced. And Red Mountain's drilling plans did not plan for drilling underbalanced.

The CSB issued a total of 19 recommendations to eight separate entities, including Red Mountain Operating, Patterson-UTI, Pason Systems, National Oilwell Varco, the American Petroleum Institute, the International Association of Drilling Contractors, the State of Oklahoma, and the Occupational Safety and Health Administration, all with the goal of preventing future drilling incidents.

Three of the recommendations we're highlighting today are recommendations the CSB made to Patterson. We are highlighting these recommendations specifically because we determined Patterson took great strides to learn from this incident and to make safety changes.

The first recommendation we are highlighting today is related to "tripping," which is the operation to remove drill pipe from the well. In our investigation, we found that the on-shift driller was confused by the data he was seeing during the tripping operation before the incident because the equipment was aligned differently than what he was used to. This contributed to him not realizing that gas was entering the well before the blowout.

The CSB recommended that Patterson develop tripping procedures that detail the required equipment configuration for tripping operations. To help prevent future confusion regarding the well data, we recommended that rig personnel visually verify their equipment is lined up as specified in the procedure before beginning the tripping operation. We also recommended that Patterson specify well-monitoring requirements for when they were tripping wet, which is when the drill pipe is full of mud,

or when they're tripping dry, which is when the drill pipe is empty.

The second recommendation we're highlighting today relates to testing drillers' influx detection skills. We found that the drillers working on the rig before the incident missed several significant indications that there was gas in the well before the blowout. We felt that the likely contributor to this was that, before the incident, Patterson did not effectively conduct drills to test that its drillers could detect signs of gas in the well. We therefore recommended that Patterson develop a policy requiring the regular testing of their drillers' influx detection and response skills through formalized drills.

And the final recommendation we're highlighting today relates to "flow checks," which are tests the drilling crews perform to determine if there is gas in the well, which, again, is a dangerous condition. In our investigation, we found that crew members did not perform basic critical flow checks before the blowout.

Contributing to this, we found that Patterson did not effectively monitor as drilling crews performed flow checks as required by their policies. And one reason for the lack of monitoring was that Patterson, at the time, did not require flow

checks to be documented either electronically or on paper. So we, therefore, made a recommendation to Patterson that they develop and implement a policy requiring that flow checks be documented. We recommended that they document the operations during which the flow check was performed, the method used, and the length of the flow check.

And I'll now turn this over to Recommendations Director Chuck Barbee to discuss the actions that Patterson took to implement these recommendations.

CHAIR LEMOS: Thank you.

DIRECTOR BARBEE: Thank you very much.

CHAIR LEMOS: Thank you, Lauren. Prior to turning it over to Chuck Barbee, a question is…for you is what are the key takeaways from this investigation? Or at least one key takeaway.

INVESTIGATOR GRIM: Oh, certainly. So in this investigation, we discovered some significant industry-wide gaps relating to the safe performance of the drilling operations. And in our investigation and report, we were able to communicate to the industry the gaps that we found. And gaps that we uncovered include: the lack of a regulatory framework governing drilling safety; a lack of industry safety guidance, for example, relating

to alarms management and tripping guidance; and weaknesses with the interface drillers use when configuring alarms at that point.

We're seeing a positive response by the industry to our findings and recommendations. As we see here, and that Director Barbee will discuss, Patterson has made some great strides to improve facets of their drilling operations to improve safety. So we're looking forward to additional positive improvement from the industry resulting from our investigation and recommendations.

CHAIR LEMOS: Thank you so much, Lauren Grim. That's super helpful. Director Barbee, I think it would be appropriate now for you to continue with your presentation.

DIRECTOR BARBEE: Thank you, Chairman Lemos. Good morning. As was said, my name is Chuck Barbee and I'm the Director of Recommendations. I oversee the staff on activities of the Office of Recommendations, which is responsible for the recommendations program as well as the advocacy program. In that vein, I'm going to advocate just a little bit for the Pryor Trust investigation.

In my view, this is one of the best investigative reports that the CSB has produced. It addresses a loss of control of a land-based gas well, which resulted in a blowout, which, as we know, is the uncontrolled release of hydrocarbons. These

hydrocarbons eventually found a heat source and ignited and resulted in the death of five workers.

Why do I believe this investigation was so important? Because it addressed a myriad of causal factors spanning all possible topics. At the organizational level, we discovered gaps in policy as far as how the different contractors and subcontractors work together. We found gaps in policy in operations and training. There were unclear, confusing, and sometimes unfollowed operational policies, as well as mismatches between the human element and the technology they were using.

To address these gaps, the CSB, as we said, issued 19 recommendations. Four of those went to companies that provided some of that technology in the control panels, alarm systems--that kind of thing. Nine recommendations went to the three companies that were directly involved in the drilling operations. And six of those recommendations went to the standard-developing organizations in the trade association.

One thing to keep in mind: The American Petroleum Institute is one of our…our stakeholders that we work very well with and they're developing those standards. But those standards are voluntary. This in…this industry is largely unregulated, so we issued two more very big recommendations: one to the State of

Oklahoma to regulate within the State of Oklahoma, but again, that is limited by the state boundaries; and the other to OSHA to regulate this industry at the federal level. So, those are big recommendations that I'm strongly advocating for and I'll let you read the specifics on them on our website.

Now, as we said, nine of the recommendations went to the three companies that were directly involved in operations. And five of them went to Patterson-UTI. Today, I've been given the opportunity to discuss them and how Patterson-UTI addressed them.

So, keep in mind that this report and the recommendations were issued in July of 2019. Two months later, Patterson-UTI set up a conference call with the recommendations staff and we addressed any questions that they had and they let us know the progress that they were making. And they were making significant progress.

Then, nine months after the investigation and recommendations were issued, they sent us a comprehensive letter detailing how they addressed the nine recommendations they were issued and exactly what they did to…to address them. In short, it…it was pretty outstanding. Pretty amazing.

They established a Well Control Steering Committee that consisted of: the President; Senior Vice President of Operations;

Vice President of Operations, Technology, and Strategic Services; and several subject matter experts, and of course, their legal counsel.

This committee then formed the Well Control Assurance Team that had over 30 years of experience in operational drilling. This team, then, both provided and developed hands-on training. They reviewed policy revisions, as well as put forward some of the new policies. They conducted audits and they did Management Of Change reviews.

Additionally, Patterson-UTI brought in a third party to develop and implement training on underbalanced drilling operations. And at the time that they issued the letter back in March, they had deployed this training to approximately 1,500 employees.

Like I said, this is an amazing response by one of our recommendation recipients. In addition to being fully transparent, they have been very cooperative, very communicative--and that is critical to making sure that the recommendations that we issue are addressed. But more importantly, they took a comprehensive systems approach to change in their operations. And I cannot say enough about that. And with that, I will

say"Great job, Patterson-UTI.Keep up the good work." And I will hand things back over to Chairman Lemos. Thank you very much.

[UNIDENTIFIED]:Well, thank you, Director Barbee. I would like to ask a question about the presentation. How would you characterize the overall impact of the closing of the recommendations that you discussed?

DIRECTOR BARBEE: Ah. I am…I'm glad you asked me that question. I have to say, if you read the report, up front it talks about the footprint of Patterson-UTI on the industry. They're a significant portion of the drilling operations that are out there. As a matter of fact, in March of 2019, they had 171 active land-based rigs in the U.S. and Canada. Now, with that large of a footprint, these policies and procedures that they are implementing is going to positively impact a significant amount of the land-based gas well drilling industry.

So, these are very, very significant and the reactions of Patterson-UTI in getting these done has been just phenomenal. I cannot… Like I say, I cannot speak highly enough about it. Thank you very much for that question.

CHAIR LEMOS: Thank you, Director Barbee. That was… Every time I hear those words "impact" and "significant" and, after reviewing the materials myself, every single one of them in those

recommendation status changes, I was equally impressed. And it just makes me proud of our agency and the work we're accomplishing.

Ms. Johnson, can you please proceed with your presentation?

SPECIALIST JOHNSON: Thank you, Chairman, and good morning. My name is Amanda Johnson, and I am a recommendations specialist within the CSB's Office of Recommendations.

The CSB recently released a Safety Spotlight to highlight the actions of Airgas Incorporated, and Air Liquide subsidiary. A "Safety Spotlight" is an advocacy product that highlights the activities or innovations of those entities, to include recommendation recipients, that positively drive chemical safety change.

On October 28, 2016, a nitrous oxide trailer truck exploded at the Airgas Manufacturing Facility in Cantonment, Florida. The explosion fatally injured one Airgas employee and heavily damaged the facility. Airgas is the largest producer of nitrous oxide in North America.

Three months before the incident, Airgas became a subsidiary of Air Liquide, which has a business footprint that includes 68,000 personnel spanning across 80 countries.

Following the investigation, the CSB determined that the most probable cause of the incident was, that during the initial loading of a trailer truck, a pump heated nitrous oxide above its safe operating limits. This likely started a nitrous oxide decomposition reaction that propagated from the pump into the trailer truck, causing the explosion.

The CSB found that Airgas did not have an effective safety management system that identified, evaluated, and controlled process safety-related hazards like those that led to the explosion. As a result of our findings, the CSB issued Airgas an extensive recommendation with 17 key components, each with multiple subparts, relating to its nitrous oxide operations.

Following the incident, and before the CSB completed its investigation, Airgas had already quickly begun a comprehensive initiative to review its safety program for nitrous oxide production facilities, trucking fleet, and cylinder filling operations. They were very communicative during this process.

The scope of the safety initiative included 17 different areas for process safety improvements including, but not limited to, an inherently safer design, hazard analysis, applying lessons learned from previous incidents, Management Of Change, and process safety information.

The Safety Spotlight itself includes a link that provides information on the scope of this initiative as well as Airgas' status of implementation at the time the recommendation was issued.

The CSB wanted to take an opportunity to highlight the proactive and positive actions taken by Airgas following the incident. The company created a new industrial Risk Management Program, a Process Hazard Analysis methodology, a Management of Change procedure, and project design authority within the company. These are all now included in written programs that have been added to the company's safety manual and incorporated into company operations.

In nine of the 17 components of this recommendation, Airgas exceeded what we asked for. Those areas are safety management systems, hazard analysis, applying lessons from previous incidents, applying industry standards, technical staffing, audit programs, safety interlock testing, run-dry safety interlock, and operations.

Airgas also strengthened its facility operations by adding technical and hourly staffing, applying more appropriate transfer pumps for nitrous oxide service, upgrading maintenance requirements for flame arrestors, updating procedures and

training for drivers and operators during transfer operations, and issuing personal gas monitors to personnel to help eliminate or mitigate potential exposure to nitrous oxide.

In conclusion, the CSB recognized Airgas's efforts to promote safety in response to the CSB investigation and recommendations. These efforts will advance chemical safety and have broadly applicable lessons for the entire compressed gas industry. Thank you.

CHAIR LEMOS: Thank you so much, Ms. Johnson. And for all those on the phone and in the room here, by listening to these experts, you can see why I feel so fortunate to be leading this amazing agency in the critical mission that we have.

So…with that, I would like to open the floor for public comments related to the CSB's activities. If you're on the phone and wish to make a public comment, please follow the operator's cues and the operator will unmute your line.

In addition to this, which is not really live activity, you can also submit public comments by e-mail to Meeting@csb.gov to be included in the official record.

So, when you are making comments via our live conference line with Raquel, please present your comments within three minutes.

And, so, now let's go to the phone to see if we have any public comments.

OPERATOR: Certainly. And at this time, if you have any comments, please press the star and 1 on your touchtone phone. You may withdraw your comments at any time by pressing the pound key. Once again, for any comments, please press the star and 1 on your touchtone phone. And we'll pause a moment to allow participants to queue. I will take our first comment from Steve Solomon, your line is open.

STEVE SOLOMON: Thank you. And thank you for the opportunity to be able to participate in the meeting. And I wanted to thank Dr. Lemos and all of the staff for what you do.

My first comment, and then I have a question… My comment is we would appreciate having a much better advance notice about when the public meetings will be. So if there's anything that you can do to help get that word out sooner, it's greatly appreciated so that people can plan their calendars as stakeholders.

And, to finish my comment about stakeholders, Dr. Lemos, I noticed when you were talking about the top three short-term items, you had mentioned that you had been reaching out to stakeholders. And, specifically, you had mentioned that it

involved actual industry, other government people. And I think maybe this was just a simple omission, but I know that we have talked and I would appreciate, in the future, to include labor in those comments. That when you do talk about stakeholders, we would greatly appreciate it as the Steelworkers, and I'm sure that many other unions would appreciate that as well.

And then my question is what is the CSB doing about the big Maine April 15th explosion at the paper mill owned by Pixelle? With that, I will send it back to you. Thank you for the opportunity.

CHAIR LEMOS: Thank you, Steve. The reception was a little bit muted, but I will just reiterate. I believe you made a comment about having more advance notice. I know that after the technical challenges we had last month, we did put a notice, you know, for this date.But we didn't put it into the fed…Federal Register until, you know, the 10 days' notice. We will do a better job; certainly we can do a better job, and I'll…I'll… say something now that I was going to mention later, as we fully anticipate for our next meeting, at the end of October, to have video capability, which will make it easier for us to communicate some of the information we are doing only via phone. So I look forward to that. We're working out those

technical issues that I know most agencies and companies are also struggling with.

In terms of stakeholders, absolutely. I include labor in that mix, but I will be more than happy to call it out specifically. In fact, I have even more meetings with additional labor representatives. It's a super important entity. And of the mix, I didn't call out, say, EPA, OSHA, labor… I didn't call all the specific stakeholders out, but I certainly recognize the importance of, you know, the entities that are representing the worker. That's critical, in my perspective, to a comprehensive investigation and I appreciate your comment.

In terms of the explosion in Maine, I believe this came up… I'm going to turn this over to the Director of Investigations and Recommendations, Director Steve Klejst. Because I believe this occurred prior to my joining the agency in February, perhaps.

DIRECTOR KLEJST: Yes, thank you, Chairman. If I remember correctly, the incident, Steve, that you're referring to took place at a paper mill facility in Maine. And the information that we received with regard to the material released, and the consequence of that, at the time, did not meet the industry…the agency's threshold for deployment. But we were able to do the initial follow-up to determine the significance of the event as

it was reported. But the CSB did not deploy to that incident. Thank you.

OPERATOR: And as a reminder, if you have any comments or questions, that is star and 1 on your touchtone phone.

CHAIR LEMOS: Raquel, while we're waiting maybe for some other comments or questions, I did have a few follow-up questions for Ms. Johnson on the Airgas Safety Spotlight. Maybe right now would be a good time just to insert that. So, do we have…SPECIALIST JOHNSON: Sure.

CHAIR LEMOS: Do we have Amanda Johnson?

SPECIALIST JOHNSON: Yes, I'm here.

CHAIR LEMOS: Great, thank you. So sorry.

SPECIALIST JOHNSON: [multiple voices] Yes.

CHAIR LEMOS: Can you describe why the CSB found Airgas's response went above and beyond the expectations of the CSB?

SPECIALIST JOHNSON: Sure. So Airgas was…Airgas was very proactive and began a wide-ranging initiative to review its safety programs for its nitrous oxide production facilities before the CSB even completed its investigation. Not only that, Airgas was extremely communicative during the process, and the CSB investigation team met with them many times during that process

to discuss gaps…the gaps that they were finding during their review.

Airgas also aggressively pursued actions to close out the recommendations that the CSB did issue them. So, in a little more than two years, Airgas re-engineered its entire approach to managing process safety in its nitrous oxide business. And these actions resulted in an approach that actually now exceeds the quality of a number of similar company safety programs where operations are covered by the OSHA PSM standard.

So, as I stated before, on 9 of the 17 items that the CSB recommended, they actually exceeded what the CSB asked for. And I think I mentioned before, but they created a new industrial Risk Management Program, a Process Hazard Analysis methodology, a Management Of Change procedure, and project design authority within the company. And these are now all included in written programs that they have added to their safety manual and incorporated into their company operations.

CHIEF LEMOS: That's excellent. Thank you so much, Ms. Johnson.

SPECIALIST JOHNSON: Sure.

CHIEF LEMOS: Do you have a message for other recommendation recipients based on the response from Airgas?

SPECIALIST JOHNSON: So, the CSB hopes that, by highlighting these positive actions taken by recommendation recipients such as Airgas, we can communicate to industry what "good" looks like in terms of learning from chemical incidents that may happen at their facilities, sharing and learning from lessons learned… Sharing lessons learned, communication, strong communication, and improving efforts and good safety practices.

CHIEF LEMOS: That's super helpful, Amanda. So, Raquel, I'm not sure if we have any additional questions from folks on the line, or if anything has come into the…the e-mail, if we're able to monitor that simultaneously.

OPERATOR: Sure. We do actually have a question. We'll take our next question from Tony Thurick. Your line is open.

TONY THURICK: Hi. Thank you. This question is for Investigator Hougland on the Aghorn incident.And my question is: Was there design guidance from the company about common…I'd say common guidance for locations of the light…the detection light and audible detection sounds that would be, you know, within the facility? That may include common…oh, things like making model suitable locations for the light and wiring diagrams and drawings?

DIRECTOR KLEJST: Thank you very much for the question. This is Steve Klejst with the Office of Investigations and Recommendations. We'll be looking at a number of items and issues with regard to standards guidance, either on the regulatory site or as far as industry guidance that's produced by the various groups that have an impact on the industry. So the factual update that we've prepared for today is really…today's discussion and included in the original release, did not include that level of information.

The report itself will be a comprehensive report as the IIC Hougland described in that it will include all of the related factors. And if there was a standard that was applicable or guidance, the investigation team will certainly address that. But thank you for the question.

TONY THURICK: Okay. Thank you. That answers my question, thank you.

CHAIR LEMOS: Okay, so we did receive one question via e-mail regarding an update on the ITC, or Intercontinental Terminal fire investigation. We are going to be posting any updates, but really, there have been no changes to the status. We continue to work all of our investigations. There is no formal public data, additional data, that we can release on that, which is…which is

why I didn't review any changes in our last public meeting. Director Klejst, do you have anything else to add about that particular investigation?

DIRECTOR KLEJST: Thank you, Chairman. The investigation is still a work-in-progress. The IIC is still leading the development of the investigation along with the report. Our target is within the first quarter of 2000…the calendar year, that is, 2021, to have the report completed based on our current schedule and our open investigations. But it's still very much an active investigation with regard to the…working with the ITC team to bring the investigation to closure.

CHAIR LEMOS: Thank you, Director Klejst. Any other questions, Raquel? Or others that might have come in via e-mail?

OPERATOR: We'll take our next question from Danielle Kaeding. Your line is open.

DANIELLE KAEDING: Hi, thank you. I was just wondering, I might have missed it at the beginning, but I heard you mention the investigation at Husky in Superior, Wisconsin. And I was just wondering what the status of the investigation is there and the timeline.

CHAIR LEMOS: Thank you. I'm sorry, I didn't catch your name.

DANIELLE KAEDING: Sorry, my name is Danielle Kaeding. I'm a reporter with Wisconsin Public Radio.

CHAIR LEMOS: Got it.

DANIELLE KAEDING: [multiple voices] Yeah.

CHAIR LEMOS: Thank you so much. Yes, I will pass that over to Director Klejst again regarding the status of that particular investigation.

DIRECTOR KLEJST: Thank you, Chairman. The Husky investigation, we were fortunate enough to use one of the recently hired new investigative staff members to take the lead on that investigation. So it is, again, currently a work-in-progress with the new Investigator-In-Charge assuming the lead in that investigation. This investigation, also, we have a targeted completion date in the first quarter of calendar year 2021.

CHAIR LEMOS: Thank you, Director Klejst. Any other questions we might have?

OPERATOR: We'll take our next question from Jeff Johnson. Your line is open.

JEFF JOHNSON: Hi. I'm with Chemical and Engineering News. I'm just wondering, I…I…I [inaudible] your approach in terms of rewarding chemical companies that have made changes, and that's wonderful. But, of course, they made these changes because an

incident occurred that probably was their fault, so it's important to remember that part of it.

My questions really pertain to…have you made outreaches to the communities that are near these chemical companies? Because they, as well as the workers, and that came up from the USW guy who asked a question about that in terms of your list of people you've turned to, to include workers. But have you made any inroads to communities that are also strongly affected by the location of chemical companies near where they live?

The other question is can you give me just an update on what the status is of hiring more investigators? Those two questions, if you could. Thank you.

CHAIR LEMOS: Thank you, Jeff. You cut out a little bit there, but I think I got your questions. In terms of outreach to stakeholders, certainly I…I've reached across the gamut of not just our…as I mentioned, our federal colleagues, similar agencies, as well as some of the regulatory authorities to make sure that we have really good working relationships on the ground floor when incidents do occur and we can work together seamlessly throughout that process. I…I've also reached out to have meetings with labor. We have, you know, academic associations as well as industry associations.

And, as you can imagine, it's been four months. I had a four-day overlap with my predecessor, so it's been quite a busy time. But I look forward to working with and reaching out to the communities, and that's an excellent point that you brought up. Absolutely. That is my role as a board member and it's critical that we do that, so I appreciate you making that…that comment/question. But I'm getting there. Yeah, I'm getting there. Slowly but surely, but we're getting there. And it is critical.

And obviously, as you know, we have a lot of events in one particular state, but then the rest are spread out. And I…I have been educating myself on…in the public meetings we've had in the past on some of the open investigations so I can understand the sentiment and the impact. And that is of prime priority to me.

In terms of hiring, again, we've hired seven investigators over the past year. As you may be aware, we've had quite a bit of turnover at all levels of this agency. And we are definitely on our way up and energized about that. We received 350 applications for the two openings that went out last month. And we are in the process of narrowing those down and getting the interviews. We're almost at the interview process. And we have

a number of other positions that are ready to be posted in early September. So thank you for that question.

JEFF JOHNSON: Thank you.

OPERATOR: And it appears we have no more questions at this time, but as a reminder it is star and 1 to ask a question or any comments. It appears we have no more questions at this time.

CHAIR LEMOS: All right. So, I want to thank everyone who's provided a comment here today, or those that have been e-mailed in. And…you know, obviously, you can send those and they will be included to the official record. It doesn't have to be during this hour.

In closing, I want to thank everybody for attending today's meeting. I urge you to continue monitoring our website. And if you haven't already done so, please sign up for the CSB news alerts. That's where we really get our information out. And our team does a great job at putting everything on that website.

So this concludes our business meetings for the fiscal year '20. Our next business meeting will be in October and I believe it is the final week in October. We've placed that such that we would have enough space between this meeting and the next to provide some product to you. Per the comment earlier, we will

make sure to have that date posted as soon as possible. And…and we hope that it's…we look forward to using virtual technology.

So, all of us share a strong interest in preventing chemical incidents in the future and we…we need to work together as a community to do so. So, I thank you for your attendance, your support, your interest, your comments, and your honesty. And with that, this meeting is adjourned.