U.S. Chemical Safety and Hazard Investigations Board

Business Meeting

September 17, 2019

CSB Headquarters Office - Washington, DC

U.S. CHEMICAL SAFETY BOARD MEMBERS PRESENT:

KRISTEN KULINOWSKI, INTERIM EXECUTIVE AUTHORITY

MANNY EHRLICH, MEMBER

RICK ENGLER, MEMBER

STAFF PRESENT:

Tom Goonan, General Counsel

Dan Tillema, Senior Chemical Incident Investigator

Chuck Barbee, Director of Recommendations

OPERATOR: Welcome to the CSB public business meeting conference call. My name is James and I'll be your operator for today's call.At this time, all participants are in a listen-only mode.Later, we will conduct a question-and-answer session. During the Q&A session, if you have a question, please press *1 on your phone. And also note this conference is being recorded.

I'd now like to turn the call over Dr. Kulinowski. Dr. Kulinowski, you may begin.

MEMBER KULINOWSKI: Good morning and welcome. We will now call to order this business meeting of the U.S. Chemical Safety Board, the CSB. Before we begin, I'd like to highlight safety information. Please take a moment to note the two locations of the exits at the side and back of the room. In the event of an emergency requiring evacuation, staff will guide you to the stairwell.

I also ask that you please mute cellphones so that these proceedings are not disturbed. Thank you.

I am Kristen Kulinowski, Interim Executive Authority of the Board. And joining me today are Board Members Manny Ehrlich and Rick Engler. Also with us today is our General Counsel, Tom Goonan, and other members of the staff.

Today, we meet in open session, as required by the Government in the Sunshine Act, to discuss operations and agency activities. The CSB is an independent, non-regulatory federal agency that investigates major chemical incidents at fixed facilities.

These investigations examine all aspects of the incidents, including physical causes related to equipment design, as well as inadequacies in regulations, industry standards, and safety management systems. Ultimately, we issue safety recommendations, which are designed to prevent similar accidents in the future.

Today's agenda for new business includes the release of the CSB's factual update on the ongoing KMCO investigation, among other matters.

If you are in the room and wish to make a public comment at the end of the meeting, please sign up using the yellow sheets at the registration table. Those on the line will have the opportunity to ask a question as well. Please follow the operator's cues and the operator will unmute your line. You may also submit public comments by email to meeting@csb.gov, to be included in the official record.

You will also notice that, in addition to the sign-up sheets, there are a number of other documents available at the table, including the CSB's latest safety digest focusing on worker

participation to help prevent catastrophic chemical incidents, which we released the week of the Labor Day holiday.

I will now recognize my fellow Board Members for any opening remarks. Member Ehrlich.

MEMBER EHRLICH: Good morning. Thank you. I'd just like to welcome you here and say thank you for coming and I hope this meeting is productive. And any comments you have afterwards, or questions, we'll be glad to take. Thank you.

MEMBER KULINOWSKI: Thank you, Member Ehrlich. Member Engler.

MEMBER ENGLER: Thank you. Welcome to all. I would just like, while I'm thinking of it, to highlight one small piece of the work I've been doing lately, which is looking at the use of stop-work authority in…in the process industries.

It's a widespread, commonly used and promoted mechanism for safety. Just a wide diversity of industries and corporations have provisions for stop-work authority. Rather than belaboring it, for those of you who know what I'm talking about, I would welcome seeing any corporate policies, collective bargaining agreements, or any other information on this issue, which has received quite a bit of attention and has actually been looked at in ten CSB reports to date, ranging from a footnote to a more extensive analysis, such as in the recently-issued report by CSB on Pryor Trust.

And so I just wanted to mention that because I know there's a wealth of experience in the room and also on the phone. I'm continuing to look at this issue as a mechanism for safety, both its limits and its opportunities.

MEMBER KULINOWSKI: Thank you, Member Engler. I'd like to note that status summaries of our open investigations, and current actions related to recommendations, can be found on the table outside the room or always…as always, on our website. And I will now recognize Member Ehrlich to provide an update on ongoing audits by the EPA Office of Inspector General. Member Ehrlich.

MEMBER EHRLICH: Thank you. As of September 17, 2019, the CSB is currently working with the OIG, Office of Inspector General, on two audits.

Fiscal 2019 Financial Statement Audit. CSB continues to work with OIG's requests for documentation. Fiscal Year 2019 CSB Audit Exit Conference is scheduled for November 12, 2019.

Federal Information Security Modernization Act, FISMA. CSB is on target to close the two remaining recommendations from the Fiscal Year 2018 audit by October 31, 2019. CSB continues to provide documentation as requested from the Fiscal 2019 FISMA audit.

Thank you.

MEMBER KULINOWSKI: Thank you, Member Ehrlich. I now recognize Member Engler to provide an update on the appropriations for the agency for Fiscal Year 20. Member Engler.

MEMBER ENGLER: Thank you. There are just under two weeks remaining in the federal fiscal year 2019. The Board is making final spending decisions to ensure CSB makes the most efficient and effective use of its annual appropriation.

CSB, like the rest of the government, is awaiting final action on its Fiscal Year 2020 appropriation. The House of Representatives supports keeping CSB's funding at this year's level of $12 million, which we are using for budget projections.

MEMBER KULINOWSKI: Thank you, Members Ehrlich and Engler.

With these updates in hand now, we turn to new business. And the first topic that we will cover is a factual update on the April 2, 2019, fire and explosion, at the KMCO custom chemical processing and specialty chemical manufacturing facility, that caused one fatality and multiple injuries, including some that were rather significant.

First, on behalf of the entire agency, I would like to recognize and express our condolences to the family and friends affected by this terrible incident. Part of what motivates us to do what we do is to… Well, everything that motivates what we do, to

prevent what we do…is to prevent these accidents from happening in the future.

With that, I will turn it over to Team Lead, Dan Tillema, who will present the factual update.

DAN TILLEMA: Thank you, Dr. Kulinowski. I'm Dan Tillema, the Lead Investigator for the Chemical Safety Board and I'll be walking you through today's briefing.

What we're going to do today is, first, we're going to start off with an incident summary, and then we'll talk about a process and facility overview, and go through a description of the incident in a little more detail than what you've seen before. We'll talk about the failed Y-strainer, which is the source of the isobutylene release. And we'll talk about the next steps of our investigation.

The incident occurred on Tuesday, April 2nd, 2019, shortly before 10:46 a.m. An isobutylene release was reported, and shortly after, or just after 10:50 a.m., there was an explosion. There were subsequent fires and a large mutual aid emergency response. One KMCO operator was killed during the incident. Two KMCO workers were seriously burned. In total, at least 30 workers were injured and the incident prompted a community shelter-in-place.

To re-familiarize everybody where the KMCO facility is at, it's in Crosby, Texas, which is just northeast of Houston, in

Harris County, Texas. The KMCO facility is just short of three miles away from the Arkema facility, where there had been an incident following Hurricane Harvey in 2017 that we investigated...Aerial photo of the KMCO facility. We'll use that for a couple things. First, just to familiarize you with what the facility looked like. We're going to be speaking specifically about the process that KMCO used to manufacture sulfurized isobutylene lubrication additive. And that part of the facility—it's tough in this photo, I know—but, right in this area. You might see an 18-wheeler truck in this photo. But that's where…that's where that process is at. And there's an isobutylene storage tank on the facility, back here by the fire water pond that we'll be talking about.

This is the isobutylene storage tank. This is KMCO's 70,000-gallon isobutylene storage tank that the company's been using since 2015.

This next photo is just an enlarged area of what I was showing you in the aerial photo. It shows the area where the batch reactor equipment that makes the sulfurized isobutylene product is.

And now that you've seen both the isobutylene storage tank and the batch reactor system, so...the isobutylene storage tank in this drawing is here, and the batch reactor is here. I'm going to use

this drawing to help explain the isobutylene system and how it is operated. There's two pumps that we're going to be talking about, this circulation pump and this charge pump.

The circulation pump's role is to circulate isobutylene from the storage tank. It comes into the unit where the batch reactor equipment is located and returns back to the storage tank. And that's to provide a reliable supply of isobutylene to the charge pump. Although the sizing of this equipment looks to be equal, it's not. The circulation pump and piping is like 1,200 feet of piping and the charge pump piping is much shorter than that.

That's the basic that I wanted to…you guys to get out of this, is there's two pumps in the system. The isobutylene circulation pump is continually running. The charge pump is used just to charge isobutylene when the proper step in the procedure requires so.

So, on the morning of the incident, KMCO operations staff is making a batch of sulfurized isobutylene, and they completed the charge of isobutylene before 7:00 a.m. And then the batch was holding for maintenance on a scrubber pump. So, they had charged the isobutylene, and they were just not progressing further with the batch until that scrubber pump maintenance was completed.

There we go. So, with the batch holding, the circulation pump would have still been circulating isobutylene to the charge pump, so there would be no flow through that system.

Later in the morning, operators were walking by the reactor and the operator hears a loud pop. And then what he describes as a whooshing noise, similar to an air hose coming off. It obviously gets his attention.

The operator sees a white cloud of vapor near the ground, and three to four feet of hazy vapor above this cloud. He described it to us in two different ways. First, it was like a mirage over hot pavement, which people can relate to. And the second way, he said it was like fumes, like you might see when you're filling up a gas tank.

The supervisor at the site also saw the release, and he described it as a two-foot river of isobutylene going all the way down the road.

So, obviously, they have a serious situation on their hands, and shortly before 10:46 a.m., a chemical operator calls on the plant radio to evacuate the area. This prompts KMCO operations staff to take a number of actions, including ordering a plant-wide evacuation, turning on fire water monitors, turning off equipment, evacuating people, and closing vehicle gates.

Despite these efforts, shortly after 10:50 a.m., the isobutylene vapor cloud exploded. This prompted a…you know, the large emergency response I noted. A shelter-in-place was issued for community residents within a one-mile radius of the facility. KMCO conducted a headcount of its personnel. That headcount revealed that one KMCO operator was missing. Later, emergency responders recovered the operator at the entrance to a plant building. This building was formerly a control room at the site.

An emergency responder described the building condition. He said it was shrapnel. There was nothing left of it; there wasn't a building there anymore.

This is the plant building on the north side of it. So, we're actually looking to the south. This is a walkway that would walk… There are two process units. So, if you're actually at KMCO, you'd see a process unit on your left, you'd see a process unit on your right, and down the end of this walkway, prior to the incident, would have been this plant building. And the operator that was recovered was located basically right in this area where there was an entrance to that building.

Next photo shows the same building. [inaudible] This is the same building from the…the south side--so, looking north. And you can see the destruction to the building.

Next, we're going to talk about the failed Y-strainer. Going back to the same drawing we were looking at, on the charge pump, on the inlet piping, there's a Y-strainer, and we'll talk about that Y-strainer next.

This is a generic drawing of a…a Y-strainer, just to give you guys an idea of what its purpose is. It's basically a filtration device. So, you would have an unfiltered flow coming into the right side here. It would go to the inside of a strainer element. This is a cylinder with holes in it. And so, the flow goes into the strainer element. Any solid particles that are larger than the holes get stuck inside of the strainer and then filtered flow exits. So, it's a very simple filtration device.

This is a photo of the Y-strainer at KMCO. We're looking at both the top and east side of the Y-strainer. Just a couple things to point out. It is a threaded Y-strainer. You see, like, flange connections on the piping. The strainer itself has threads. And so, they've made up adapters to do that. And it appears to be a different material of construction than the piping, which is stainless steel.

This is the failed side of the Y-strainer, the west side. And you can see a hole of…present. That's the failure. It's about 3.5 by 5.5 inches. And you…inside the hole[?], that reveals the strainer

element that I was talking about, a metal cylinder with the holes that's used as a filtration device.

We did recover a piece within the unit, on the west side, consistent with the direction of the failure. That missing piece appears to be consistent with the piece that's missing from the Y-strainer, and will be part of our analysis going forward, to evaluate that failure and understand it better.

What we currently understand about the strainer…and I realize that's incredibly hard to read, so, I'll just highlight a couple things for you guys. These are the technical specifications for the Y-strainer as we understand it. The…the primary thing of interest here is the standards. The strainer was built to the ASTM A126 standards, which is a gray iron, cast iron standard. So when you see the housing materials described here as cast iron, that's referring to the body itself. The stainless steel is the element inside. And the PTFE is commonly known by the DuPont trademark as Teflon. That's just the gasket material in the bottom plug of the strainer. The strainer is…three inches is the pipe size. It's ten inches wide and six inches tall.

As far as the investigation, our next steps will be to review and evaluate process historian data. We received that data back a few weeks ago. We have a lot more work to do to review it, analyze

it, and see what insights it may provide into the cause of the incident. We need to analyze the failed Y-strainer. We'll need to obtain additional information, both records and interviews. This will allow us to complete our causal analysis, and our next step would be to identify potential recommendations and develop a final report.

And that's all I had prepared. If there's any questions you have…

MEMBER KULINOWSKI: Thank you, Mr. Tillema. I'll…I'll go ahead and get started. You mentioned that the type of steel for the Y-strainer was different than the piping…that of the piping. Do you think that might be significant to understanding its mode of failure?

DAN TILLEMA: I think it's definitely possible. So there's some guidance out there, NFPA 58, which suggests that a [inaudible] Y-strainer should not be used. That as a standard, however, may not apply specifically to KMCO. This gets into a lot of nuances within what is the scope of NFPA 58. And there's API standard, API 2510, that we're looking at, as well. But it could still be good safety practice and, you know, relevant from that perspective. But it may not be something that you see in…in OSHA's investigation report, which should be done shortly.

MEMBER KULINOWSKI: Okay. And…and one more on…on the Y-strainer. You showed a schematic that showed fluid flowing into this and then this Y-strainer capturing particulate matter, presumably to keep it out of the rest of the process. Presumably, that material would have to be cleaned out periodically.

DAN TILLEMA: Correct.

MEMBER KULINOWSKI: And so, are we going to be investigating the maintenance schedules for that object, and whether or not corrosion or fatigue leading to such a pretty dramatic failure of that piece of equipment could have been spotted during routine maintenance?

DAN TILLEMA: I guess the short answer is yes. But [inaudible] recognizes a clean surface, non-corrosive. So we're not really expecting to be much corrosion or particulate accumulation there. My understanding is this strainer's there primarily as an extra safeguard to protect a positive displacement diaphragm pump, which is the charge pump. And it has some intricate inside[?] which they're trying to make sure solids don't get into. So, it might not have been a necessary component for the system operation.

MEMBER KULINOWSKI: One moment, please. We're hearing some chatter on the line. Thank you. Please proceed.

DAN TILLEMA: So, we will look at the maintenance schedule, but it's not likely that was…needed to be cleaned very often. And what we've seen right now, I haven't seen any records that suggest it was cleaned, or talked to anyone who had remembered cleaning it.

MEMBER KULINOWSKI: So, you're…you're saying that it might not even have been a necessary component of the process? Something you're going to look at?

DAN TILLEMA: I mean… How to exactly phrase that is a [inaudible] point. I mean somebody put it in, so they thought it was necessary. But there's no reason to expect that isobutylene should be corroding the stainless-steel piping and accumulating a large amount of solids that would necessitate a needforastrainer.

MEMBER KULINOWSKI: Oh, so that's where the particulates would have come from, from corrosive products.

DAN TILLEMA: Yeah, unless you're getting it from the supplier. But, you've got the large isobutylene storage tank that's not allowed any…any particulates that come in. Or, you could filter… If you had concerns about that, you could filter the stream[?] as you're loading it into the tank.

MEMBER KULINOWSKI: Okay, thank you. Member Ehrlich?

MEMBER EHRLICH: That would be me. It seems abnormal that they have stainless and galvanized or PF iron like that. But, as a result of that, was this thing on any kind of PM schedule or radiographic analysis since it was put in?

DAN TILLEMA: No, not that I'm aware of.

MEMBER EHRLICH: Okay.

DAN TILLEMA: There's…there's a record that it may have been replaced in 2015. That's something we have to chase down a little further. There seems to be some discrepancies between what folks have recalled doing in that maintenance versus what's actually documented.

MEMBER EHRLICH: Okay, thank you.

MEMBER KULINOWSKI: Thank you, Member Ehrlich. Member Engler?

MEMBER ENGLER: Two questions. One, could you comment on the use of Y-strainers in the industry? Just because it gives a sense of how [multiple voices]?

DAN TILLEMA: Yeah, I think they're a fairly common device. You know, it's not unusual to see Y-strainers to filter something. It's a fairly simple filtration device. If you have a concern, like with a pump that you want to protect, you might use a Y-strainer for that. But it's something you need to look at as far as the

overall process safety management system, and make sure that the Y-strainer's not a weak component in the system.

MEMBER ENGLER: So this may have…may, we'll see, have broad applicability once the findings are completed, to technology elsewhere.

DAN TILLEMA: Yeah, I mean…I think it's safe to say that, you know, as far as the process safety management system, there's a…there's a lot of learning here for almost any facility, into how something that's simple like a Y-strainer can affect your overall process safety management program. KMCO had been doing a lot of work to strengthen their program and I'm sure they're deeply disappointed that something as simple as a Y-strainer resulted in an incident of this magnitude.

MEMBER ENGLER: My second question. Could you comment more on the status of the OSHA investigation and [multiple voices]?

DAN TILLEMA: Only that I know they're doing one. Since the incident started April 2nd, OSHA's findings should be out before October 2nd, would be their normal six-month timeline.

MEMBER ENGLER: Okay.

MEMBER KULINOWSKI: Member Ehrlich?

MEMBER EHRLICH: This is kind of ancillary to this, but you know, we've given the Harris County Emergency Response Team a lot

of business this year. And I walked into a meeting recently when Bob Royal[?], who's the Fire Marshal from Harris County, stopped the meeting and said, "Oh, Mann Ehrlich's here from the Chemical Safety Board. Have we moved their office to Harris County yet?"

But that's not the point I really wanted to make. Harris County had a gap analysis done, in terms of people working for the Fire Marshal's office and other offices. And they were awarded, I think, $60 million recently, a week or two ago. And that would give the Fire Marshal's office in Harris County another 20 people, which ought to be beneficial to us in the long run, since we have so much business down there.

MEMBER KULINOWSKI: Thank you, Member Ehrlich.

MEMBER KULINOWSKI: Speaking of the Harris County Fire Marshal's office, and other officials in Houston, how would you characterize their and the company's cooperation with our investigation so far?

DAN TILLEMA: Oh, the company's cooperation has been excellent.

MEMBER KULINOWSKI: Okay, thank you. You know, I know that we have a lot…for people in the room, we have ten open investigations right now. And we have fewer investigators than investigations. So,

not to put pressure on you, but do you have a sense of how…how…of a timeline for these [multiple voices]?

DAN TILLEMA: It really… There's nothing about KMCO that should be uniquely time-constraining. We do need to get through the Y-strainer analysis. That might be the most difficult piece to accomplish. But after…after that, there's nothing that should prohibit us from meeting the agency goal of 16 months.

MEMBER KULINOWSKI: So that would be the metallurgical analysis that you'd be doing on the Y-strainer?

DAN TILLEMA: Mm-hm.

MEMBER KULINOWSKI: Has that begun?

DAN TILLEMA: So we…we've definitely been trying to get the Y-strainer analysis going. We've circulated protocols. We…we have some work to do with Harris County folks to actually obtain the Y-strainer in order to get it tested.

MEMBER KULINOWSKI: Okay. Member Ehrlich?

MEMBER EHRLICH: I think to add on to what Dr. Kulinowski said, I think it's fair to say that they've changed political appointees down there and they have a new… I can't remember if she's a judge or a D.A. She's not as friendly to the CSB as others have been in the past. And that's probably being kind.

MEMBER KULINOWSKI: If there's anything that…that we, as a Board, can do to help assist you in your process, please let us know.

Member Engler?

MEMBER ENGLER: I'm done.

MEMBER KULINOWSKI: Okay. Me too. Thank you, Investigator Tillema, for your excellent overview and we look forward to hearing more about the case as it moves forward.

Okay, I would now like to continue the new business portion of the meeting. We will…I will now provide you with some changes that we have made to our policies since the last business meeting. A majority of the Board recently voted via Notation Item 2019-56 to amend Board Order 1 to provide additional notice of public meetings. The new language reads…

The Chairperson should…should provide advance notice of a scheduled meeting sixty calendar days prior to a confirmed meeting date. To the extent possible, the advance notice should include the time, place, and tentative agenda for the meeting; the probable status of the meeting, open or partially open; and the name and telephone number of the CSB official designated to respond to requests for information about the meeting. Any advance notice must include a prominent disclaimer at the end as follows…

The above advance notice is subject to change and is not the official public announcement required by the Sunshine Act. The Board will make public announcement of a final meeting notice and agenda by publishing it in the Federal Register in accordance with 40 C.F.R. 1603.9.

The Chairperson should publicize any advance notice by publishing it on the CSB website and by sending it to the CSB's email subscription list. If the final public announcement differs in any respect from the advance notice, the Chairperson should send the final public announcement to the email list to notify recipients of any changes.

We…our regulations state that we will have public meetings in prescribed months of the year. So, we have tentative dates that we are holding these. So, we can communicate this more…in greater advance time to the public. And I would say that, with this advance notice, now there's no excuse not to come to a CSB meeting. So, make sure you're signed up to our email list to receive these and other notifications.

We will now discuss calendared notation item 2019-51, a proposed status change to a Recommendation to the Occupational Safety and Health Administration, or OSHA's…to OSHA #2005-4-I-TX-R8, resulting from the CSB's BP Texas City refinery and explosion.

The intent of this recommendation was to strengthen OSHA enforcement of the PSM Standard by identifying facilities with the greatest risk of a catastrophic chemical incident; conducting comprehensive inspections; establishing the capacity to conduct more comprehensive inspections by hiring or developing highly trained, experienced inspectors; and expanding PSM training offered to inspectors.

The CSB's recommendations department proposed changing the status of this recommendation to "Closed – Acceptable Alternative Action." "Closed – Acceptable Alternative Action."

Member Engler calendared this notation item, triggering this discussion at the public meeting. Member Engler do you wish to make a motion?

MEMBER ENGLER: Yes, I would. Thank you. My motion is to accept the staff's proposal for recommendation 2005-4-I-TX-R8, that was the focus of the notation item previously referenced, as "Closed – Acceptable Alternative Action."

MEMBER KULINOWSKI: Is there a second?

MEMBER EHRLICH: I'll second the motion.

MEMBER KULINOWSKI:Okay, so, I now invite discussion on the motion. To assist us in this discussion, Mr. Chuck Barbee, Director of Recommendations, is here with us to discuss any…to

provide us with some overview of the recommendation status change and address any questions from the Board. You're now recognized.

CHUCK BARBEE: Thank you, Dr. Kulinowski. I am Chuck Barbee. I am the Director of the Office of Recommendations. And [inaudible] just a little bit about what we do since it's the first time that I've…I've spoken at one of these. I oversee a group of staff that assists our investigative team as we're developing recommendations, prior to the Board approving the investigation. Once the Board has approved the investigation, at that point, then what we do is we…we work with the recommendation recipients to give guidance and sort of push them in the direction of implementing those recommendations in an acceptable manner.

And then, based on their action, we do an evaluation of…of their…of what they've done, to determine what status of open or closed it should be, whether it's acceptable, unacceptable, waiting on information, various other things so… And then we take that status and we propose it to the Board and then they make a decision. And that's sort of how the process works.

In this particular case, this is, the incident is the BP American Refinery explosion, what we call "BP Texas City." And to give you just a little bit about that: On March 23rd, 2005, the BP Texas City refinery experienced severe explosions and a fire in an

isomerization unit that resulted in 15 deaths. In addition to that, there were 180 injuries and significant economic losses.

The incident occurred when a raffinate splitter tower overfilled during startup. The overfilling caused pressure relief valves or pressure relief devices to open and dump flammable liquid into a blowdown drum and stack that vented directly to the atmosphere. When the drum and stack also overfilled, flammable liquid and gas were released into the surrounding areas and ignited, resulting in the explosions and fires.

Due to the many process safety issues identified during the BP Texas City refinery incident, the CSB examined how OSHA was enforcing compliance with the process safety management standard. The investigation found that OSHA's national focus on inspecting facilities with high personnel injury rates had resulted in reduced attention to preventing the less frequent, but more catastrophic, process safety incidents. The CSB found that very few planned comprehensive process safety inspections were conducted by OSHA prior to the BP explosion, and only a limited number of OSHA inspectors had the specialized training and experience to effectively inspect facilities covered by the PSM standard.

So, we issued this recommendation in March of 2007. So, here we are in September of 2019. So, they had…they've had a long time to

implement this, and have partially implemented, over time, to the point that we've gotten to a place now where it's fully implemented. And I'll…I'll go through what they've done to date.

So, on January 17, 2017, OSHA issued a revised PSM-Covered Chemical Facilities National Emphasis Program. The revised Directive applies to all PSM-covered facilities, and this is an improvement, including petroleum refineries, and requires State Plan states to participate in the program.

They have four sources [that] are used for targeting, and this addresses Part A of the recommendation. That is, they use the EPA RMP facilities, all program levels; they look at the explosives and pyrotechnics NAICS codes; they look at prior PSM citations in OSHA's own databases; and they also look at the OSHA Area Office for their local area knowledge.

Everybody knows those…those refineries or those chemical facilities in their backyard better than anybody else. And so getting that…that personal, local touch was…was key here.

Additionally, OSHA reported to the CSB, and this is moving on to one of the other parts of the recommendation, that it has trained 411 Federal and 293 State Plan compliance and compliance assistance personnel. OSHA informed the CSB that many compliance officers have taken multiple courses with PSM-trained Federal

personnel, and that they average 2 PSM classes each on the Federal side, and a little over 1.5 classes each on the State side.

In addition, many of these trained compliance officers have gained valuable PSM inspection experience by participating in the older Petroleum Refinery and Chemical National Emphasis Programs.

The 2017 PSM directive specifies that team leaders must have completed three OSHA PSM courses, along with having participated in six prior PSM inspections. And this is also a big change, stating what a compliance officer does versus the team lead, versus just some other person that's sort of helping along with the inspection.

Compliance officers with lesser levels of training and experience can evaluate only certain programmatic aspects of an inspected company's PSM program. That would be like employee participation, training, contractors and hot work permits--things like that.

So, it basically hits three levels: You've got your team leads; you've got your basic inspectors; and then you've got, sort of, system inspectors [inaudible]. So, they've sort of…I think they addressed all that.

And then, at the time that the recommendation was issued, the OSHA National Training Institute offered only two PSM courses. Since then, in addition to those two courses, the Training

Institute has developed two additional advanced-level PSM courses, which have been presented over 20 times to both federal and state compliance officers.

So, based on the information that we…we have gleaned from OSHA, as I said, we recommend that the new status be changed to "Closed – Acceptable Alternative Action".

Now, we're here talking today because this was calendared. Board Member Engler calendared it. He wanted to have a discussion, and he has some additional questions and, with your permission, I'll go right through those. Okay.

[inaudible] some of these questions maybe outside the scope of the recommendation, and he said that right up front. However, we were going to OSHA and asking OSHA-related questions. So, it was very pertinent that we go and get those…those…those answers for him.

So, Question #1, the OSHA PowerPoint dated June 7, 2017, page 2/slide 2, states that: "Implementation for programmed inspections on hold until outreach is completed." And that was an OSHA slide show that had been used at various different, larger-venue presentations. It says: "What is the current status of OSHA programmed inspections at refineries and other PSM facilities, both by federal OSHA and by state plan agencies? How many such PSM

inspections were conducted by federal OSHA and by state plan agencies in Fiscal Years 2017, 2018, and 2019 to date?"

So, we posed all these questions to OSHA, just to…just to lay this out. And we have not received an answer. So, what we did is we…my staff, recommendations staff, we went and looked at the… We were able to find limited information. We used the OSHA website and we also pulled PSM inspection data that was obtained from OSHA's annual press releases on inspections conducted in the past year and refinery data that was obtained by running inspection searches using the refinery NAICS code and seeing which inspections were coded as "CHEM NEP" in OSHA's database.

So these numbers are not official OSHA numbers from the standpoint they provided them for us. These are numbers that we pulled from their public data. So, what I would say, based on this information, is: These are worst-case scenarios, or the lower end. They may have additional numbers based on information that came straggling in late, or whatnot. And we can wait for a…an official OSHA response. But, these are…what I'd say, these are the low-end numbers.

So, in 2017…and these numbers are facts, though. These came from their [inaudible] PSM inspections were 133 in 2017, 231 in 2018, and they haven't got the 2019 data out yet.

Federal refinery. Now, again, what we did was, we went into the database and we pulled, based on refineries, and compared that with the CHEM National Emphasis Program data. So we came up with 8 in both 2017 and 2018. And year-to-date, so far in 2019, because we pulled that data, we've come up with 15 for 2019.

On the state side, what we've got…and I've got a little parentheses down there, is… These are CAL-OSHA inspections that were coded as "refinery" but not "CHEM National Emphasis Program". So, there's a sort of [inaudible]. It's either 3 or 12, 5 or 11, 3 or 7. So, when we get the…the updated actual OSHA answer, we will update that…that information for you.

Question #2. The OSHA PowerPoint stated that "All non-VPP refineries will be inspected over time, using the CHEM NEP model." What is the actual time period now anticipated by OSHA to accomplish this?

I'm also going to read 3 and 4, because we got the same response. The OSHA PowerPoint entitled "Refinery NEP Summary" dated 10…February 10, 2015, states that "Significant process incidents continue to occur in the refining sector, killing and seriously injuring workers." Does OSHA continue to support this statement?

And Question 4. Does OSHA support the EPA's proposal to rescind safeguards under the Risk Management Program, published at 83 Federal Register 24.850 on May 30, 2018? If OSHA provided comments to EPA on this proposal, please provide them if they are available to CSB.

For those three questions, OSHA advised the CSB that they would not answer these questions.

For the remaining questions, with the exception of Question #9, which I'll pull out separately, we just have not yet received a response from OSHA. They are intending to give us one.

Question 5. Has OSHA, or OSHA state plan agencies, conducted any programmed inspection of alkylation units in refineries that utilize HF acid alkylation during Fiscal Year 17, 18, and 19 to date? If so, which facilities, and what were the results of such inspections?

#6. Please provide, to the extent feasible, any data on how many inspections PSM-trained compliance officers have conducted relative to the overall number of PSM inspections for the latest available time period.

Question 7. How many compliance officers does OSHA currently have?

How many PSM-trained inspectors does OSHA currently have?

And it says: "See page 12 of Recommendations Response Evaluation by CSB Staff."

Question #8. How many compliance officers do state plan states currently have? How many PSM-trained inspectors do state plan states currently have?

Question #9. On the latest OSHA regulatory agenda, what is the status of PSM revision? OSHA has listed PSM revision as a "long term action" with the next listed action as "undetermined".

As I said, the first…or the Questions 2, 3, and 4, they are the client's answer. Questions 5 through 8, they have not responded, but we anticipate response. They were just not able to get it prior to this date.

And, with that, I will turn it back over to you, Dr. Kulinowski.

MEMBER KULINOWSKI: Thank you, Mr. Barbee. So, we have a number of options for closing a recommendation. One is "Closed – Acceptable Action." So, can you just pull out for us, summarize, why this is a "Closed – Acceptable Alternative" rather than "Closed – Acceptable"?

CHUCK BARBEE: I'm very glad you asked. Yes, we can. So, it comes down to sub-paragraph B. And that is where we said, "Conduct or have conducted comprehensive inspections such as those under the

Program Quality Verification, or PQV, program at facilities identified as presenting the greatest risk."

So, their National Emphasis Program, the current one, the revised PSM [inaudible] one, what they have are a list of dynamic questions. These are based on data that they brought back from previous inspections that say…that have identified the highest percentages of where there will be problems.

So, what you're getting is a spot-check based on those dynamic questions. You're not getting a comprehensive inspection, which is what we asked for. Now, they did say that a comprehensive inspection takes about 1,200 person hours. And the…the revised version, or their dynamic question process, is a little over 400 person hours. So, they're saving that. That's not what we asked for. We asked for the comprehensive inspection.

So, as a result of that, they don't get the full "acceptable action." We…but we…we definitely want to give them credit. They've come…they've…they've addressed it very, very well. So, we do want to give them "acceptable alternative".

MEMBER KULINOWSKI: Thank you. Member Ehrlich, do you have any questions [inaudible]?

MEMBER EHRLICH: Only to the extent the…since the questions haven't been answered and they probably will be, does it make sense to take this action now?

CHUCK BARBEE: To answer that question, I would say that it does because the evaluation that we have currently… The information here already supports the "Closed – Alternative Acceptable Action". The additional information, it…it gives clarity to that, but it doesn't… Regardless of what the answer is, it will not change the outcome of what we asked for.

MEMBER EHRLICH: Is that satisfactory to you, Member Engler?

MEMBER KULINOWSKI: Well, you should address questions to the Chair, not to other members. It's now Member Engler's turn to ask these questions himself[?].

MEMBER ENGLER: In response to Member Ehrlich, I wouldn't have made the motion… I might not have made the motion to approve the staff recommendation if I had disagreed with the recommendation. I might have [inaudible] discussion. But in this case, I didn't because I was prepared to support it. I mean, this recommendation was first made some 12 or 13 years ago.

MEMBER EHRLICH: Right.

MEMBER ENGLER: And so, while time is a continuum, the time period we were looking at, you could…you could look at, at some

point, as the context at a particular stage and another stage. And I wanted to, frankly, use the discussion here today to highlight some of the concerns moving ahead around this issue.

I mean, we've investigated a number of refinery…major refinery incidents which are, of course, on the CSB website, that we've been…you know, that have involved, for example, as I believe it, major near-misses, including potential exposure to hydrofluoric acid. We're looking at a regulatory situation where, even if the statistics are doubled, and I'll come back to this chart…Thank you for preparing it. That there are significant resource deficiencies.

So that if, for example, and I'm referring to this chart posted and that was outside on the table, there are roughly 135 refineries as of January 2019 in the United States, at least as listed by the US Energy [inaudible] Agency. So, to see that there have been only eight inspections raises a set of further…further questions. Maybe that number will go up. The 8 in 2017, the 8 in 2018…of course, the trend may be upward, so, I look forward to seeing more of that actual data. Because I've also seen data, not from CSB sources, suggesting that the number of compliance officers is actually now declining.

Under state refinery inspections, it's notable that in 2017 and 2018, under the California State OSHA plan, there were 12, 11, and then, most recently, 7 inspections. And that percentage of inspection…of refineries inspected is rather significant, given that there's only approximately 14 refineries in the entire state of California. So, those results are more…are more impressive.

So, it causes concern about what the trends are of staffing within the Occupational Safety & Health Administration. This may apply even more broadly than PSM inspections.

And so, when you look at that…that…this data, in combination with the fact…and please, if anyone can correct me if I'm wrong, on the CSB staff, that we have not yet received a response other than an acknowledgement of receipt from Federal EPA on our recent letter concerning asking EPA to look at the issue of hydrofluoric acid alkylation and what risks may it pose to workers, community, and the industry infrastructure. I don't believe we've had a response…a substantive response saying they will indicate or they will do such a study.

Combined with the pending EPA revised accidental release rule, which I looked up as of September 12th, I believe, is now at the Office of Management and Budget. There is a clear trend here to roll back safeguards for the American people, the workers, the

communities, endangering the industry infrastructure. I mean, we've seen destructive incidents at…at three refineries of late, at ExxonMobil in Torrance, California, now PBF, at Husky in Superior, Wisconsin, and most recently in Philadelphia, at PES, which was…may have been a factor, which led to the permanent shutdown of that refinery.

So, when these incidents happen, they not only endanger health, safety, and lives. They seem to also pose major economic consequences. So, I wanted to have this conversation in order just to highlight these issues. Because, after all, this is what the CSB is all about, trying to move forward to prevent these kinds of incidents from happening again.

It's with deep concern I raise these issues. It's within the context of what is quite clearly a deregulatory agenda. And I'm very proud of the CSB for consistently standing up for safeguards. You look at our history on the HF issue, if you look at our comments to EPA, where we felt that even the proposal by…under the Obama administration was essentially modest in nature, the CSB continues as an independent agency to stand up for appropriate degrees of protection for workers, communities, and the industrial infrastructure.

So, I think at this point, with that, I would just like, through the Chair, to request that, at the October meeting, we continue this conversation as…especially as information comes in from OSHA on these other outstanding questions.

MEMBER KULINOWSKI: Noted. Any Member may request an agenda item to be placed on the agenda for the next business meeting. Any additional thoughts?

MEMBER ENGLER: No, thank you.

MEMBER KULINOWSKI: Sounds like our discussion has come to a conclusion. We have a motion on the floor. So…

[UNIDENTIFIED]: Five minutes.

MEMBER KULINOWSKI: Do we vote first and then…? Yeah, okay. So I will now call for a vote. On the motion to accept the Recommendation Status Change proposal on item 2005-4-I-TX-R8, to the Occupational Safety & Health Administration from the BP America Texas City Refinery explosion, the motion is to accept the proposal. Member Ehrlich?

MEMBER EHRLICH: In favor.

MEMBER KULINOWSKI: Member Engler?

MEMBER ENGLER: Yes.

MEMBER KULINOWSKI: And I also agree, so motion carries. Thank you very much, Mr. Barbee.

We are now going to take a very brief, two- to three-minute recess, and we will reconvene here at 11:57. Thank you. [BREAK]

MEMBER KULINOWSKI: Thank you for your patience. We are back in session. The last item on our agenda is a discussion about the inclusion of names in our public reports. So, I would like to discuss a decision that was undertaken by the agency to remove a memorial dedication page in the CSB's reports.

In June, we released an investigative report on the Pryor Trust gas well explosion in Oklahoma, which killed five workers. Neither the Pryor Trust factual investigative update nor the final report included a listing of the deceased workers, as had been the policy for at least some reports in the past.

We also released a final report of the 2014 DuPont LaPorte investigation that also did not include a memorial page listing the four workers who were fatally injured as a result of that incident. So, that report's factual investigative update did include the names, I believe, in a footnote.

We discussed this at the last meeting and, before that meeting, and in duration between the two meetings, the CSB received correspondence from United Support & Memorial for Workplace Fatalities, as well as a joint letter with several signatories,

asking for the inclusion of the names of the deceased workers. In my conversations with stakeholders, I learned how important this issue is to many of the people who have lost loved ones to workplace incidents.

But I had some concerns about the implementation of such a policy. So, at our last Board meeting, I directed our General Counsel to come back to the Board with a recommended course of action informed by laws, regulations, other government…Federal government agency policies, and other relevant information. The Office of General Counsel's review did not uncover any insurmountable barriers to reinstating the names.

Therefore, a majority of the Board voted to pass Notation Item 2019-62 to amend Board Order 47, the CSB's Accident Victim and Family Communication Plan, with a new section that reads:

"Publication of Names of Deceased. The CSB policy is to publish in its investigation reports the names of all persons who have died as a result of the accidental release. The IIC, or Investigator in Charge, is responsible for confirming that no immediate family members object to such publication. While the CSB will strive to respect a family's wishes, it reserves the right to publish the names of persons as it deems appropriate."

I, personally, do not support the inclusion of a separate dedication page, but, in the end, I was not swayed by arguments to exclude the names altogether, if verified by our staff with notice to the families. The names constitute basic factual information and help to personalize the incidents for those seeking to learn from them. It also means a lot to the families.

With this amendment, inclusion of the names of the deceased, as factual information related to the incident, is now a policy rather than a sometime practice. I thank all who expressed your position, and to the staff, and my fellow Board Members, for your participation in this decision.

Does either of my fellow Board Members have anything else to add on this subject? Member Ehrlich.

MEMBER EHRLICH: Only to the extent that I question whether the IHCC…or the IIC is the person that should be responsible for that. I don't see that as a responsibility of the incident commander and I so noted in my dissent.

MEMBER KULINOWSKI: Thank you. Member Engler.

MEMBER ENGLER: Only to say that I appreciate the support for this. I think it's the right thing to do for the reasons that you have noted. And can I submit a written statement for the record,

rather than reading my statement, because you basically captured the essential reasons that this is the right course of action?

MEMBER KULINOWSKI: Yes, we'll make sure that's included in the record. Okay. Is there any other new business from either of the members? Member Ehrlich.

MEMBER EHRLICH: No.

MEMBER KULINOWSKI: Member Engler.

MEMBER ENGLER: Yes.

MEMBER KULINOWSKI: Please proceed.

MEMBER ENGLER: While we have enacted a new policy governing future CSB reports, an outstanding matter is whether to include in our two most recent reports the names of those who lost their life. I support this, and would like to make a motion so we may have discussion on the motion.

MEMBER KULINOWSKI: Please proceed.

MEMBER ENGLER: So, my motion is to amend the two most recently approved and published CSB investigation reports to include the names of all persons who died as a result of those accidental releases. These reports are: gas well blowout and fire at Pryor Trust well, 1H-9, Pittsburgh County, Oklahoma, CSB Report #2018-01-I-Oklahoma, and secondly, the toxic chemical release at the DuPont

LaPorte chemical facility, LaPorte, Texas, CSB Report #2015-01-I-Texas.

These individuals are at DuPont in Laporte, Texas, incident date…and I think we're aware of who they were, so, I will not read the list now. And at Pryor Trust in Pittsburgh County, these are names that are…that we have already, I believe.

And so, the motion is essentially to include in these two specific reports, the names of the individuals who died in connection with the incident.

MEMBER KULINOWSKI: I think I understand the motion. Motion is to amend the reports to include the names.

MEMBER ENGLER: Yes. Maybe I should…maybe I should… Should I reread, for the purpose of clarity, what this precise amendment is? Just summarize which investigations are…

MEMBER KULINOWSKI: Yes.

MEMBER ENGLER: To amend the two most recently approved and published CSB investigation reports to include the names of all persons who have died as a result of those accidental releases. These reports are the gas well blowout and fire at Pryor, and the toxic release at the DuPont LaPorte chemical facility.

MEMBER KULINOWSKI: Thank you. Is there a second?

MEMBER EHRLICH: I'll second the motion.

MEMBER KULINOWSKI: Thank you. Now open for discussion. Member Ehrlich.

MEMBER EHRLICH: Well, only to the extent that I just expressed my concern that the incident commander is being asked to perform a function which I don't believe falls within that responsibility. How…if we agree to this, does that mean it's going to be the IIC that does it anyhow?

MEMBER KULINOWSKI:So, when you…when you say…when you say "incident commander", you mean the incident in charge…

MEMBER EHRLICH: Yeah.

MEMBER KULINOWSKI: Or the investigator in charge.

MEMBER EHRLICH: IIC, yeah.

MEMBER KULINOWSKI: Okay. So the investigator in charge is not the incident commander for the scene.So, your concern is that the investigator…that this is not part of the investigator in charge's…

MEMBER EHRLICH: Responsibility.

MEMBER KULINOWSKI: Responsibility.

MEMBER EHRLICH: That's correct.

MEMBER KULINOWSKI: Okay. Member Engler, do you wish to respond?

MEMBER ENGLER: The incident…the investigator in charge is the chief person for the incident. They are perfectly empowered to delegate further research and contact with families to other staff members. Who, in the alternative, would be the appropriate staff person, Member Ehrlich, to…to perform this function?

MEMBER KULINOWSKI: So I don't want to…

MEMBER ENGLER: Through the Chair.

MEMBER KULINOWSKI: …read the [inaudible] motion…or on the notation item that passed. The policy is now to include the names going forward. The question on the table is whether we're going to go backward and amend reports that have already been published. I have a procedural question for the General Counsel. Is it as simple as just amending them? Do we need to rescind them and then revise them and reissue them?

TOM GOONAN: I would recommend that they be reissued.

MEMBER KULINOWSKI: So, does that mean that we have to make a friendly amendment to the…the motion?

TOM GOONAN: We can.

MEMBER KULINOWSKI: Okay. Then let's make a friendly amendment to the…to the motion, to reissue the report. Rescind and reissue the report.

MEMBER ENGLER: Is that…

TOM GOONAN: Yes, that's permissible.

MEMBER ENGLER: Accepted.

MEMBER KULINOWSKI: Okay.So the issue is, do we pull the reports down, direct the staff to do this work, and then reissue the reports?

So I have some concerns about this, primarily in terms of staff resources. So, when we pull these reports down, the staff are going to have to go through the process that we laid out in our new amended Board Order 47, to contact the families, ensure that they're okay with publishing their names, and find somewhere in the report to do that, some way to do that.

Our amendment that we passed, our change to the policy, does not specify how that is done, meaning how the names will be included, only that they be included. And I think it's appropriate to allow the staff to consider how that's done.

So this will require the use of staff resources at a time when, as I mentioned before, we have ten open investigations and it basically requires them to go back and do something…to fix something that happened in the past. We have done that before. We have, you know, pulled reports out. Those were for rather more substantial corrections that needed to be made than this.

So, the issue of going forward with a new policy is easier for me than the issue of, you know, causing a lot of staff work.

So, Member Engler, do you have…your motion does not specify, as I…as I understood it, any particular timeframe upon which this…by which this needs to be done. Is that correct?

MEMBER ENGLER: That is correct.

MEMBER KULINOWSKI: Do you have an expectation regarding that?

MEMBER ENGLER: I would hope that it would be done in a reasonable amount of time. But I'm not… Given…given the strain on CSB investigation resources right now, I do not have a particular timeframe in my head, just that it needs to be accomplished. I think we're aware…we're clearly aware of who the individuals are in past investigations and perhaps in one or two [inaudible] contact with some of the families already in the course of the investigation. So, I'm not…although I'm not…I certainly think it is…everything is work. I think overall the value of doing this, and the importance to the investigation report, makes it worthwhile.

MEMBER KULINOWSKI: Thank you. Member Ehrlich, any additional points?

MEMBER EHRLICH: No. Thank you.

MEMBER KULINOWSKI: Any final thoughts? So, the discussion is concluded. I will call for a vote on the motion to rescind and

revise, reissue, the two investigation reports that were passed recently, Pryor Trust and DuPont Laporte, to include the names in compliance with our additional…our new policy. Member Ehrlich?

MEMBER EHRLICH: Inasmuch as I issued a dissent on the original motion, I'm going to abstain from voting.

MEMBER KULINOWSKI: Member Engler?

MEMBER ENGLER: Yes.

MEMBER KULINOWSKI: And I will support the motion. So the motion passes. As the Interim Executive, I will direct the staff to make the change and to do it on a time scale that is not onerous to them, given their other many [inaudible] responsibilities.

So, that concludes our business. I now would like to open the floor for public comment related to the CSB's activities. Please present your comments within three minutes. No one has signed up to…on the list, but we will begin with people in the room, if you would just like to raise your hand and be acknowledged. And then, after that, we will go to the phones.

Those listening on the phone can also email your comments to email address meeting@csb.gov. And someone will be catching those and bringing them up to the table.

So, any questions or comments in the room? Yes.

ELISE KELLER: Elise Keller with ASTM. Can you please speak to the timing of releasing the Chemical Reporting Rule?

MEMBER KULINOWSKI: So, the Chemical Incident Reporting Rule, we are under a court order to release that by early February 2020. I believe it's February 3rd or 4th. And the CSB staff are hard at work on a draft rule, which will be published when we're able to do that. It is our intention to get the rule out on time.

ELISE KELLER: Thank you.

MEMBER KULINOWSKI: Okay, no more questions in the room. Any questions on the phone?

OPERATOR: Thank you. If you have a question over the phone, please press *1 on your telephone. If you're using a speaker phone, you may need to pick up the handset first, before pressing numbers. Once again, if you have a question, press *1 on your phone. And our first question is from Tim Gabelhouse.

TIM GABELHOUSE: Not so much a question. I just want to acknowledge Manny Ehrlich for his recent presentation in Colorado to the LEPC Conference. It was very well-received and much appreciated.

MEMBER EHRLICH: Thanks, Tim.

OPERATOR: Our next question from Peter Dooley.

PETER DOOLEY: Yes, this is Peter Dooley from National COSH. And we wanted to acknowledge the CSB working on the issue of identifying workers who were fatally injured in the incidents that were being investigated by the CSB, including those names in the reports. We believe this is really an important policy that you have acted on and passed. And it…and it helps assure that workers who lose their lives on the job will be remembered and documented. And…and we also believe that this policy should be a model for all federal, state, and local agencies in dealing with workplace fatality incidents and…and identifying those workers who were fatally injured.

And, of course, it is a true sort of memorial for those families and…and close friends of the deceased workers. So we appreciate your diligence to this issue and it's really a model for others to follow. So, thank you.

OPERATOR: Our next question from Fatima Hussein.

FATIMA HUSSEIN: I think… This is Fatima Hussein from Bloomberg Law. I had a question for the Board. I'm wondering if the CSB intends to investigate the explosion that occurred in Farmington, Maine, yesterday.

MEMBER KULINOWSKI: The incident that you're referring to did come into us through our incident screening program. I think this

was a natural gas or propane leak at…not at an industrial facility. We are following up and…so that I…I don't have a decision on that one at this time. We are gathering more information on that.

FATIMA HUSSEIN: Thank you.

OPERATOR: And, briefly, I do apologize to Peter and Fatima for mispronouncing their names. Our next questioner is Tonya Ford.

TONYA FORD: I just want to thank you on behalf of United Support and Memorial for Workplace Fatalities, for amending and…and…and adding in, involving the family members in your reports, as I truly know it means a lot to the families, to make a difference, even if it puts a face, puts a name, and gains a recognition and…and makes a difference, sort of turning their negative and tragic loss into something positive. So, we definitely want to say thank you for that.

OPERATOR: And, once again, if you have a question, please hit *1 on your phone. There are no more questions over the phone.

MEMBER KULINOWSKI: Any additional questions in the room? Okay, then, thank you to everyone who provided a comment or a question here today.

And I want to thank everyone else who visited us today, joined us on the phone, and the staff who work very hard to put these meetings together. I'd also like to thank each of my fellow Board

Members for attending today's meeting. I appreciate everyone's comments, the deliberative discussion that we had, and I look forward to our next meeting, which is going to be on October 30 of 2019. That's a short six weeks from now, but it will put our business meeting schedule back on track following the government shutdown in December 2018 and 2019. We would normally have had a public meeting in January, 2019, but were unable to do so. So we kind of got out of step…off track, and this will help us realign.

Please continue to monitor our website; sign up for CSB news alerts for information of the meeting, time and agenda. And continue to check www.csb.gov, the Federal Register, or sign up for email alerts for additional details about the agenda for the next business meeting.

I'd just like to conclude by saying that all of us here share a strong interest in preventing chemical incidents in the future. That's why we do what we do.

I thank you for your attendance, and with that, this meeting is adjourned.

OPERATOR: Thank you, ladies and gentlemen. This concludes today's conference. Thank you for your [inaudible]. You may now disconnect.