Vanessa Allen Sutherland: Good evening, and welcome to the public meeting hosted by the U.S. Chemical Safety Board, or the CSB. I'm Vanessa Allen Sutherland, the Chairperson of the Chemical Safety Board. Joining me today are: Board Members Manny Ehrlich, Kristen Kulinowski and Rick Engler; our investigative team, whom you will hear from in a moment, and we will introduce them later, is immediately to my left. Also joining us is our Acting General Counsel, Kara Wenzel. Um, and thank you all for your participation.

The CSB is an independent, non-regulatory federal agency that investigates major chemical accidents at fixed facilities in order to promote prevention of those accidents. The investigations examine all aspects of chemical accidents, including physical causes related to equipment design, as well as inadequacies in regulations, industry standards or safety management systems. Ultimately, we issue safety recommendations, which are designed to prevent similar accidents in the future. The purpose of this evening's meeting is for the CSB's investigative team to present to the Board their preliminary findings and areas of future examination. The Board will then hear from a panel of experts, who will discuss California's new Process Safety Management reforms and related issues. At this time, please allow me to go over this evening's agenda.

Following opening statements from CSB Board Members, we will hear remarks from elected officials. Included in those officials will be Congressman Ted Lieu, Mayor Patrick Furey, and a representative from the office of Congresswoman Maxine Waters. We will then hear the investigative team's preliminary findings from the ongoing investigation at ExxonMobil. Following the team's presentation, the Board will be given the opportunity to ask the team questions, if there are any. Following the Board's questions, we will hear a presentation from the Torrance Refinery Action Alliance, and we'll have the opportunity to ask questions.

We will also hear from a representative, a general manager at the ExxonMobil refinery. Then we will take a short break to prepare for the final presentation on Process Safety Management reforms in the state of California. The

investigation team and Board Members will then be able to ask the panel participants questions.

Finally, we will open the floor to comments from the public. If anyone in the audience wishes to comment publicly after the panel presentation, please sign up on the yellow sheet in the check-in area, which was right as you enter this room, and I will call your name at the appropriate time. I will first call those that have signed up, and then [I will] open the floor to anyone who wishes to speak. Those watching the webcast can submit comments to meeting@CSB.gov to be added to the final record. Please note that we will have to limit public comments to three minutes each. Our meeting is slated to end at 10 o'clock.

Male Commenter: Where is the webcast being streamed?

Vanessa Allen Sutherland: (There is a link on our website that you can click on to have access to the webcast.) Before we begin tonight's presentations, I'd like to point out some safety information and a couple of other pieces of updates. For anyone who is coming in now, there is another overflow room, as Amy mentioned. It is in the library meeting room. You will be able to watch there, as well as provide comments.

I'd also like to take a quick moment to note the locations of the exits. If you were to go down the middle aisle, they are both to your left and right at the end of the hall. I'd also like you to take a moment to mute your phones, or put them on "stun," so that these proceedings are not disturbed. [Laughter.]

Thank you for that. The restrooms are also straight down the middle row and to the left, right by the entryway.

On February 18th, 2015, two ExxonMobil workers were injured when an explosion occurred in the refinery's ElectroStatic Precipitator, or ESP. The ESP is a piece of equipment used at the refinery to control air pollution. Over a period of several days, and, unbeknownst to workers, hydrocarbons had accumulated inside the ESP. The result was a blast that dispersed large quantities of catalysts up to a mile away from the facility. The CSB found that large pieces of debris from the explosion were

thrown into other units of the refinery directly surrounding the ESP. One of these pieces of debris affected scaffolding in the refinery's alkylation unit, narrowly missing a tank located approximately 80 feet from the ESP, containing tens of thousands of pounds of modified hydrofluoric acid, or MHF. The CSB determined that, had the debris impacted the tank, a rupture could have been possible, resulting in a potentially catastrophic release of extremely toxic MHF into the neighboring community. Thousands of people live in the area surrounding the facility where this could have potentially occurred. If there were such a release, a major release of this toxic chemical could have had injurious and possibly deadly effect. Considering that worst case scenario is part of the mission of the CSB, and it is part of the reason that we are here this evening. Many of you here tonight were affected by last year's explosion. You came outside to find a thick layer of what looked like ash covering your cars, homes and front lawn. Others in the audience work at the facility, and have first-hand knowledge of how serious an accident of this nature could be, and was, and how much worse it might have been. This evening the CSB is making its preliminary findings publicly available. We encourage plant management and workers to use this information to ensure the safe operation of the facility, but, on an even broader level, we are here this evening to learn more from the actions that the State of California has taken to ensure the safe operation of its refineries, and to learn more from our public comment period that can help us in completing a thorough and comprehensive investigation. I look forward to a lively and participatory discussion with our panelists and an informative presentation from our investigative team. I will now recognize my fellow Board Members for any opening statements, if there are any. Member Engler?

Member Engler: Thank you, Chairwoman Sutherland. I'm glad to be here. I want to hear your concerns, not only about the safety health, and environmental impacts, but other concerns that you might have, which are relevant to securing a safe and secure future for all of us. Thank you.

Chair Sutherland: Thank you, Member Engler. Member Kulinowski?

Member Kulinowski: Thank you, Chair Sutherland. I'd like to thank you all for coming. It is very gratifying to see the intense interest that the community has in this incident. I'm looking forward to the team's presentation that they've been working so hard on, and I hope that it will answer some of the many questions that you may have about the impacts of this incident. I'd also like to prospectively thank the presenters from our panel for what I'm sure will be an informative session. Thank you.

Chair Sutherland: Thank you, Member Kulinowski. And, lastly, Member Ehrlich?

Member Ehrlich: Thank you, Madam Chairperson. Welcome. I'm glad to be here with you tonight. I hope all your questions are answered, and I want to tell you that you have an opportunity here, as I do, to work with one of the best investigative teams. In our agency we have two fine sets of teams, one in Denver and one in Washington. And I've been on the Board for a year, and I'm very proud to be able to work with them, as well as this Board.

Chair Sutherland: Thank you very much, Member Ehrlich. At this time I would like to ask and invite elected officials who are here to deliver their opening statements. I would first like to start with Congressman Ted Lieu, who was elected to California's 33rd Congressional District, including parts of the City of Torrance. Congressman Lieu has taken great interest in the series of incidents at the ExxonMobil refinery that began in February 2015, and has continued to be supportive of the CSB's ongoing investigative work. Congressman Lieu, thank you for joining us here this evening, and for participating in this effort. You may begin.

Congressman Lieu: Thank you, Chair Sutherland, and Board Members. Welcome to my hometown of Torrance. I know that you know this, but I want the audience and those who are watching this to know, that CSB Board Members are all nominated by the President, confirmed by the Senate, so, you're looking at dedicated professionals and public servants. Thank you for what you do. I'd like to thank Torrance Council Mayor Pat Furay, [and] the Council Members, for their work on this issue and for

opening up these beautiful chambers, and also to Representative Maxine Waters. We have worked closely together on this issue, trying to seek additional cooperation from ExxonMobil, to get to the bottom of what has happened. I'm going to talk about two issues today. The first is the dangers of modified hydrofluoric acid. And second, the subpoenas the CSB has issued. Before I do that, I do want you to know that I toured the ExxonMobil refinery twice. There are many hard-working employees there, and their families, and I know that we all want this refinery to go back to full operation. We also want it to be safe, because the employees there are going to be the first casualties of any catastrophic incident. On the screens here are a map of what would happen if there were a catastrophic release of modified hydrofluoric acid. It's based on information ExxonMobil provided in their EPA filings. You see a kill zone of between two to three miles, about 250,000 people at risk. And what happens when [MHF] is released, is it forms a vapor, and it will travel with the way the wind blows, and when people come in contact with it, they will be severely injured, or they will die. And, what's supposed to happen with [MHF] is, additives are supposed to be put in. That's why it's called, "modified." And it's supposed to fall like rainwater to the ground. Only problem is: No one's really quite sure if that works. And we doubt it works, because you've got this map here, that shows that ExxonMobil itself believes it doesn't work, because you've got a kill zone—of two to three miles of people that are going to be at risk if just two percent of the [MHF] at the refinery would be released. If there was more, that would be a much bigger circle. I'm working on legislation to ban or phase out this dangerous acid. Most refineries in the United States do not use modified HF. In California, of the over a dozen refineries, ExxonMobil is one of only two that still uses [MHF]. I would like to see a ban, or phase-out of that. And I think there's an opportunity here, because you've got a new owner potentially coming in with ownership of this refinery. We're also going to be working with the City of Torrance, and I commend the City Council for directing their city staff to work with the South Coast Air Quality Management District to look at a ban or phase-out of [MHF], because that agency does have the authority to do so. In the 1990's they, in fact, did do it, and then that was

overturned on a technicality, but they do have the power to make changes at this refinery, including a ban or phase-out of this dangerous chemical. And I want to thank the Torrance Refinery Action Alliance for all that they have done to raise awareness. I believe in karma. In high school I hated chemistry, and now I've had to learn a lot about [MHF]. So, in terms of what could've happened last February, it's pretty chilling. My kids had to shelter-in-place at their school, and, thank goodness, that's really all they had to do, because the 80-thousand [pound] piece [of] equipment that got launched from this explosion missed the tank of hydrofluoric acid. Had it hit that tank, no matter how sturdy that tank was, if an 80-thousand [pound] piece of equipment runs into it, it's going to rupture, and it could've resulted in a pretty catastrophic disaster. Um, all of these have low probabilities, and refineries are not supposed to explode, but this one did, and, as your Board has determined, in your preliminary findings, it was due to management failures. We hope ExxonMobil learns from this and make it safer.

But it does really raise the issue of just how dangerous having all this [MHF] near population centers is to the community. And then, let me conclude, now, about the issue of subpoenas. It is very troubling to Representative Waters and I that ExxonMobil has refused to cooperate and answer about half of your requests. We're just about to write a letter, actually, to the U.S. Department of Justice, asking them to intervene. We're very pleased that you have now informed us that, before we even sent a letter, the DOJ has agreed to intervene, and they are going to be compelling ExxonMobil to provide information. And you're going to hear from ExxonMobil today, and hopefully, you can ask them what is it that they have to hide, and with that, thank you for your public service. I look forward to the rest of this meeting.

Vanessa Allen Sutherland: Thank you Congressman Lieu. I would now like to welcome Mayor Furey and hear your opening remarks.

Mayor Patrick Furey: Thank you, and goodnight. I am Mayor Patrick Furey from the City of Torrance, and I'm joined here today by every member of the City Council, sitting in the front row here,

because this is a very important meeting tonight. On behalf of my colleagues, I want to thank you, Madam Chair, and the Chemical Safety Board Members, for convening the public meeting here in our city. Thank you, also, to Congressman Ted Lieu, and Congresswoman Maxine Waters, for their efforts in helping us to keep our community safe.

The February ExxonMobil Torrance refinery explosion and the subsequent incidents was a real eye opener for our city, and our residents. We are keenly aware of the concerns of our community, and we share many of those very same concerns. Shortly after the explosion, I and other city representatives met with the former Chair of the Chemical Safety Board and his team. At that time, we were assured that there would be a comprehensive investigation to determine the cause of the incident and what could be done to avoid a re-occurrence.

We promised to work together to ensure the safety of the Torrance community, and we have been advised that it could take up to 18 months before a determination of cause would be made, and that we would be kept up to date on the findings. So, I want to thank you for being here, and keeping us up to date on the findings as they go along. Since that time, we have had several telephone conferences and meetings with CSB [Board] Members and investigators. In addition, the city has provided substantial and historical documentation to the Chemical Safety Board, and explicit directions where other information could be obtained, hopefully to help your investigation of the refinery, and we look forward to the presentation tonight. But interaction with the CSB had not been our only action concerning refinery safety.

We've had countless meetings with all of the regulatory authorities, ExxonMobil officials, and even PBF energy officials, the proposed purchaser of the refinery, to discuss our safety concerns at the refinery. Additionally, the city is working with the South Coast Air Quality Management District to evaluate modified hydrofluoric acid versus sulfuric acid, and to explore other catalytical methodologies. But these studies will require time, and deal with longer time evaluations. In the interim, I hope

that the Chemical Safety Board has more short-term recommendations to resolve the concerns that it has identified.

It goes without saying that all of our efforts concerning the refinery is to keep Torrance, its residents, visitors, and businesses safe. I do, however, feel compelled to address a misconception of reporting in the media. I can assure you and the public that there had never been a cover-up by city officials concerning the use of hydrofluoric acid at the refinery. The record is clear that the Torrance City Council was always advised by staff of implementations and/or any changes in the formula of modified hydrofluoric acid before any such changes were implemented.

Furthermore, it was not the city that in any way authorized any such modifications. It was the Los Angeles Superior Court, which had jurisdiction under a consent decree, in consultation with a safety advisor, that authorized any and all modifications. Going forward, in an effort to better inform our community, we have developed an informational page on our city website, TorranceCA.Gov, and the website contains information we have gathered on recent incidents, and links to various authority websites with information on upcoming meetings and hearings concerning the refinery.

Lastly, the city is pleased to be able to make this meeting public, and the Chemical Safety Board accessible to the Torrance city community. As part of that effort, we are live-streaming the hearing on our city website right now, so that members of our community can merely go to our website and click on [it] and watch us live as we proceed. Again, I thank the Chemical Safety Board for your diligent work in your investigation in the ExxonMobil Torrance refinery, and for taking the time to share those findings with our community tonight. Thank you very much.

Vanessa Allen Sutherland: Thank you very much, Mayor Furey. Congresswoman Maxine Waters was unable to join us here tonight, but a representative from her office is here. Mr. Hamilton Cloud will be here, providing comments and a statement, on her behalf. Elected in November of 2014 to her 13th term in the U.S. House of Representatives in the 43rd

Congressional District of California, Congresswoman Waters represents a large part of South Central Los Angeles, including parts of the City of Torrance. Mr. Cloud, thank you for joining us this evening on behalf of Congresswoman Waters. You may also begin.

Mr. Hamilton Cloud: Thank you, Madam Chairman. Congresswoman Waters, as you mentioned, could not be here tonight. She is on an airplane back from Washington, DC, but she asked me to be here tonight to read this statement to you. I thank the U.S. Chemical Safety Board for holding this public meeting on its ongoing investigation of the ExxonMobil refinery in Torrance, and I appreciate all of the hard work the CSB staff has put into this investigation. I especially appreciate the CSB's willingness to listen to the views and the concerns of the people of Torrance. The people of Torrance deserve to have their concerns heard. Local residents deserve to have the opportunity to share their experiences living near the ExxonMobil refinery. Many Torrance residents appreciate the jobs that ExxonMobil has provided in Torrance. However, there is a strong belief that we cannot sacrifice safety for jobs. The community has indicated to me that they would like to have the jobs, but they must have safety.

ExxonMobil's Torrance refinery was built in 1929, and now covers 750 acres, and employs approximately 650 employees, and 550 contractors in our community. Unfortunately, it also has a disturbing history of safety problems, including fires, explosions and leaks. These incidents are causing growing concern in the community. On February 18th, 2015, there was a major explosion at the refinery, which injured workers, registered as a magnitude 1.7 earthquake, and covered much of the surrounding community with ash. The CSB launched its investigation of this explosion in response to a request letter from my colleague, Congressman Ted Lieu, and myself.

Since that time I have followed the progress of the investigation with keen interest and concern. Moreover, two members of my staff, Kathleen Sengstock, who works in my Washington office, and Hamilton Cloud, who works in my district office, have met with CSB officials and have been briefed on the investigation. I was deeply concerned

by the revelation of CSB Chairperson Vanessa Sutherland, that an 80,000 pound piece of equipment flew nearly a hundred feet during the explosion and almost hit a tank of hydrofluoric acid. The CSB determined that, had this piece of equipment hit the tank, it could have released a cloud of toxic acid resulting in serious injuries, and even deaths, to thousands of people in our community. Indeed Chairperson Sutherland described the incident as a "near miss," which could have been, quote: "catastrophic". I am troubled by the sheer number of recent incidents at the refinery that raise safety concerns.

For example, the refinery experienced a small leak of modified hydrofluoric acid on September 6th, and the release of a large steam cloud on October 23rd. Because of these incidents, Congressman Lieu and I asked the CSB to expand its investigation to include all areas of Process Safety Management at the refinery. On August 13th, the California Division of Occupational Safety and Health, Cal/OSHA, issued 19 citations against ExxonMobil for health and safety violations at the Torrance refinery, and imposed $566,600 in associated fines. All but one of the citations were classified as serious.

Astonishingly, ExxonMobil appealed all 19 citations. ExxonMobil has refused to fulfill numerous voluntary document requests and subsequent subpoenas from CSB. ExxonMobil's unwillingness to cooperate with CSB is unacceptable. Congressmen Lieu and I wrote to ExxonMobil executives, expressing deep concerns about the company's efforts to push back against the investigations by both Cal/OSHA and the CSB, including its appeal of all 19 Cal/OSHA citations, and its failure to fulfill CSB's document requests and subpoenas. In addition, we urged ExxonMobil to stop denying CSB investigators access to witnesses in locations inside the refinery relevant to its investigation.

I hope the CSB will provide us with an update tonight on the status of these subpoenas, and indicate whether or not ExxonMobil has been more forthcoming in response to CSB's requests for information and access. I recognize that ExxonMobil has agreed to sell the Torrance refinery to PBF Energy. The sale is expected to close during the

second quarter of this year. However, the sale is contingent upon the successful completion of repairs necessitated by last February's explosion.

Meanwhile, the refinery is ExxonMobil's responsibility, and ExxonMobil must be required to ensure that the refinery is operated safely for the protection of its workers and the surrounding community. I look forward to hearing the recommendations of the CSB regarding actions that need to be taken to make the ExxonMobil refinery safe and prevent future accidents.

I also look forward to hearing the views and concerns of our community tonight about the refinery's future. Finally, if it is the conclusion of the CSB [that] this refinery will not be made safe for the community, then the CSB should inform the community that the refinery should be shut down. The safety of our community is of paramount importance. Submitted by Maxine Waters, Member of Congress, representing California's 43rd district.

Vanessa Allen Sutherland: Thank you, Mr. Cloud, and I want to thank all of our elected officials: Mayor Furey, Congressman Lieu, and, on behalf of Congresswoman Maxine Waters, Mr. Cloud, who've joined us this evening, and shared their perspectives and very helpful insights. I know that the community appreciates your efforts on this very important safety issue, and we continue to gather information.

We will now hear a presentation from the CSB's investigation team. The team will discuss the preliminary findings from the ongoing investigation at the ExxonMobil refinery in Torrance. At this time I'd like to introduce the investigation team. And I know that they will share this in their presentation, but this is not the final report. Often at our meetings, if we have a final report, we will issue findings, and then the Board will vote on the recommendations that have resulted from that. This is simply a more comprehensive update to show you what we have been able to gather and learn and glean between February 2015 and now. So, I did want to stress that this has been ongoing, so, when the questions come, you will

learn that this is not the final report and we have more work to do.

First on the team is Donald Holmstrom. Don is the Director of the Western Regional Office in Denver, Colorado. He has led and supervised a number of CSB investigations, including the 2012 Chevron Richmond refinery chemical release, the 2010 Deepwater Horizon explosion in the Gulf of Mexico, and the 2005 BP Texas City refinery explosion and fire. He has extensive experience in oil refinery operations, Process Safety Management, occupational health and safety, and incident investigation.

Next is Mark Wingard. He is a lead investigator of the CSB's ExxonMobil explosion investigation. Mr. Wingard graduated from Clemson University with a Bachelor's degree in Chemical Engineering. While attending Clemson, he also interned for a year at Johnson & Johnson Company, doing research and development and lab plant support for active pharmaceutical ingredient production. Prior to coming to the CSB, Mr. Wingard worked as a waste management engineer at the Savannah River nuclear facility.

Next, Jerad Denton. Mr. Denton joined the CSB in 2012, and is currently supporting the agency investigation into the ExxonMobil refinery explosion, and the West Fertilizer explosion, and fire that occurred in Texas in 2013. Mr. Denton has degrees in Chemical Engineering, Chemistry and Mathematics. He also has a law degree.

Wills? I can't see you over there. Um, uh [clears throat]. Sorry, I'm losing my voice... [Coughs] Sorry about that.

Wills Hougland joined the CSB in 2015 and has a background in mechanical engineering, testing, and manufacturing. After graduating and completing his Bachelors of Science in Mechanical Engineering at the University of Colorado, Boulder, he was a manufacturing engineer at Aerospace Manufacturing Company.

And, lastly, is Johnathan Whitwell. He joined the CSB in 2015. He has a Bachelor's degree in Chemical Engineering from the University of California, San Diego. Prior to his college education, Johnathan was enlisted in the Marine Corps. for four years.

Mr. Holmstrom please begin your team's presentation.

Donald Holmstrom: Thank you, Chairperson Sutherland, and I'm proud to, as well, introduce the team tonight. I just wanted to take a second to talk about a few of their activities. The team deployed early on, and was in the field for over a 2½-month period. Uh, they engaged in a lot of typical activities as an investigation team. They interviewed over 70 witnesses. They gathered tens of thousands of documents. Uh, the team documented the incident scene and tested a number – I think over a dozen -- items of equipment during the investigation. The team also consulted with refinery experts, and companies that manufacture modified HF, as well as those that design alternatives to HF alkalization.

The purpose of tonight's meeting first focuses on a presentation of the preliminary findings to the Board by the investigation team. The team will field questions from the Board and the public comment period could provide an important opportunity for input to the Board, and also the staff, as well. And whatever additional questions and information the public has in response to the presentation can aid our investigative effort.

Tonight's meeting is just a step in a process that will eventually lead to an investigation report and recommendations. Um, tonight's presentation will address topics, the following topics: background and process description; incident description; modified hydrofluoric acid; near-miss and offside consequences; key issues; the path forward; and obstacles that have been presented. I will now introduce Investigator Johnathan Whitwell, who will discuss the incident background and process description. Jonathan?

Johnathan Whitwell: Thank you, Don. Good evening, my name is Jonathan Whitwell, and I will be reviewing the refinery background

and giving a process description. The Torrance refinery was constructed about 85 years ago by the General Petroleum Corporation, which would eventually become Mobil Oil. A major modernization project was completed in 1965. This is when the process unit where the explosion occurred was constructed. However, the specific pollution control equipment inside the FCC where the explosion occurred was not installed until 2009.

In 1999 the Torrance refinery changed ownership when Mobil Oil and Exxon merged to become ExxonMobil. Currently, the sale of the refinery to PBF energy is pending. During normal operation, about 1200 people work at the 750-acre refinery. Of the 137 refineries operating in the US, the Torrance refinery ranks 50th in capacity. Because of its ability to turn low-value, heavy sour crude into gasoline, the Torrance refinery is rated among the more complex refineries in the world. The refinery converts nearly 80 percent of its 155,000 barrel per day capacity into gasoline. About one fifth of the gasoline sold in Southern California comes from the Torrance refinery.

Ever since its incorporation in 1921, Torrance has been a mixed-use city. The original developer's intent was to create a worker's paradise where people could work, live and take pride in their community. Because of this, Torrance has industrial areas directly adjacent to residential areas. The proximity of the refinery to residential areas is shown on this map. The orange boxes are schools, and the blue boxes are hospitals. The highlighted circle on this map represents a three-mile radius centered on the refinery. Within this radius there are 330,000 residents, 71 schools, and 8 hospitals. The explosion last February occurred in the Fluid Catalytic Cracking Unit, or FCC.

The refinery is able to turn such a large portion of each barrel of crude into gasoline, thanks largely to the FCC. Long-chained, low-value heavy oil is fed into the FCC. Inside the FCC, a cracking reaction takes place that breaks the long hydrocarbons into shorter hydrocarbons. The FCC produces a range of products from the heavy oil feed, but its main products are gasoline, and gases that are later turned into gasoline, in the alkylation unit.

This is an isometric diagram of the FCC. The three main process vessels in the FCC are the regenerator, the reactor, and the main column.. . .Some smaller pieces of equipment that played a major role in this incident, are the expander and the main air blower, shown in the red oval near the bottom. The remainder of the equipment in this diagram is to recover energy and pollutants from the regenerator flue gas. The ElectroStatic Precipitator was where the explosion occurred, and that is shown at the top of this diagram in the orange oval.

In order to understand how the explosion occurred last year, it is helpful to understand the basic operation of the FCC. In a nutshell, the catalyst is constantly circulating between the reactor and the regenerator in the direction of the circular arrow shown in the center of this diagram. More specifically, hot regenerated catalyst and the heavy oil feed are injected together in a pipe underneath the reactor, called the "reactor riser." While the oil vapors and catalyst are in contact, the cracking reaction takes place in the riser. The cracking reaction covers the catalyst in carbon, called "coke," which renders the catalyst ineffective. Once the catalyst is covered with coke, the catalyst is called "spent catalyst."

The top of the reactor riser is where the spent catalyst and the cracked hydrocarbon products part ways. The FCC products leave through the top of the reactor and go to the main column. The spent catalyst leaves the reactor and circulates into the regenerator. The purpose of the regenerator is to burn the coke off the catalyst, also known as, "regenerating the catalyst." The main air blower pressurizes the regenerator with air to burn the carbon off the catalyst. Regenerating the catalyst heats it to about 1300 degrees Fahrenheit. This hot regenerated catalyst provides the energy necessary to drive the cracking reaction when it is re-introduced to the beginning of this cycle.

The waste gas produced from regenerating the catalyst is called "flue gas." The flue gas exits through the top of the regenerator with some catalysts still entrained in it. The gas catalyst separator removes the larger catalyst particles from the flue gas. Before it is sent through boilers and pollution control devices, energy from the compressed hot flue gas is

collected by passing it through a turbine called "the expander."

Although it is not indicated on this diagram, the energy from the expander is used to power the main air blower. Here is a picture of the catalyst used to promote the cracking reaction in the FCC. The catalyst is a powdery solid composed mainly of clay and aluminum oxide. When a gas is bubbled through a powdery substance like the catalyst, the powder becomes "fluidized," meaning it behaves like a fluid. This is how the catalyst is transported from vessel to vessel in the FCC.

During normal operation, cracked gas from the reactor is separated by boiling point in the main column. Usually, a distillation column uses heat to boil a liquid. Since the feed to the main column begins as a super-heated gas, the main column needs to reject heat to condense its feed stream. One of the ways that the main column rejects heat is by pumping the liquid in the bottom of the column around the refinery to heat several other processes. One of the pieces of equipment in this loop leaked internally during the incident, which will be mentioned again later in this presentation.

In order to safely operate the FCC, the catalyst must move between the air side [regenerator] and the hydrocarbon side [reactor] without letting the air and hydrocarbon mix, which is called a "reversal." A reversal can result in an explosive atmosphere inside the reactor. The separation is accomplished primarily by two slide valves between the reactor and the regenerator and the levels of catalysts that the slide valves hold in the bottom of each vessel. For example, the spent catalyst slide valve controls the level of spent catalyst in the reactor. The pile of [fluidized] catalyst in the bottom of the reactor is crucial to forming a barrier that keeps the air from the regenerator out of the reactor. The slide valve holds the catalyst in the reactor, and the catalyst is what creates the seal [that keeps] the hydrocarbons in the reactor and the air in the regenerator.

A properly operated and maintained spent catalyst slide valve needs to be able to hold a catalyst level to prevent a safety-critical event, such as a reversal. To ensure that

hydrocarbons and air aren't mixing, the pressure difference across the slide valve is monitored and controlled. If, for whatever reason, the pressure difference across the slide valve drops to a low level, which indicates that a reversal may happen, the unit automatically puts itself into something called "safe park" mode, which is intended to prevent a reversal.

Another slide valve, called the "regenerated catalyst slide valve," controls catalyst going into the reactor riser in the same manner. These slide valves are considered safety-critical, and are vital to the safe operation of the FCC unit. If the control system on the FCC senses a dangerous process condition like a reversal, it takes the following steps to put the unit into "safe park" mode, which automatically does the following.

Both the spent and regenerated slide valves close. The gas oil feed to the reactor is shut off, and a small portion is redirected to the main column. Steam is injected into the reactor riser, where the gas oil feed normally goes. This steam is intended to push all of the hydrocarbons out of the reactor, and increase the pressure in the reactor, so that air cannot flow in from the regenerator. The air blower and the expander for the regenerator are shut down. It is important to note that safe park mode does not shut down the ElectroStatic Precipitator.

I mentioned earlier that hot gases from regenerating the catalyst leave the regenerator and then go to power recovery and pollution control equipment. Some catalysts remain entrained in the gases leaving the regenerator and must be removed before the flue gas is released to the atmosphere. Larger catalyst particles are removed right after the regenerator by the catalyst gas separator, but that equipment can't collect the smallest catalyst particles out of the flue gas. The ElectroStatic Precipitator, or ESP, is used to collect most of the remaining small catalyst particles from the flue gas so the refinery will comply with emissions rules. The ESP has large vertical plates, shown here in red, that are oriented parallel to the flow of the flue gas. At the entrance to the ESP, the electrodes, shown here in blue, distribute a charge throughout the flue gas. The

large plates have an opposite charge so the catalyst particles are deposited onto the plates and can be removed.

On the day of the incident, the ESP is where the explosion occurred. The larger vertical plates in the ESP are visible in the red oval in this post incident photograph. In order to create an electric field strong enough to collect the catalyst particles, a large voltage is applied between the entrance of electrodes and the collection plates. The voltage difference between the electrodes is so high that any given electrode arcs about ten times per minute. With the large number of plates used in the ESP, each arcing about once every six seconds, there is almost always something arcing or sparking inside the ESP.

This arcing is part of normal ESP operation and does not indicate a malfunction. The electrical arcing inherent to the operation of the ESP is the most likely ignition source for the explosion. Now that you have a basic understanding of what goes on in the FCC, I'll turn this presentation over to Mark Wingard, who will be describing the incident for us.

Mark Wingard: Thanks, Jonathan. I will now walk you through the series of events that ultimately ended in the ESP explosion on February 18, 2015. A week prior to the ESP explosion the FCC expander began to experience vibrations. These vibrations occurred due to hardened FCC catalyst deposits forming on the expander turbine blades. Vibrations within the expander were monitored, because if the vibrations get too large, the blades of the expander turbine could impact the wall of the expander, causing catastrophic equipment failure.

For five days, ExxonMobil operators tried different methods to try and bring the vibrations under control, but on February 16th, two days before the explosion, the vibrations exceeded a preset limit, and the unit was automatically put into safe park mode by the control system, which shut the expander down. As a reminder, the expander area in the process can be seen in this red circle.

The expander turbine after the incident can be seen in the picture on the left. As can be seen on the blades, the FCC catalyst from the flue gas built up over time. Uneven

catalyst distribution on the blades can cause turbine vibration. After the automatic safe park caused by the increased vibrations, workers attempted to restart the expander. But the catalyst build-up between the blade tips and the expander wall made the turbines stick in place, and the operators could not get the expander to rotate. This was not a novel problem in the FCC unit. A similar situation happened in 2012 after a power outage to the same expander.

The picture on the right shows that expander in 2012, and you can see the catalyst deposits between the turbine blade and the wall. In that situation, the worker performed a confined space entry, and manually chipped away the catalyst, which allowed the expander to start back up. The expander turbine condition in 2012 can be seen in the picture on the right. On February 16th, the unit was left in safe park mode while personnel got together to determine a path forward to bring the expander and the unit back into full operation.

To reiterate what Johnathan said earlier, when the FCC is put in safe park mode, a number of things happen automatically through the control system. Large quantities of steam are injected into the reactor riser to clear it of catalyst and hydrocarbons, and also to force any remaining hydrocarbons into the main column. The feed to the reactor is shut off and a small portion is redirected into the main distillation column to keep the main column above a certain temperature, so the water from the steam can be removed. Also, the spent catalyst and regenerated catalyst slide valves are shut to stop the circulation of catalyst between the reactor and regenerator, and to form a catalyst barrier in the reactor to keep hydrocarbons from entering the regenerator and flue gas system.

A small amount of hydrocarbons continue to flow into and out of the main column, but mostly the hydrocarbons within the main column remain in circulation and the steam is removed from an overhead receiver. The ESP remains on and the expander and main air blower system is turned off. The main column is shown here. When put in safe park mode, the main column is primarily put in a temporary holding pattern and the hydrocarbons would circulate

within it. A small amount of feed still came in to the keep the column warm enough to keep steam from condensing into the bottom. A loop of the main column at the bottom, which can be seen on the bottom right of this picture, continued to circulate during Safe Park.

During the safe park in 2015 on of the pieces of equipment on this bottom loop was internally leaking highly flammable naphtha into the main column system due to an existing corrosion issue. This leak generated a higher pressure in the main column and made the hydrocarbons within the main columns more volatile than anticipated in normal Safe Park. However ExxonMobil did not take notice of this leak or the higher pressure in the main column.

ExxonMobil formed an incident response team, or IRT, to deal with the expander being down and to determine the best means to bring the expander and the unit back up. This team consisted of management and engineers, but included no hourly workers. The plan that this team came up for called for an initial visual inspection of the expanders internals and if a catalyst had built up between the turbine blades and the wall as was expected, a worker would perform a confined space entry into the expander and manually chip out the catalyst blockage to allow the expander and then the unit to start back up. This team decided to reuse a variance, or deviance from ExxonMobil practice that had been implemented previously in 2012 to restart the expander and the unit. A variance was necessary because the work involved was equipment-opening and confined space entry, and, in order to save time and money, ExxonMobil wanted to forgo installing blinds in two locations around the expander, as they were required by internal standards and recommended in industry best practice.

The unit was in a different condition than it had been in 2012 when the variance was initially created. In 2012 the FCC had operated for two years without a significant maintenance overhaul. In 2015 it had been operating an additionally three years without any maintenance overhaul. In 2015 ExxonMobil failed to analyze what the differences were in the unit condition between 2012 and 2015. For

instance, in 2012 there was no leak in the bottoms loop which was making column pressure higher and increasing the flammability of hydrocarbons in the main column.

Also, ExxonMobil did an analysis in 2012 to ensure a catalyst level remained in the reactor, but this was not done in 2015. Because of the changed condition in the unit, ExxonMobil should have conducted a Management Of Change review and performed a hazards analysis prior to implementing the 2012 variance three years later in 2015; however, this was not done.

With this lack of analysis, ExxonMobil moved forward with their plan to start the unit back up. It was intended that both slide valves remain closed with steam going up the reactor riser. The variance required a minimum steam flow rate of 2,000 pounds per hour in order to keep the hydrocarbons from mixing with air and in the main column. ExxonMobil contended that this steam provided an adequate barrier between the hydrocarbons in the main column and the air in the regenerator. However, there was no analysis of how 2,000 pounds per hour of steam were calculated. ExxonMobil has not been able to produce any documentation to the team about where that number came from.

CSB calculations after the incident indicated that the necessary amount of steam required to keep hydrocarbons in the main column was somewhere around 30,000 pounds per hour of steam. The ExxonMobil normal safe park procedure calls for 40,000 pounds per hour of steam. For the expander confined space entry, a blind was to be put on the outlet of the expander, seen here on the circle in red in the bottom of the picture. In order to install this blind, the piping had to be lifted, which is a line-breaking activity, to provide a gap that was large enough so that the blind could slide into place.

When this variance was originally carried out in 2012, ExxonMobil conducted an analysis to determine how safe the variance was. This included having a meeting with high level management, who had to sign off on the variance. No additional safety analysis was conducted by ExxonMobil prior to implementing the variance in 2015.

Also, on the day prior to the incident, the old variance had its signatures struck through, and a member of management had walked it around to have it signed quickly by the necessary management personnel.

The spent catalyst slide valve, seen in this orange circle, also failed to hold a catalyst level. The spent catalyst slide valve, seen in the closed position after the incident and after it was removed from the unit, is a safety-critical device designed to keep a catalyst level within the reactor. However, when the spent catalyst slide valve shut, it did not hold a level of catalyst in the reactor, and all the catalyst that was present ultimately dropped into the regenerator. This removed the main barrier intended to keep gases in the reactor from entering the regenerator. The incident response team, as well as operators, were aware that there was no catalyst level in the reactor prior to the incident. They were operating without this vital barrier in place.

Early on February 18th maintenance workers had lifted the piping required to slide the blind on the expander outlet. This part of the process was not fully blinded and lacked an adequate assessment that hazardous materials had been isolated or removed. In fact, steam that was flowing into the riser was also flowing in this piping. When the piping was opened, the steam flowed out and the workers were not comfortable being on the scaffolding in close proximity to the flowing steam.

At this point the leaking steam was a clear opportunity for everyone involved to become aware that the steam entering the reactor was leaking into the flue gas system and there was no real barrier between the hydrocarbons in the main column and the workers present around the expander. A logical course of action at this point would have been to completely shut down the unit so the expander could be safely worked on.

At the time, operations had around 30,000 pounds per hour of steam flowing into the reactor riser. Management, relying on the 2,000 pounds per hour given in the variance, told the board operator to reduce the steam. The board operator dropped the steam into the riser, resulting in

around 18,000 pounds per hour [of steam] flowing into the reactor. Soon after the steam was reduced, workers in the area began to have their personal hydrogen sulfide alarms go off, and they evacuated the unit.

The timely action taken by workers to evacuate when the alarms went off may have saved many lives, because about 20 minutes later, the ESP exploded. The path the hydrocarbons took is highlighted in this graphic in red. The hydrocarbons were present in the main column seen on the far right. When the steam was reduced, they traveled into the reactor through the catalyst slide valve and into the flue gas system, which led the operators around the expander outlet to get exposed and their alarms go off, and then it furthered traveled into the ESP, where there were ignition sources because the ESP was on.

It is important to note that the ESP was equipped with detectors that were intended to automatically shut it down before a flammable atmosphere could enter it. Because these detectors were designed to only detect flammable carbon monoxide, hydrocarbons passed by without any alarm and the ESP was not shut down.

The series of events will be seen better in this graphic. The steam was initially intended to flow up the riser and into the main column, where it would be removed from the top. (Let's see if this works.) However, the spent catalyst slide valve did not maintain a seal of catalyst in the reactor. As a result, steam was going both into the main column, and also flowing through the spent catalyst slide valve into the regenerator and the flue gas system. This steam impacted workers trying to install a blind on the expander outlet, and the decision was made to reduce the steam, based on the minimum flow rate required on the variance.

When the steam flow rate drops, the naphtha in the main column from the leaking equipment allow hydrocarbons within the main column to flow into the reactor and in the flue gas system. These hydrocarbons escaped near where the pipe was open on the expander, causing the hydrogen sulfide alarms to go off. The hydrocarbons also traveled through the flue gas system to the charged ESP's where the explosion occurred.

I'll try to play this graphic again, but, the blue indicates the path of the steam, and then the red indicates the path of the hydrogens. So, originally, the blue comes down and the middle is where the workers were working and they were on scaffolding and the steam came out there. They didn't feel safe on the scaffolding, so they asked to reduce the steam, which then allowed the hydrocarbons, shown here in red, to travel through the system, then ultimately into the ESP.

The following pictures are of the ESP which exploded and caused the incident. The top of the circle in red is the north side of the ESP and in the bottom of the circle it shows the south side. The damage to the ESP can be seen in these two pictures. The picture on the left shows the north side of the ESP. As you can see in that picture, the outlet ducts blew out from the sides and fell to the ground. The picture on the right shows the inlet side where the same thing happened. Essentially the north and south side ducting fell into the surrounding units. On the picture on the right you can also see the white catalyst dust on the ground that also spread into the surrounding community.

Lastly, this photo shows the damage a piece of ducting did on the south side of the ESP. Multiple pipes were severely impacted by this debris. Fortunately, the material in these pipes was non-hazardous. This does demonstrate the damage the ducting had on the equipment it impacted, though. I will now turn the presentation over to Wills Hougland to discuss a near miss that occurred as a result of the ESP explosion.

William Hougland: Thank you, Mark. I want to take a moment to talk about a serious near miss that occurred as a direct result of the explosion in the ESP. A near miss is an extraordinary event that could reasonably have been expected to result in negative consequences, but actually did not. After the explosion, there were large pieces of debris that were ejected into units directly surrounding the ESP. One of these pieces impacted scaffolding in the Alkylation unit—specifically, around a pressure vessel called a "settler" tank. These tanks contain tens of thousands of pounds of modified hydrofluoric acid mixed with hydrocarbons.

[Modified hydrofluoric acid is also called "MHF." Modified hydrofluoric acid is less volatile than, but just as toxic as, unmodified hydrofluoric acid.]

The CSB had determined that, if only a couple of events had occurred differently, a potential rupture of these tanks would have been possible. The CSB, as well as ExxonMobil's own definition, would categorize this event as a "near miss." ExxonMobil corporate documents state that "dropping loads or other falling objects within damage range of equipment containing flammable or toxic material" constitutes a near miss. The CSB is analyzing this near miss and part of its investigation into the ESP explosion.

A near miss is extremely valuable to investigate because we can learn lessons from this event without having to suffer the consequences. The two settler tanks involved in this near miss are located side by side. The tank set ups can be seen in this picture above, which was taken after the incident and when the scaffolding had been removed. These two tanks are located approximately 80' from where the explosion occurred, and the location of these tanks is also outside [of] the minimum distance for equipment spacing that is specified by ExxonMobil [corporate] documentation.

A piece of intake ducting identical to the one in this picture, which can be seen in the intact condition, was the debris involved in the near miss and fell from the top of the southeast corner of the ESP and over 100 feet before it impacted the scaffolding. The intake duct is approximately 12' tall, 10' wide, 5' deep and weighs around 80,000 pounds. In addition to the scaffolding, the ducting also damaged a cement pillar used to hold the hydrofluoric acid perimeter detection system,

As you'll see in these two photographs, there is extensive damage to temporary scaffolding that was constructed around the settler tanks. The scaffolding was only in place due to an upcoming planned outage where the unit was to be taken down and the internals of the tank cleaned and inspected. Under normal operations, scaffolding would not be around the tanks. As I discussed earlier, ExxonMobil

corporate documents would classify this as a near miss due to a duct falling within the damage range of the vessels. Despite this, the refinery is contending that this event was not a near miss and using this as a basis to refuse to respond to CSB document requests and subpoenas for information pertaining to the near miss.

The CSB does not agree with this contention, and thinks the near miss falls squarely within the bounds of our investigative jurisdiction. The CSB legislative statute charges the agency to not only investigate incidents, but also [to] investigate near misses that have the potential to cause substantial property damage or a number of deaths or injuries among the general public.

In addition to the scaffolding, the duct also damaged a critical component to the HF detection system. The damage to the perimeter laser detection system can be seen in these photographs. The picture on the left is what the system normally looks like. However, the picture on the right is what occurred after the intake duct hit the column. You can see [in the picture] that the laser equipment on the top of the column is missing and the concrete column itself is seriously damaged.

To better understand what damage could have occurred to the tanks, we can look at damage caused by an identical duct that damaged another pressure vessel on the north side of the unit. Here we have pictures of a pressure vessel that was hit by ducting similar to what fell next to the settlers. As you can see, there is deformation of the vessel, as well as several punctures, shown in the red circle. These punctures demonstrate what could have happened to the settlers had they been impacted by the duct. If that had occurred, a release of the modified hydrofluoric acid could [have] lead to a large offsite consequence and caused significant impact to the surrounding neighborhoods. Not only could this release have occurred, the safety systems that the refinery has in place to detect a modified hydrofluloric acid release were significantly impaired following the explosion.

There are three separate systems used by the refinery to detect the release of hydrofluoric acid: point source

detectors,a perimeter laser detection system and video monitors. All of these systems rely on an operator response after a release has been detected. Due to the incident, two of the three systems were compromised.

The video system relies on the operator's visual confirmation of an HF leak, which appears as a white cloud that travels along the ground. Video feed was obscured by dust created by the release of catalyst from the ESP following the explosion. The picture on the left of this slide shows the other system that was compromised: the perimeter laser detection system.

This system monitors the perimeter of the unit and detects any HF vapor that crosses a boundary formed by four concrete columns with the laser equipment on top. When the ducting impacted one of these columns, at least two of the four sides were lost. These two sides that were lost were both closest to the settler tanks, and would have been the sensors [to detect] a release due to the wind direction that day, leaving the potential for a release to go undetected.

The third system, the point source detectors, which you can see in the picture on the right, measure the concentration of the HF acid that is present in the immediate area around the sensor. These systems were likely unaffected by either the ducting or the catalyst cloud that engulfed the area. The Alkylation Unit console operator reacted quickly to the incident by evacuating the acid from the unit. This rapid response would have reduced the impact of a release. However, there would still be a potential for a release, as this system is manually operated, leaving the opportunity for the system to not be activated swiftly enough in the event of an actual release. Also the de-inventorying of this system takes time, and there would have been modified hydrofluloric acid in the tanks for some time period after the operator hit the evacuation button.

I now want to cover some information on the health effects of HF acid. HF acid is an extraordinarily toxic chemical and poses a severe hazard to the population and environment when a release occurs. Hydrofluoric acid is an acid that can cause severe damage to the skin,

respiratory system and bones after exposure. Only a small amount of contact with hydrofluoric acid can result in debilitating injury and death. After HF acid vaporizes, it condenses into small droplets that form a dense low-lying cloud that will travel along the ground for several miles.

A release of even a small percentage of the modified hydrofluoric acid from the settler tanks, if unmitigated, has the potential to cause serious injury or death to hundreds of thousands of community members. The Torrance refinery, however, does use a modified hydrofluoric acid that is altered in such a way that less vapor would be released than in the unmodified HF acid form.

However, the majority of the acid will still vaporize and a cloud of acid will still form. Even with this modifier, many in the Torrance community are still at risk of being injured or killed if a [significant] release were to occur. Unfortunately, the investigation cannot perform an analysis of the effectiveness of the modified hydrofluoric acid due to ExxonMobil's refusal to cooperate with the requests and failure to provide any documentation to the CSB regarding the Alkylation Unit for this near miss.

Fortunately, the MHF release did not occur; however, the incident did result in catalyst dust to the community. As a result of the incident, a large quantity of spent catalyst dust was expelled into the atmosphere, with fallout being reported on both the west and east side of the refinery. Many community members were concerned over what the catalyst consisted of. The local Air Quality Management District was able to test dust retrieved from the community. A report of its findings can be found on [its] website, and when we post this presentation to our own website, you will be able to click on the link that is on this slide and view the report. I now want to hand this presentation over to Jerad Denton for him to discuss key issues and other investigation obstacles.

Jerad Denton: Thank you, Wills. For the final part of the presentation we will discuss: the key issues identified in the ExxonMobil investigation; the path forward for the investigation; and current investigation obstacles. We'll start with the key issues identified in the investigation. ExxonMobil manages

its process safety system through a program called the operations and integrity management system, or OIMS. OIMS is an ExxonMobil corporate safety management system for ensuring the safety of all of its processes. OIMS is required to be implemented at all ExxonMobil facilities, from gas stations to oil rigs. The OIMS framework consists of 11 elements. The investigation team has identified implementation deficiencies in a number of these elements at the Torrance refinery. Key failures in the implementation of the OIMS program include: Process Hazard Analysis, mechanical integrity, and worker participation.

Further the team has identified a number of process safety regulatory gaps in both this investigation and previous CSB investigation reports. One of the regulatory gaps identified is the failure to require a Hierarchy of Controls analysis at the Torrance refinery. The lack of this analysis potentially contributed to the explosion on February 18th.

Another key issue identified by the investigation team related to the impacts of the explosion on the community. The amount of catalyst dust released is unknown at this time, but it covered a large area surrounding the refinery.

To operate a complex and hazardous process safely, good practice guidelines and regulations require the use of what is called a Process Hazard Analysis or a PHA. A PHA is a systematic approach for identifying the hazards in a process and implementing safeguards to deal with these hazards.

The investigation team found two different PHA's that considered a combustible mixture igniting in the ESP. Although this hazard was identified at least twice, no effective safeguards were implemented to prevent and mitigate the hazard.

In the days, months, and years leading up to the incident, there was a general lack of awareness from operators and management that the hydrocarbons from within the main column could reach the expander and the energized ESP. The PHA's only considered carbon monoxide entering the ESP, and, as a result, the detectors used to shut down the

ESP in the case of flammables were only calibrated to read carbon monoxide.

Thus, when hydrocarbons went past these detectors, they did not automatically shut down the ESP. The potential hazard of hydrocarbons entering an ESP and causing an explosion is a well-known scenario in the industry. The investigation team is currently working to [determine] the rationale behind these decisions, and the ExxonMobil PHA process as a whole.

ExxonMobil also failed to recognize the severity of the spent catalyst slide valve not maintaining a catalyst level during shut down. In a damage-mechanism-review-type document, ExonMobil gives the consequence of the valve failing as "very low," despite the fact that the slide valve operates in a very erosive environment and it is known in the industry that these valves will not typically hold catalyst indefinitely when shut.

During normal operation, the spent catalyst slide valve regulates the catalyst level in the reactor, which serves to separate the hydrocarbons in the reactor from the air in the regenerator, a vital process safety function. Highlighting the importance of the spent catalyst slide valve, ExxonMobil has categorized it as a "safety critical" piece of equipment.

Leading up to the incident, there were numerous clear indicators the spent catalyst slide valve had failed to maintain a catalyst level and that gases from within the reactor were escaping into the regenerator and the flue gas system. Operators and management were aware that the spent catalyst slide valve did not maintain a catalyst level in the reactor. This was made abundantly clear by the steam coming out of the flue gas system the day prior to the incident.

However, ExxonMobil conducted no risk analysis or hazard assessment to determine if the lack of a catalyst level would create hazards in the planned equipment opening and confined space work. ExxonMobil personnel showed no awareness about the possibility of hydrocarbons coming through the slide valve.

Regarding the steam rate used at the time of the incident to prevent hydrocarbons from reaching the ESP, the minimum rate in the variance was only 2,000 pounds per hour. The investigation team has seen nothing to show that this minimum is actually adequate to preserve the steam barrier. Moreover, during the use of the 2015 barrier variance, the only mechanical layer of protection, the catalyst level, was lost. Despite this, there was not a re-evaluation of the steam flow rate to determine if it was still adequate. Every person who signed the variance, including operating personnel believed that 2,000 pounds per hour was the safe minimum steam flow rate.

Another key issue identified by the investigation team relates to mechanical integrity. An effective mechanical integrity program is essential to the safe operation of a plant to prevent releases of hazardous materials and explosions such as the ESP explosion. A key part of the mechanical integrity program is ensuring that periodic maintenance, shut-downs, or planned outages are conducted in a timely manner.

The FCC unit has been operating since 2010 without a planned maintenance overhaul. As a result, many pieces of equipment required repair and replacement. This was not done. In fact, the next planned outrage was scheduled for June of 2015, and many of the items that failed were scheduled to be repaired during this outage. The investigation team has determined that ExxonMobil was lengthening the time between each planned outage, and running for longer and longer periods.

This forced some pieces of equipment, including safety-critical equipment, past its safe operating life. Multiple pieces of equipment in the FCC unit and interconnected units failed, and some of these failures had been unabated for years. Each of these failures were causally related to the explosion in the ESP. The critical pieces of equipment that failed are: the pressure transmitter in the main column; the expander; the carbon monoxide detectors; the heat exchangers, which were leaking naphtha into the main column; and the valves attached to those heat exchangers.

In terms of issues related to worker participation, hourly workers at the Torrance refinery were not consulted regarding decisions leading up to the February 18th incident. When the expander went down, ExxonMobil managers consulted only with other ExxonMobil managers and engineers. As a result, issues like safe steam rates and the variance did not incorporate hourly workers' knowledge and opinions into the process. This created a culture ill-suited to identify the hazards presented by the overall process. For example, some hourly workers were aware that the spent catalyst slide valve had not held a catalyst level in the reactor, and steam was leaking into the flue gas system.

After the variance was developed and released to operations, very few employees were given a copy. Several head operators were neither given a copy nor even shown the variance, and all steps of the variance were given in verbal communication from management. After given the permission to use the 2012 variance to enter the expander, operators expressed concerns over the safety of the variance.

The investigation team determined through interviews that several head operators raised these concerns to management. Concerns by head operators are typically handled in a Job Safety and Environmental Analysis, or a JSEA; however, a JSEA for this job was not conducted. Instead, management determined that a JSEA from 2012 could be reused. Management failed to address workers' concerns and forced the project forward. These events underscore the importance of effective worker participation in the prevention of process safety incidents.

Another key issue identified by the ExxonMobil [investigation] team is the failure to properly utilize a Hierarchy of Control analysis, and the lack of a regulatory requirement to conduct this type of analysis. Modern practices arrange the techniques used to prevent or mitigate hazards into a hierarchy of hazard controls, which ranks hazard control effectiveness from high to low. This hierarchy can be used to evaluate the relative effectiveness of two [different] hazard controls.

As applied to the current investigation, ExxonMobil's choice to use steam as the barrier between the hydrocarbons and the ESP, is a low-level safeguard, per the Hierarchy of Controls. Utilization of higher safeguards, like shutting off all valves leading to the ESP, or a blind between the reactor and the main column, would have provided a greater security in ensuring that the hydrocarbons could not reach the ESP.

Performing a hierarchy of controls analysis [might] have prompted ExxonMobil to question whether it was necessary to even have the ESP energized. Other potential controls that could have been applied include: selecting another design for the spent catalyst slide valve, to ensure that a catalyst level always remained in the reactor, regardless of whether the slide valve was impaired; or, emptying all hydrocarbons from the main column itself.

Further, a regulatory requirement for ExxonMobil to perform a Hierarchy of Controls analysis would also lead the company to evaluate whether modified hydrofluoric acid is the safest alkylation catalyst.

To give you a brief introduction into Process Safety Management, accidental releases of toxic, reactive, or flammable liquids and gases in processes involving highly hazardous chemicals have been reported for many years. Incidents continue to occur in various industries that use highly hazardous chemicals. Regardless of the industry that uses these highly hazardous chemicals, there is a potential for an accidental release at any time that they are not properly controlled. This, in turn, creates the possibility of a disaster.

In response to this, in 1992, OSEA published a standard, "Process Safety Management of Highly Hazardous Chemicals," containing requirements for the management of hazards associated with processes using highly hazardous chemicals to help assure safe and healthy workplaces.

The PSM standard is a safety management approach that seeks to firmly establish and document a set of activities,

like mechanical integrity and PHA's to prevent and mitigate the catastrophic release of chemicals or energy from a process associated with a facility.

Now, in terms of the relation of this incident to the current regulation of process safety in California, a number of ExxonMobil process safety management failures would not have been identified and effectively controlled under the current California PSM regulation.

Currently, certain PSM elements fail to require an assessment of their adequacy of completion. These elements include: PHA's, Management of Change requirements, and operating procedures. In other words, the current PSM regulations are concerned with whether an activity, like a PHA, has been completed, as opposed to assessing the adequacy of that activity. This, in turn, can create a culture in which industry is more concerned with "checking the box," as opposed to the prioritization and critical assessment of an operation's risks.

Additionally, current California PSM regulation also lacks key process safety requirements, such as a Hierarchy of Controls Analysis, which I mentioned before, and damage mechanism reviews. As it relates to a Hierarchy of Controls Analysis, there is currently no requirement to consider where the hazard litigations lie on the hierarchy of hazardous controls to reduce risks to the greatest extent feasible. Requiring the documented use of hierarchy of Hazard Control Analysis to the greatest extent feasible might have highlighted some of the shortcomings of the equipment and maintenance plans at the Torrance refinery.

For example, using steam rather than a blind to prevent hydrocarbons from entering the regenerator and flue gas system is currently a typical practice, and, if this analysis [had been] required, [it might not have become] a typically accepted practice. By placing their hazards within the Hierarchy of Controls, ExxonMobil might have realized that all of the safeguards used on February the 18th were active or procedural safeguards, which are more likely to fail than, say, de-inventorying the main column of hydrocarbons and installing blinds, as required. Such an exercise would have forced ExxonMobil to realize that, in

order to reduce the risks to the greatest extent feasible, more robust safeguards were necessary.

The CSB has identified many of these issues in previous investigations. For instance, following the CSB's investigation of the 2012 Chevron Richmond Refinery incident, the state of California began proposing changes to its PSM regulation. Many of the CBS's recommendations from this investigation align with the current California PSM reform methods. This process is ongoing, and the regulation will be revised a number of times prior to its implementation.

The CSB recognizes and applauds California's progress to reform its PSM regulation for refineries and looks forward to advocating for needed revisions as the proposed regulation is finalized. Importantly, many of the currently proposed reforms would have reduced the likelihood of the explosion on February 18th.

Later tonight there where be a panel consisting of industry representatives, regulators, community group representatives and union representatives discussing the current draft PSM regulation and the significant progress being made.

The investigation team also proposes to evaluate additional issues for the ExxonMobil investigation. These issues include: organizational failures at ExxonMobil, both at a local level and at a corporate level; the siting of the ESP; non-routine operating conditions; and management of safety-critical equipment. If these, or any other, issues are determined to be casual to the investigation, they will be included in the final report.

During the course of the ExxonMobil investigation, the CSB has encountered various obstacles. As it relates to conducting the CSB's all-cause investigation, ExxonMobil has refused to provide the CSB with requested safety documentation. Requests pertaining to a host of issues, including the near miss incident involving the Alkylation Unit, have not been answered by the company. Even after repeated document requests and subpoenas, the CSB has not been able to obtain the information requested, and

ExxonMobil has shown a stark unwillingness to provide any documentation pertaining to the Alkylation Unit near miss or subsequent incidents in that unit.

The first CSB subpoena was issued on June 29, 2015. In August of 2015, after it became clear that the company would not voluntarily respond to the requests, the CSB began the process of referring the subpoenas to the U.S. Attorney's Office for enforcement. The Department of Justice has authorized enforcement of the CSB's subpoenas. It is believed that the information requested will detail how ExxonMobil addressed risks at the Torrance refinery, including how ExxonMobil handled the risks of modified hydrofluoric acid.

The CSB has sent 148 individual subpoena document requests to ExxonMobil, of which approximately 51 percent have been fully responsive, 24 percent have been partially responsive. and 25 percent have not been responded to. All told the CSB has yet to receive complete responses to approximately 49 percent of our subpoena requests.

The investigative path forward for the ExxonMobil Torrance case includes: incorporating and investigating public input from this meeting into the investigation; finalizing the investigation and planning for report development; issuing a report with recommendations; issuing a safety video; and reviewing and following the California PSM regulatory reforms.

The CSB plans to continue advocacy efforts relating to driving continuous improvement in the reform efforts. This concludes the investigation team's presentation of its initial findings. The team will now welcome questions from the Board. Thank you.

Vanessa Allen Sutherland: Thank you very much for that. It is clear that, even though this is only a preliminary findings meeting, that you all have done a lot of really hard and detailed work thus far and we very much appreciate it. Um, I definitely, based on some of the things that you shared with us in your report, am looking forward to the statements that we're going to hear, I guess, in just a few moments, from both Exxon and

the Torrance Refinery Action Alliance in our upcoming panel after our break. I would like to offer the Board an opportunity to ask questions, and, given how long the meeting is going to be, I will ask that each Board Member ask one question, and then we will make a round robin to assure that we try to stay on schedule. And I will ask the team a question about the Fluid Catalytic Cracking Unit, the FCC, before asking if Board Members have additional questions.

In my notes during the presentation, I think I heard you mention that there are a variety of different mechanical integrity failures, and I think Mr. Wingard mentioned some of the, um, turn-around challenges that may have lead to the incident. Can you give us a little bit more detail on how those mechanical integrity challenges or maintenance, operational procedures, um, contributed directly to the failure? I think you want to include things about the heat exchanger, or some of the other more technical aspects, the heat exchanger valves and how they failed—that would be helpful for me.

Mark Wingard: Yeah, sure. So…there's a number of mechanical integrity failures that directly lead to this incident, or helped lead to the incident. The ones you mention, I'm also going to bring up, as well. So, the heat exchanger, which is a piece of equipment that was on that bottom loop of the main column, is what was leaking, letting naphtha, which is very flammableand increased the pressure in the main column, INTO the main column. The reason that heat exchanger was leaking is because there was a corrosion issue on the heat exchanger.

There is another mechanical integrity problem that likely led to that failure, and that is that heat exchanger is one of two heat exchangers in that circuit, and usually they're on a rotation where the heat exchangers run for about 18 months and then they're cleaned; however, there was a failure with some of the valving associated with those heat exchangers, so they weren't able to do the regular circuit of cleaning.

So, likely, as a result, both to the fact that they were running past the point of their serviceable life, the corrosion caused the failure which let the naphtha into the system.

So, there's two examples of mechanical integrity, and shows that the unit's, um, many pieces of equipment that they relied on, were past their serviceable life, and a lot of these had existed for a long time. These heat exchangers, the valving failure, and the issue of running past the 18 months, was something that had been known, and addressed, and looked at by ExxonMobil for months prior to this incident.

Vanessa Allen Sutherland: Thank you, Mr. Wingard. Let's just go down the row. Member Ehrlich.

Manny Ehrlich: Thank you, Madam Chairperson. I'd just like to state what an excellent job you all did on that report, and I appreciate it very much. Can you speak to the issue of emergency response, to and after the explosion? I know you don't have anycomments relative to the near miss, but can you speak to the emergency response activities that were taken, uh, related to the initial explosion?

Mark Wingard: Definitely. From what we can tell right now, there was a very quick response from ExxonMobil's own emergency responders. There were several fires in the unit north of the explosion, and those were handled, put out, and taken care of, and, uh, the operators and other emergency responders were able to quickly remove anybody from the area of the explosion in the FCC and the rest of the refinery. And uh, we're going to continue looking into other items as well, in terms of that, but initial response was, uh, we haven't found anything glaring.

Manny Ehrlich: Thank You.

Vanessa Allen Sutherland: Member Kulinowski?

Member Kulinowski: I thought you were going to go in a different direction with that, so I'm going to take it in that direction. Related to the emergency response, is the CSB's investigation going to look at notification to the community, and how the community was made aware of the incident? I understand they were aware of it because the earth shook, and there was a big explosion, and the consequent evidence was there, but, in terms of what a community member, when there is an incident at the facility, knows what to do or not

to do to keep themselves and their loved ones safe. Are we going to be looking into the adequacy of those responses?

Mark Wingard: Yes, we will be looking into that, and what kind of information is given to the community by Exxon itself, and how to respond to various alarms. There's a community alert system that they have, and how to respond to that. Um, in terms of, um, city notifications, there are various aspects of that that we're looking into, as well, including a new system called Torrance Alert, which is an opt-in system that we'll be looking into.

Vanessa Allen Sutherland: Member Engler?

Rick Engler: Perhaps you could, in a nutshell, address this question just to make it crystal clear in my mind that, why did management not use a blind instead of steam? What was the underlying reason for not using that likely more reliable methodology?

Mark Wingard That's a good question and it's kind of a complicated answer that we will certainly address more in the investigation [report] when we have more time and can go into greater detail. But, simply, I mean, kind of the easiest answer to say, is that there was a belief that steam provided an adequate barrier to keep the hydrocarbons in the main column. Um, there was really very little analysis at all about whether the catalyst level existed, and whether or not that was important. There was one note saying that: "This valve has failed; is that important?" We don't see any analysis from that. Um, so there really was this belief that they had steam going into the riser that would keep all of the hydrocarbons in the main column and that was sufficient.

However, even with that belief, that was pretty widespread in our interviews, we can't find a single piece of calculation. We've asked numerous times. We interviewed a number of people trying to figure out where that 2,000 pounds per hour of steam minimum came from and we can't find anything. So, it seems that a lot of faith was put into this use of steam as a barrier, but almost no analysis went into that. So that's, it's kind of a much more complex answer than that, but, that's kind of the bare bones answer.

Vanessa Allen Sutherland: I'd like to switch from the FCC unit to the Alkylation Unit, because I think one of the things I heard you say was, in the description of modified HF, the health effects appear to be the same as HF, if it reaches the community, but with the modified portion, means that less of it will vaporize and ultimately travel distances. But, I think I heard you say MHF is safer. Can you provide more context of that? Because, I think, given everything that we're learning about hydrofluoric acid and modified hydrofluoric acid, it's a toxic chemical, and, based on the description that the team provided, very eloquently, about the damage that it does to the body, uh, skin and internally, I'm hoping you can provide us more context when you say: "It's safer." Is that in the context of its chemical composition, and not its toxicity, or did you mean safer in the lack of vaporization, or the more minimized vaporization, and thus a smaller cloud and maybe a smaller impact?

Mark Wingard: Thank you, and that's a very good question. So, it's the latter of what you're saying. The additive that's put in to modify the HF is intended to minimize how much is actually released; however, once the cloud is released, and there is an offsite travel, the health impacts are essentially the exact same as if it was just an HF cloud that was coming, and so, what the additive does is, if there is 100 gallons released to the air, that would be a vapor, and a smaller portion of that would actually get released. But the amount that is released is just as hazardous and dangerous as regular HF.

Vanessa Allen Sutherland: So, just a very quick follow-up before I ask Member Ehrlich if he has a question. Is it possible to have a chemical additive that would both reduce the size of the vapor cloud and make it less toxic? Or is it really impossible to determine whether or not there is such an additive?

Mark Wingard: To be honest, I don't know. That would be something we would have to look in to. We really haven't focused our investigation in that direction, so, I don't really know the answer to that. Sorry.

Vanessa Allen Sutherland: Member Ehrlich?

Manny Ehrlich: Thank you. I have a question, because I've worked with hydrofluoric acid in different applications, but, and perhaps you don't know this, but, does the refinery have adequate supplies of calcium gluconate in the event of a massive HF exposure for plant personnel and surrounding community personnel?

Mark Wingard: I do not know. And again, pretty much any requests we've made through subpoenas related to the alkylation unit, the near miss, or subsequent release through the clamp, that we've made to the company, which might include that type of information, has been refused to us, so, um, I can't really answer that question at this time.

Vanessa Allen Sutherland: Member Kulinowski?

Kristen Kulinowski: You mentioned that some of the safety-critical equipment should have been replaced prior to the turnaround last summer. Is the team going to be collecting evidence of the duration between turnarounds? Because you had made an assertion that the turnarounds are being stretched to a longer and longer time frame. So, are you looking historically at the history of the turnarounds at this plant to show that they're actually trying to get more life out of these safety-critical elements than what is appropriate?

Mark Wingard: Yeah. That's a good question, and we are. So years ago, decades ago, units at this facility went three years before turnarounds, then they got stretched to four, and now they're running five, five plus. However, with that being said, as time goes on, there are changes that, perhaps, allow a unit to run longer and longer, if that is what you mean, with turnarounds. So, that is something that we definitely plan on looking into further, to try to figure out if lengthening the [time] between turnarounds was actually negatively impacting the way the unit was run and the safety of the unit.

Kristen Kulinowski: And, just a follow up: In the length of time in-between turnarounds, there can be new technologies that enable them to go longer. For example, is it also possible that

they're sort of patching things, or trying to isolate systems that are failing without having to do a full shut-down or turnaround? Is that the case here?

Mark Wingard: So, for some equipment, and it depends on the piece of equipment, um, that is certainly true. Something like the spent catalyst slide valve, you can't really isolate that without shutting down the equipment. And, so, for a lot of these pieces of equipment that can be easily isolated and worked on, ExxonMobil actually has a program in place to actually do the preventative maintenance. So that's there. It's really these items that have to wait for the unit to go down so they can do the work, that we're seeing issues.

Vanessa Allen Sutherland: Member Engler?

Rick Engler: As early as the mid 1970's, the Oil Insurance Association, which was the oil industry's insurance pool, which the petroleum industry funded, and asked to provide advice on safety, indicated back in a safety bulletin that they had significant concerns about hydrofluoric acid alkylation units. In terms of your investigation, in terms of moving forward, and this, perhaps, is a difficult question, because it might have to be addressed to the Mobil entity which doesn't quite exist anymore, when you gave up the original considerations that were made when the refinery decided what type of operations to actually install. Just the basic history of how a decision was made to install one major technology that, at the time, it was new and red flags were being raised, as opposed to another potential technology which was well established, such as sulfuric acid alkylation.

Mark Wingard: It's tough to really say without kind of starting down that road. And, again, we don't really have any documentation, so, we haven't really started that analysis, but, we will certainly put this as part of the investigation into the near miss. We want to understand the mitigation systems in place, and all the processes in place to reduce any HF release, and then the consequences if there is a release. And, so, I think it could very likely lead down that path. How, when they were initially doing it, looking at risks and hazard controls? We can go back that far, but, without

starting that portion of the investigation process, I can't really say one way of the other.

Vanessa Allen Sutherland: Well, Mark, to follow up on the statement that you just made, can you then tell the Board a little bit more about the mitigation systems that are currently in place at the refinery to prevent a an HF release offsite?

Mark Wingard: Um, I can't give much specifics. I hate to say this, but, we just don't have much documentation. Like, I can speak more generally about systems that are in place at HF refineries around the country, of course—kind of the underlying basis of any process. I mean, these companies don't want any hazardous chemicals anywhere in the plant getting out.

So, you have your PSM systems, your mechanical integrity, your PHA's, your Management of Change and procedures. It's kind of all of the underlying foundation of all of these places. But, then, with the recognition that HF is such a hazardous and dangerous chemical that can cause such a large offsite consequence, frequently there is a lot of extra mitigation that is specific towards HF.

And that runs a pretty wide gambit. They're saying there's a lot of things, like detection systems that Will talked about. You see point source detectors, and laser systems [that] you don't see in other units for other chemicals. They are specifically targeted for HF. Other detection systems are flange paint. There is a special paint that, if HF interacts with it, it will change color, and, so, if an operator is making rounds, and they see a flange that is the wrong color, they know that they need to do something to address it.

Another, and one of the more effective means of knocking down HF, is a water system, and these really run the gambit from fire monitors that an operator can go out and aim at a leak to knock down the HF, to water curtains that can surround an entire unit to try to prevent the release from getting outside the unit. But, again, these are things that exist out there. The specifics of the mitigation at the Torrance refinery, we don't have any information on it, although, we would really like to analyze that.

Vanessa Allen Sutherland: Thank you, and then our last round of questions. Member Ehrlich, do you have any additional questions?

Manny Ehrlich: No, I don't, thank you.

Vanessa Allen Sutherland: Thank you. Member Kulinowski, do you have any additional questions?

Kristen Kulinowski: I do. I have one more question about the OIMS system. So, ExxonMobil is this big company, complex company, [with] operations around the world, and you mentioned that they have this safety management system called OIMS. Do you have enough information now to understand whether these failures were a failure of the system they had in place, or a failure to follow their own written procedures? Or was it that they had the procedures and followed them, but didn't go through a deep enough analysis to determine whether they were protective?

Mark Wingard: That's a great question. So, preliminarily, there are still a lot of issues we need to look into, and there are still some aspects of OIMS that we haven't fully analyzed yet. So just preliminarily, it seems to us that OIMS is a pretty good system, but there were issues of implementation of OIMS. Just kind of where the rubber meets the road, so to speak. There are a lot of good programs that, from what we're seeing, kind of failed upon implementation. So, we still need to look more into OIMS, and look into aspects that we haven't fully gone into now, but that's kind of the direction that we're leaning at this time.

Vanessa Allen Sutherland Member Engler?

Engler: No.

Vanessa Allen Sutherland: Well, I would like to thank you all for that presentation, and I have to say that, given all that you've done on just the preliminary presentation, I'm very much looking forward to when we are back to discuss a final report, and related recommendations that can help, not only in this particular incident, but could potentially help other refineries. You all mentioned that we need a lot of information and we are

working on the near miss, and I think I heard Mr. Denton articulate that that can provide us a lesson of learning.

And, for anyone who has seen the NTSB, the National Transportation Safety Board, when they investigate catastrophic airplane accidents, or near misses, they breed a culture of learning, and that is very similar; actually, it is in sync with our mission of prevention. Trying to have a culture of learning rather than of punishment, where we can have the broadest view possible, and, I have to say, I am very much encouraged to see the work that you are doing, because you are very thorough and very broad, so I hope you get all the information that you need. And we will certainly be looking forward to coming back for the final report, and if it's anything like the presentation that you gave today, I think we will all learn quite a bit about how to prevent this particular type of accident, or other accidents at other refineries. So, thank you very much for that...

We have a break coming up soon, but before we have that break, we will first hear from a refinery manager at ExxonMobil, and a member of the Torrance Refinery Action Alliance, and then we will have a 15-minute break.

First, I would like to introduce Brian Atwood, who is a refinery manager at ExxonMobil. Um, he will provide an overview of ExxonMobil's activities following the February 18th incident. I think your agenda…might have them inverted. [Discussion off the record] I think that's fine.

Alright, well, in that case, we will first hear from the Torrance Refinery Action Alliance, Sally Hayati. And, as many of you already know, the Torrance Refinery Action Alliance is a grass roots organization of South Bay residents and business owners. The group was formed following the February 18th, 2015, explosion at ExxonMobil refinery, and, I am very much looking forward to having you share your thoughts and perspectives. Thank you for joining us here tonight; you may begin.

Sally Hayati: Hi, thank you. Can everybody hear me? (Is that okay?) My name is Sally Hayati; thank you for the introduction. First, I want to express my appreciation for the excellent work that

the Chemical Safety Board does, and not just here; I've read many of your reports, and I am looking forward to reading the ExxonMobil report. The Alliance would like to respectfully request that the Chemical Safety Board investigate the status of modified hydrofluoric acid at the ExxonMobil refinery. The near miss of 50,000 pounds of modified hydrofluoric acid in the settler on February 18th nearly released a compound barely distinguishable from hydrofluoric acid and its vapor-producing tendency.

Um, questionable claims and decisions were made during the development of hydrofluoric acid under the consent decree, and the public has been misled and kept in the dark. Because of secrecy and misinformation, few officials and elected representatives locally understand the real risks of modified hydrofluoric acid. Many, for example, still believe Mobil's claim that sulfuric acid is even more dangerous than MHF acid, but it is not. This is one of the the things that need to be clarified by an independent body like the CSB.

The claim Mobil made was that sulfuric acid's toxic cloud risk, not just the transportation risk, which people talk about, was worse than modified hydrofluoric acid, and yet, you see what the report would be for the toxic offsite consequences for the Alkylation Unit if it used sulfuric acid. It would be zero, because sulfuric acid is not a federally regulated substance. And it's not considered to have significant offsite consequences. So, the consent decree and the development of modified hydrofluoric acid and its acceptance over sulfuric acid is based on a falsehood. And, yet, some people still accept that.

In the months since the February 18th explosion, local officials in several cases have informed residents that MHF falls to the ground harmlessly. Now, this was the original promise of the 1990 consent decree. But that promise was broken by 1994, when Mobil reported that they were not successful at developing a safe form of HF acid. It does form a dense vapor cloud.

Now, in 1990, they had pacified a very angry public that wanted to get rid of hydrofluoric acid by promising they would either develop a safe hydrofluoric acid that would

not form a vapor cloud, or switch to sulfuric acid, which is used by the majority of alkylation units. However, Mobil, and its handpicked choice for "impartial" safety advisor, quietly and skillfully steered the consent decree into a downward plunge, ending with an MHF today that is, we believe, 90 percent hydrofluoric acid.

The Valero Wilmington refinery uses the same modified hydrofluoric acid. They report openly that they have 10 percent additive. Mobil may have slightly more than that; they refuse to say. Why do they refuse to say? Valero doesn't care, because Valero wasn't bound by the consent decree and various citizen expectations. The 2004 Valero Wilmington EIR, in fact, claimed only a 7.9 percent reduction in toxic distance for MHF compared to HF. They were bragging about it. 7.4 percent shorter toxic distance. That's saying, instead of, let's say if the toxic radius were 10 miles for HF, the equivalent MHF distance would be 9.2 miles. This is a very insignificant benefit.

How did this happen? So, in 1997 they downgraded our expectations once in the Stipulation and Order. In 1994, they said: Guess what? It is going to be dangerous, but it's going to form a toxic cloud less than half the size of HF. A 65 percent improvement. At that point they said, instead of using 50 percent additive, we're going to use 30. The less additive, the worse it is. But at the end of 1997, when the newly installed MHF unit was made operational, according to the safety advisor's 1999 report, it promptly failed. So MHF failed the beginning of operations. This is according to the 1999 safety advisory report, which was concealed for 16 years and not given out to the public, until just a few months ago we managed to get a copy of it. I managed to get a copy of it.

I recognized the significance of the report and I asked for it. Now, the safety advisor said that the unit, upon operation, experienced instabilities and low product quality and low production levels. But Mobil already knew what to do about it. They had a plan. So, this was in January of 1998. The safety advisor and Mobil, and allies in the city, moved with unbelievable speed to slash the additive to a symbolic 10 percent, a factor 3 reduction. And they implemented, at

the same time, an innovative, and largely untested, proprietary barrier technology, instead.

So their new safety claims became that the tiny bit of additive would suppress a little bit of [it], but the main benefit that they gain in terms of reducing the acid concentration, according to the safety advisor, is from the barriers, close barriers, one inch away, three inches away, from "credible release locations"—that's their term. The speed indicates [that] they did this within less than six months. [They] added all the barriers, got the approval, [and] had written a QRA, Quantitative Risk Analysis. The speed indicates that Mobil expected this failure and was prepared. The operational failure of MHF, and slashing of the additive, was never revealed to the public, even though every other stage of the consent decree, although not 100 percent open, was made known to the public.

When the Stipulation and Order changed the consent decree, the public knew about it. The public had a chance to protest. The city actually realized maybe they'd made a little mistake. They tried to be a little tougher on Mobil, but the people at least knew what the situation was. This was never revealed to the public. To this day, people don't realize that MHF failed during operations—until we uncovered it just about three months ago.

These are just the facts; these are not opinions or reflections on people's character. That comes later, when we get more of the facts, perhaps. So, nationwide, (which is why they didn't want an investigation) the industry continues largely unchallenged to promote MHF as a safer form of HF.

Nobody is paying attention. The regulators are allowing them to put this stuff in. The AQMD knew it was only 10 percent additive. It is clear that the public interest is not being adequately protected, certainly not by the industry, and not by any government agency. Details essential to assess the current risks are being withheld. We need a CSB investigation into this claim for sulfuric acid, into how MHF actually works, and also into the barrier theory of airborne reduction of acid. We don't even know if that works. That's a completely unverified proprietary that has never been independently tested of verified. At the time

Mobil had adopted it, they had only simulated it. The only test they had were for barriers that were like three feet away, maybe a foot away and for 31 percent additive. Not 10 percent additive and two inches away. They extrapolated and they admitted their model was inaccurate.

So, from our government representatives at all levels that are here today, we request an investigation into the events of 1997 and 1998. The operational failure of MHF—make that known. The secret slashing of additive concentration. What was it slashed to? They used to tell us what airborne reduction factor MHF they were claiming. They're not saying that now. I think they are saying 40 percent now. So they reduced it, so in 1998, they swore that the barrier plus MHF would receive the same airborne reduction as the previous additive had been claimed, which was 65%.

So, in 1998 they pledged to get 65 percent airborne acid reduction, and people like R. Scott Adams, who is our fire chief, wrote the report approving that change, but even he was given those expectations. Now they've lowered it to forty percent. So that would not meet the criteria that it's safer than sulfuric acid. Um, that's crazy.

In order to deal with the situation we're in right now, we need to understand which situation we're in. We don't, and the public doesn't know; our officials don't know, and some of our local regulators don't seem to care. An investigation is necessary before we can deal capably with it.

So, these scenario maps were designed originally to give people in the community an idea what the offsite risk was for various industrial hazards. The problem is that they're given so much latitude in their modeling strategy and their scenario selection that they're really pretty meaningless. And we need the CSB's investigation to look into that.

How does a release of 5,200 pounds of MHF with 10 percent additive function? How does it behave? The one on the left is ExxonMobil's current EPA worst-case scenario for the alkylation unit. People can't even see it. I had to go to the reading room in the DOJ to see it. Now, this is three point two miles, the black line. That is the one they

specify, it's, um, death closer to the refinery, but serious and irreversible damage injuries [and] health effects to most people with short term exposure up to the black line. Beyond that, the toxicity goes down.

But this is the same radius they gave in 1999 for a release of 50,000 pounds of MHF from their settler, which is the largest amount of MHF in a single vessel, and that's what they should be using, but they still gave a three point two mile toxic radius—that is very improbable, impossible. I think, maybe, they didn't want to re-draw their scenario maps, or something. Now they have 5,200 pounds released; it's the same toxic radius.

Now, Valero's has a 4.2 mile radius for a release of 50,000 pounds, also MHF. The problem with today's claim [is that] it's not based on the MHF; it's mostly based on the barriers. Now, in the 1999 safety advisor's report, he says that the entire unit is not barriered. Only credible release locations have barriers. Some of the barriers are see-through plastic wrapped around flanges (at least they were in '98), so, the barriers don't exist everywhere. If that piece of equipment had hit the settler and created an eight-inch hole, or whatever it might have done, there most likely wasn't a barrier in that spot because they don't consider that a credible release location or scenario. The way they do their analysis is they look at the things that frequently happen, and those have high probability.

And then, as ExxonMobil loves to tell us, and was telling us earlier: "What's the probability of that?"; "Well, we've got the probability that once every 137,000 years that a release can happen. [Then] we can all just "not worry". But the probability of the ESP exploding the day before it did was probably once every 137,000 years; unfortunately, it [exploded] the next day. So, those are not credible.

That, on the right side, shows what it would look like if the release had occurred from an un-barriered location—5,200 pounds, and I gave them credit for a 26 percent airborne reduction factor. That's generous, because Dr. Ron Coopman, who did the HF release test in 1986 in the Nevada desert, said that probably, from 10 to 20 percent additive would get maybe a 10 percent suppression, not 26

percent. [That's] a ten percent reduction in airborne acid, in his opinion, and Valero is claiming a 15 percent reduction. So, I gave them 26 percent. But, look how large that is! From a different, un-barriered [location and] that's only 5,200 pounds. (OK, Mark, next slide.)

If you look at the release of 50,000 pounds, a release that's got a hole the size of seven inches, six inches—that release occurs very, very quickly. I've looked at studies on how quickly things can empty, studies that the industry did looking at the vulnerabilities of mitigation measures. The reason these mitigation methods don't always work, [and] there are many— poor maintenance is one. But when there is a very large hole, a lot of that material is released before the operator can respond, and before the acid can be dumped.

This is what we're facing: Thirteen point seven miles. You might think: "That's impossible; that's crazy!" (Next slide.) So, just a sanity check: Here are the MHF risk zones for release of 50,000 pounds each. Hopefully, they won't happen at the same time, unless it is an earthquake, or simultaneous terrorist attacks. Now, that has been done, and we know. This is both 13.7 mile radiuses. It covers almost every congressional district in L.A. County. There are 50 refineries in the United States with HF acid alkylation units. The median endpoint distance for those, [according to] EPA reports, is 15 miles, and this is 13.7. We have more than the median amount of MHF. So, this is not impossible, unfortunately. I wish it were.

Now, we would like an investigation. And I wasn't going to mention the role of the city. But, since the mayor brought it up, um, he says that the city always knew about any change that was made in the consent decree; and I agree, that was true, up to 1997. I've seen the documents myself. But I also know that it isn't true that the city had no authority. Because every step that was taken, all the parties involved, Mobil, the city, the safety advisor, the court…The court had the final decision, but the court expected the different parties to interact with each other and talk. The city had the power to protest decisions, and they did. At the stipulation and order, they actually protested. They had a few months to do that, they did it.

They asked for concessions, and so forth. So, that's one thing; they did have some authority. If they had refused to change the consent decree, they could have made it very hard on Mobil, but they didn't. Um, now, they said they didn't participate in a cover-up. Well, I kind of was giving them credit for that, because we were hoping [that] maybe the City Council didn't know about it, because we talked to two or three city councilmen, and they said: "I don't remember that happening." I believed these people that I asked, at least, until proven, you know, to be lying. But I felt that they should have remembered it, if it had happened.

If this city was involved, and I know that the fire chief gave permission, he wrote the report, and somebody, the lawyer, I'm sure signed, because there was a court document. I want to get that court document. I've asked the city for it. They haven't answered my request [for the] "1997 Stipulation and Protocol." Now I see, if what the Mayor says is true, first of all, I want all of those records; he says it's all recorded.

I want the Stipulation and Protocol. We want to see those records, and we want to ask them why did the city participate in covering up the failure of the modified hydrofluoric acid, the cutting of the additive, and the addition of proprietary untested tiny barriers all over the alkylation unit, and accept that? Our safety depends on that because, even though ExxonMobil employees may hope that an accident never happens, and promise us, we know that they do. We also know that earthquakes occur and terrorist attacks occur. So, we want to urge all of our elected officials and regulators to exert every possible effort to eliminate HF from the last two California refineries before an accident happens, and not afterwards.

Vanessa Allen Sutherland: Thank you Dr. Hayati. Actually, if the Board has any questions, Dr. Hayati, we might want to follow up. At this time, I will ask if the Board has any questions for Dr. Hayati. Member Ehrlich?

Manny Ehrlich: No, I do not. Thank you.

Vanessa Allen Sutherland: Member Kulinowski?

Kristen Kulinowski: Not at this time.

Vanessa Allen Sutherland: Member Engler?

Rick Engler: I just have a brief clarifying comment, is that whatever the numbers are, the offsite consequence information, as designed by the law, by the Clean Air Acts of 1990 and through its implementation by the federal Environmental Protection Agency, are based on corporate, are based on management submissions. So, when offsite consequence information is looked at, it is not something the CSB came up with, or a community organization, or a labor organization. It is, in fact, that submitted by management of the facility itself.

Is the modeling precise? No. Could a situation be that everyone within the perimeter died, or got seriously hurt? Unlikely. Is it possible that there could be multiple process failures that led to catastrophes where many people died that were not predicted by the submission? That's also possible.

I just wanted to clarify that, whatever folks are thinking about the broad impact of this, I think there is a deep concern at the CSB that there could be substantial harm, regardless of the precise figures of an offsite consequence analysis. I just thought I should clarify that because this is information that's been cited, that while there will be more information, we hope, coming out of the CSB investigation, it is also clear that offsite consequence information comes from the management of the refineries and other facilities that use high hazard chemicals. So, thank you for allowing me to make that comment.

Vanessa Allen Sutherland: I just wanted to thank you for your remarks and obvious diligence in looking into the issues. I certainly think that one of the questions that Member Kulinowski raised is going to be very near and dear to us. Depending on how much information we get, and regardless what form it takes in the final report, I think hearing from the community on what type of emergency response, and first response information they need, is something that I am interested in. I know that it is certainly, obviously, not the position you

want to be in, because if you're trying to get information about emergency response and first responder approaches to an incident, it means that one has happened. But, on the other hand, certainly, listening to the preliminary findings, and hearing some of the concerns that have been expressed thus far, I certainly would welcome many comments and any additional input on the emergency response, first responder capabilities, training, notice, awareness…

And if the community feels that it's satisfactory, that's fine, we welcome that, too, but certainly that's really critical for me, because, in the event that something does happen, certainly, we want to minimize the impact by making sure that the resources, you all feel that the resources are there and available. So, learning more about that would certainly be of interest to me.

So, next we will hear from Brian Abblett, who is the refinery manager at ExxonMobil. As I mentioned, he will provide an overview of ExxonMobil's activities following the February 18th event. And, I'd like to thank you, Mr. Abblett, for attending, and for sharing your remarks, and for having given us the ability to actually tour the facility and see, sort of, the equipment matching the words, and the preliminary results. Very much appreciate that.

Brian Abblett: You're welcome. Good evening, Chairperson Sutherland, Members of the CSB panel, distinguished elected officials, and ladies and gentleman. My name is Brian Abblett and I am the Refinery Manager at the Torrance refinery, and I've been the Refinery Manager there for 18 months now. Since being there — well, I guess I've worked at ExxonMobil for 28 years across various different parts of the globe, and this is actually my third time in the role of a refinery manager. Thank you, I really do appreciate the opportunity to come along and speak tonight.

There are a number of remarks I'd like to share, particularly about the incident we experienced, going on over a year now, on February 18th 2015. And, of course, the related investigations that have gone on since that date.

I'd like to begin by, once again, apologizing both to our neighbors, and to the Torrance community, for the impact

of the incident that happened on February the 18th, particularly the concern and the impact that that caused to the community. I want to publicly thank the Torrance Fire Department, and you've mentioned incident responders, and to the local responders for their diligent and immediate response in helping us manage the impacts of the incident, and we're grateful for the ongoing support, and also recognize their professionalism and dedication to public safety.

Since February 2015, ExxonMobil has cooperated with 19 federal, state, and local agencies. We've assisted all investigative agencies in our shared task of understanding the cause of the February 18th incident, which I know is our intent, and in applying relevant learnings to prevent a recurrence.

So, let me talk a little bit, if I may, about our own internal investigation. Firstly, I'd like to say that I, too, appreciated the words, the comments, the presentation, from the CSB, and I'm looking forward to continuing that discussion. We, too, value being a learning organization, and, I think the rich comments, and the external perspective brought by the CSB investigation team, is going to be very helpful to us, and we're certainly open and interested in any of their findings, so that we can learn from that, in applying the lessons.

ExxonMobil itself conducted a thorough investigation into the cause of the incident, and that was carried out by a team of 19 experts from around the world. And, not surprisingly, we looked at our equipment, we looked at our systems, we looked at our procedures, and the way that they were executed, both prior to the incident, and on the day of the incident. The report was completed in May of last year, and we shared our findings both internally, but also with the investigating agencies, as well, including the CSB.

As you know, now that everyone understands how FCC's work, that the event occurred when hydrocarbon vapor from the FCC main column flowed back through the reactor, through the regenerator, and mixed with air, finally combusting in the ESP. Prior to the incident, the unit, as, again, we've mentioned, was in what's called "safe park,"

and that followed the earlier trip of a piece of related equipment, namely the expander.

"Safe park" is a non-routine operation, and that in itself happens very infrequently. It's a temporary holding position, where the unit is placed in a stable condition, and the primary sources of heat are removed, and fresh feed is also removed. Our investigation report concluded [that there were] three separate and distinct direct causes for the incident.

The first of which was the loss of the steam-induced pressure barrier between the main column and the reactor, and that was due to a reduction in steam flow, as we discussed, and [that is what] allowed the hydrocarbon from the main column to backflow into the reactor. There was no seal established between the reactor and the regenerator, and because of that, the hydrocarbon was able to backflow from the reactor into the regenerator. And then, finally, and I think you articulated it well, the ESP, itself, is a source of ignition, and that's exactly what happened when that mixture of hydrocarbon and air reached the ESP.

We've taken a number of different actions to address the findings of our internal investigation. Without going through all of them in detail, that includes developing a thorough safe park procedure. Many of the conditions that we described and discussed about the laser protection analysis, the nature of the transitory shut-down, start-up, all of those were considered in developing what we think is now a state-of-the-art safe park procedure. We've added a series of alarms, and, in other alarms, we've reset the limits around things like the main column pressure, and the minimum steamflows during that safe park operation.

We've also updated our procedures to de-energize the ESP, again the source of ignition, when there's a risk of having hydrocarbons in the unit, and, particularly when there is a risk of having hydrocarbons back flow into the ESP. And we've made several improvements to equipment. We've added instrumentation; we've installed new valves, and learned a series of other lessons, as well, that are probably too detailed for this forum. But, be assured, we believe that we understand the cause of the February 18th incident. We

have applied those lessons diligently, in the updating of our procedures, and the changing [of] the hardware in the field, and we're very open and looking forward to understanding the findings that the CSB investigative team makes.

Let me move on and talk a little bit about cooperation, because that's been a theme. There have been a number of themes this evening, and that's certainly been one of them, so let me talk about that. Since February the 18th, ExxonMobil has provided more than 340,000 pages of documents and images to investigating agencies. Our employees have been involved, and participated, in more than 150 witness interviews. That includes 136,000 pages and 67 interviews. I think you actually said 70, so it may have increased, with the Chemical Safety Board alone.

We also facilitated numerous CSB Investigator, Chair, and Board Member visits and site tours (thank you for recognizing that), which continued, incidentally, through yesterday. Our cooperation through numerous document requests, employee interviews, and refinery access, demonstrates that we continue to be responsive to CSB's inquiries regarding the February 18th incident.

We produced all documents related to the cause, and probable cause, of that incident. It is important, though, to remember that the CSB does not have unlimited jurisdiction, and there are disagreements with the CSB over where that jurisdiction lies, and, what we believe is agency overreach.

Let me talk a little bit about modified hydrofluoric acid in the alkylation unit, because, again, that has been a theme of this evening. During the course of our investigation, we didn't find any evidence that suggested that the February 18th incident posed any risk of harm to the community. The February incident involved the FCC and the ESP. There was no damage to the process equipment, and there was no loss of containment on the alky unit. The alky unit's safety systems and procedures functioned as designed.

Contrary to speculation and hypothetical worst case scenarios that we've heard discussed this evening, they

simply don't take into account any of the layers of protection that we have in place that would actually mitigate the impact of any release.

The EPA recognized, when they wrote the rule back in 1994, that a worst case scenario, and the impact it could have on the community, could be misinterpreted. So, I'd like to quote directly from the EPA's Guidance and Clarification on Offsite Impacts.

"The distance to the endpoint estimated under worst case conditions should not be considered a zone in which the public would likely be in danger. Instead, it is intended to provide an estimate of the maximum possible area that might be affected. EPA intends the estimated distances to provide a basis for discussion among the regulated community, emergency planners and responders, and the public, rather than a basis for any specific predictions or actions." Namely, it is not a risk assessment.

We train, and we work closely, with the Torrance Fire Department and other agencies on emergency response, emergency response planning, and we use the EPA scenario as a start point for those discussions, as it was intended.

In terms of safety, just looking at the unit itself, ExxonMobil meets or exceeds accepted industry practice on alkylation units, namely, API RP751, and has stringent safety measures in place to mitigate risks associated with the MHF alkylation process. We talked a little bit earlier about what mitigation is in place, what barriers are in place. So, we employ multiple industry leading systems designed to detect an MHF release, and mitigate and contain a release should one occur.

That includes, for example, the use of: HF detectors, point detectors and laser detectors; we've mentioned both of those; HF-sensitive coating paint, which indicates whether there has been any sort of release of HF; 24-hour video monitoring; and operator rounds. Recognizing that the alkylation unit is a small unit, we post two operators on that unit to ensure that somebody is available in the unit 24/7.

In addition, in the event of a release, to prevent it getting offsite, we use: remotely activated isolation valves, to isolate the area where the incident happened; rapid acid de-inventory, also known as the Acid Evacuation System; external barriers; [and] water mitigation, and the water mitigation includes both point and shoot monitors, and a water deluge system.

At the end of the day, I think what people are really interested in, and concerned about, is whether there was an immediate and significant danger to the public on February the 18th. My answer is: There was not. The reason for that is because there was no significant risk of an HF release, or an MHF release, getting offsite. The vessel the CSB showed a picture of, that is a low-pressure, thin-walled vessel, which is not comparable in strength or thickness to the two-inch thick alkylation unit settlers. In fact, they're 4 1/2 times thicker than the vessel shown in the picture. Even if the settler somehow had been penetrated, there's no threat to the public because of our robust safety and mitigation systems.

One of those systems, an important one, was deployed, as I think you mentioned, on the day of the incident, namely, the Rapid Acid Evacuation, and, as a result of that, all of the acid was removed from the settler in the space of about four minutes. All the other safety systems, including the water deluge, the point and shoot monitors, were not called upon, but were fully functional.

With so much discussion tonight a focus on HF and MHF, I'd just like to make a few key points on why we use it. The two industry catalyst options, broadly speaking, are sulfuric acid and HF, and, in our case, modified HF. The use of sulfuric as an alternative to MHF at the Torrance refinery was studied extensively back in the mid- to late-1990's. This wasn't a quick, back-of-the-envelope calculation; this was years of research and study and analysis and evaluation.

The independent, court-approved safety advisor for the City of Torrance, and a well-respected senior judge for the L.A. Superior Court, all agreed in 1999 that MHF was as safe as,

or safer than, sulfuric acid, at Torrance, and I don't think we can afford to dismiss that lightly.

ExxonMobil actively monitors developments in refining alkylation technology, and we're very aware of some of the claims made, for example, relative to solid acid catalysts and ionic liquids. However, there is a lack of objective information available from third party and commercial applications, and our conclusion at the moment, as of today, is that there are no commercially viable safer alternatives than sulfuric or HF.

Having said all of that, we are aware that the South Coast Air Quality Management District, and the City of Torrance, have committed to study, and, I guess, open up, take a look at, MHF relative to sulfuric acid, and we're very open to, and happy to, participate with them to provide whatever information they need, and help and support [them] to be able to complete their evaluation.

So, let me just, in closing, say a few things. And the first one is: NOTHING, nothing is more important to ExxonMobil than the safety of our employees, of our contractors and of our neighbors…[Turning to a member of the audience] I can repeat that if you'd like...

Unidentified Male Speaker: Oh, we heard you just fine**. [Cheering and Clapping]**

Vanessa Allen Sutherland: Could I ask that we give Mr. Abblett the respect to finish his remarks? **[The audience remains quiet]** Thank you.

Brian Abblett: Seems I have no need. The responsibility to be a good neighbor is something that I and ExxonMobil do take very seriously, and our objective is to operate safely and prevent incidents, and, clearly, when incidents happen, to understand and learn from those incidents. I'd like to assure everyone that Torrance is, in fact, a safe refinery. Industry began collecting and publishing process safety data for its members back in 2011 (I think that was actually in response to a CSB investigation), and collects data typically routinely covering refineries, about 100 refineries in the US. Torrance refinery process safety performance has been much better than the average US refining industry average for three of the first four years of that data

collection. And we think that's a good process, but we won't stop there. That's not our goal; our goal is to prevent all incidents from happening.

It is also important to mention that the Torrance refinery has not had an HF release that has impacted the community in 60 years that we've been operating with HF. We are confident that we know what caused the February 18th incident, and we're confident in our ability to restart the refinery and resume normal operations. We are grateful for the dedication and hard work of our 1100 employees and contractors who are focused everyday on safe operations.

I'd like to close, finally, by once again thanking the CSB for its efforts, and to say publicly that we're glad to be getting their preliminary thoughts, report, and ideas about the incident. And we're certainly looking forward to their final report. We're very interested in studying their findings. Particularly, I think, we're going to benefit from an external perspective on our internal incident investigation, and that will give us an opportunity to apply any additional lessons to further improve the Torrance refinery's process safety performance. So, again, thank you, again, to the team.

Vanessa Allen Sutherland:

Thank you very much, Mr. Abblett, for your remarks. At this time, if you would give us a moment. I think we're running a pinch behind. I'm going to ask my fellow Board Members if they have any questions. Uh, I have one to start. You mentioned the studies that were conducted back in the '90's regarding hydrofluoric acid versus sulfuric acid. I'm sure, for the chemists in this room, they will very much appreciate this question, because, given the different chemical characteristics, and how sulfuric acid properties differ from those of HF, it's hard for the non-chemists to really understand the decision tree in choosing between HF and sulfuric acid, because they are very different; they, obviously, in their alkylation processes, require a lot of different operational considerations, and so, my first question is, do you have more insight that you can share with the Board on why HF over sulfuric? Maybe it's because of how they work in the process and what the end product is desired to be?

Secondarily, what would be the operational change, cost, complexity, of a refinery switching from HF to sulfuric? Or HF to a solid catalyst of some other chemical composition?

Brian Abblett: Sure. Let me just start by talking about the first bit of the question, which is: Why do you choose a particular catalyst, sulfuric or hydrofluoric? Fundamentally, those two things do different things for different molecules. What you tend to find, and I think as Sally mentioned, there are 50 hydrofluoric acid alkylation units in the US. There are about 50 hydrofluoric and about 45 sulfuric, so it's a fairly equal balance. What you find is the choice is based on the feedstock, the type of feed that people want to supply to the unit.

HF alkylation is able to take a wide range of molecules as feed. Particularly C3's and C4's. Whereas sulfuric acid really only deals with C4s. So, if you've got a refinery configuration that takes the C3's, the propylene, for example, and makes it into a chemical product like polypropylene, they can then use sulfuric acid, or may choose to use sulfuric acid, to deal with their butylenes.

Whereas a refinery such as Torrance, that has a mixed feed stream of both propylene and butylenes, needs an HF catalyst to be able to alkylate those molecules. So, that was the first part of the question.

The second bit of the question, how would you convert to sulfuric acid, or a hydrofluoric acid to a sulfuric acid? The short answer is, you don't. You knock it down, and you build another one. There is no conversion; nobody has ever converted, and nobody has ever done it. It's not really possible to do because the process conditions are so different. In fact, and we've talked a lot about mechanical integrity, even the materials of construction are very different. The materials that work in a hydrofluoric acid unit, like **monel**, do not work in sulfuric acid unit. So, basically it's: knock it down and start again.

I'm sorry, you had a supplement on ionic liquid. To be honest, I couldn't answer that question, really, because again, at the moment, I'm certainly not aware, given all the work we do at ExxonMobil, to look around the world, that

we've got a commercially viable option of ionic liquids, so, being able to study that and understand what it really looks like, I can't really answer that.

Vanessa Allen Sutherland: Okay, thank you. Member Ehrlich?

Manny Ehrlich: Thank you. I'd like to follow up on part of the Chair's question. You said that in one of the studies, that the judge deemed sulfuric to be less safe than HF, or conversely, HF to be safer than sulfuric. Do you know what the basis of that was?

Brian Abblett: Yeah, the basis was – again going back to the – without dredging through the details, it was a court-appointed safety advisor who completed an analysis, and then an evaluation based on QRA of a sulfuric acid unit, an equivalent sulfuric acid unit, and the MHF unit at Torrance. Having compared, on a like-to-like basis the QRA of those two units, the conclusion that was reached was that the Torrance refinery unit, and this was part of the consent decree, that HF was at least as safe as, or safer than, an equivalent sulfuric acid unit. And that was demonstrated by the safety advisor to the satisfaction of the court, to the satisfaction to the Superior Court judge. And you can imagine, there was a lot of back-up behind it.

Manny Ehrlich: I'm not really sure I understand what you just told me, except that people made a decision about the safety, and I'm not sure that they were the experts in the process.

Brian Abblett: The expert in the process was the independent court-approved safety advisor.

Manny Ehrlich: Ok.

Brian Abblett: He was the person who advised the judge.

Manny Ehrlich: To follow up on a question that Dr. Kulinowski mentioned earlier: Do you know what was broadcast to the public at the time of the explosion, and I don't want to talk about the near miss, at the time of the explosion, what was broadcast to the public, and what preventative actions were taken?

Brian Abblett: Um, yes. I guess, what was actually broadcast to the public, was communicated in the initial stages of the incident, was …we worked this very closely with the city, because [of] the current system that we use, the Torrance Alert system, and, clearly, we also have a siren from the refinery. The siren was not sounded during the incident because there was no direct and immediate threat to the population.

We did go around to various schools and advise them that there was dust in there air, and the way to deal with that was, if people were feeling uncomfortable, they should certainly go inside and not, you know, breathe in a dusty atmosphere, because the impact of the dust is similar to, maybe, a windy day down on the beach. Um, there was then information communicated by the equivalent of the Torrance Alert System at the time. Since then, I think, we've taken a lot of feedback on how effective some of that communication was, and I know the city's taken that seriously and looked for ways to improve that and we continue to work with the city, because, clearly, that's a partnership activity to make sure that the public gets the right information at the right time. We published a number of things on our website.

We used various different mechanisms to communicate, but, immediately after the incident, it tended to be, you know, phone calls to those receptors that may be impacted and may choose to take some voluntary form of action and then after that it was phone calls, and things triggered by the alert system.

Manny Ehrlich: Do you have any additional information today about the dust that would cause you to take any different action should that happen tomorrow?

Brian Abblett: No.

Manny Ehrlich: Thank you.

Vanessa Allen Sutherland: Just a moment of indulgence before I recognize Member Kulinowski to see if she has questions. On the onsite capabilities for a response: Can you talk a little bit about the company's fire brigade and what actually would happen

onsite before a local responder team or a fire station would respond and other first responders would arrive?

Brian Abblett: Yeah. We've got a whole bunch of—we've got a brigade in the refinery that is trained for emergency response. Typically, it's about a 100 people who've had emergency response training, and that's something we frequently refresh. We were talking yesterday during the visit about the fire training that the guys do down in Texas A & M. Typically, they spend the week down in Texas A & M training for all sorts of emergency response eventualities, including fire, *et cetera*, *et cetera*. So, the immediate response would be from our own responders around the refinery at the time of the incident, and, very quickly, immediately, a call would be put in to the Torrance Fire Department, who would mobilize close to the refinery, and then we would set up what is called a "unified command" at the point of the incident. So, we'd have a unified command with ourselves and Torrance Fire Department, and then the resources from the Fire Department, and our own brigade emergency response team.

Vanessa Allen Sutherland: Good. Thank you. Member Kulinowski?

Kristen Kulinowski: I do have a question. Actually, it's more of a thought. You mentioned that the settler was a two-inch thick tank, and that was much thicker than the one that we showed in our presentation, that had been ruptured by the falling debris, but I'm having a hard time wrapping my head around an 80,000 [pound] piece of debris flying through the air just a few feet further than it had, and landing on that tank, and what I think you were implying was, that it wouldn't have ruptured because it was thick. I'm having a little hard time with that scenario. That's my thought.

Brian Abblett: Well, let me kind of help you with that thought. So, the thought is something along the lines of, we had a piece of debris fly through the air and hit a thin-walled tank, and you saw that it made a hole in it. Something 4 ½ half times as thick wouldn't make the same hole. We can debate that; we can argue about the science and the energy behind it, *et cetera, et cetera*. Let's just imagine, for a moment, that it did have a hole in it, that it created a hole.

So, let's talk about what a settler is. A settler separates acid and oil. Acid sits in the bottom of the settler, about two feet high. Everything above that is oil. So, if you have a leak, or a hole in the top of the settler, you get an oil leak. During the course of that oil leak, our mitigation systems would have kicked in, as they did in this case. The guys hit the "emergency dump," and all of the acid is removed from the unit, or removed from the settler, within the space of about four minutes. So, it is certainly unlikely, in my mind, that, even if there had been a hole in the top of the settler, that there would have been any sort of MHF released from that vessel.

Kristen Kulinowski: So, do you have a rating for what kind of impact would have caused a rupture of that vessel if it wasn't an 80,000 pound piece of debris. Is there a rating or a specification? Perhaps you can't share that publicly, but, what would it take to rupture one of those things?

Brian Abblett: Uh, quite a lot. I mean you're right; I don't think we're going to trade numbers on that, but, again, if I take you down the scenario that says, even if it had, we wouldn't have had an acid leak. Because in the top of that circle, it was hydrocarbon; and, if I even take it a step further, and say: "Okay, maybe we did have a hydrocarbon leak, sorry." "Well, maybe we did have an acid leak." Then, all of the mitigation systems that were in place were fully functioning—

Kristen Kulinowski: I guess I'm imagining a more catastrophic rupture than just a small hole.

Brian Abblett: that's not a scenario I can imagine.

Member Kulinowski: OK.

Vanessa Allen Sutherland: Member Engler?

Member Engler:

Thank you for your presentation. I thought that you provided some very useful information [for] the deliberation of the Board. The Board is fundamentally a scientific agency, which has to consider all sources of information in evidence, and that means, at times, there

may be differences between Board Members. There may be differences between Board Members and staff, but, the problem I'm having, is that, as illustrated by the dialogue that we just had, about what the potential impact of a debris hitting the HF settler, could have been, we were engaged in a discussion, that was fascinating to me, but, I felt like, as a Board, we had one hand tied behind our back, because, if you're not complying with the subpoenas, it's very difficult for our investigative staff to view the information, and make a judgment. You know, the industry learned in the 80's, over a long period, that there was a right thing to do, that the responsible thing to do, was to share information. That didn't. . . that lesson didn't come down from the sky. It came from the concerted efforts of the people who are here from communities, the workers who are here, community organizations, labor unions, and enlightened management who said, at a minimum, we ought to share information, and, I noticed that you're sharing information respecting the elected officials who are here, and, with the Council, you offered that cooperation on this question of what the alternative could be possibly moving forward. And CSB certainly has no conclusions about that.

But you offered to cooperate with local elected officials, as is entirely appropriate, but, frankly, you didn't offer to cooperate with us, and I would urge you, and ask you to think, but also to comment now on, why not comply with the subpoenas? Because I think it would be an element of reassurance, and it frankly might be valuable information to the CSB in looking, not only at this incident, but the fact that there have been offsite, major offsite releases of HF at other refineries. So, in an effort to prevent something, however unlikely, in an effort to prevent something from happening that could be catastrophic, uh, why not comply with the subpoenas?

Brian Abblett

I think I'd like to just quickly hit three points on that, if I can. I probably won't satisfy you, but I'll try nonetheless. The first of which is, you know, I think its legitimate that, if people have concerns about HF, sulfuric acid, et cetera, time has passed, that we can take another look at that. And that's the reason that we think engaging with AQMD, the city, and with whoever else would like to participate, is an appropriate path forward.

We do have some questions about jurisdiction, and I mentioned those, but, what I'd like to offer , what I'd like to say is that, I know that we've offered to meet with you and talk about that. . .and I'm not sure if the meeting has been set or scheduled yet. I understood that there would be a meeting of further discussion in January, um, between some of our executives, and certainly yourself, Chairperson Sutherland. I think that would be a good opportunity to explore that further, and try to reach a conclusion, and try to reach an alignment on where we go.

Vanessa Allen Sutherland: As a very quick follow up, I want to make two comments before we transition the evening into the Process Safety Management panel, because, I do want to be respectful of everyone's time, and we have a lot to cover in the rest of the agenda. One of the reasons that, and this is not really a question, it's more of a statement. One of the reasons that I mentioned the NTSB before, is, for any of you who have been watching the news, and you see a train derailment, or you see a plane crash, and you see the NTSB launch, they get broad participation, because, over the 65 or so years that they've been around, people understand that their role, [which is] very much analogous to the reason we were created, and the entity off of whom we were modeled,—that our goal, and our role, our statutory mandate, is to get as much information as possible.

It's not to bring out an enforcement action, because we are overseeing a narrowly tailored set of rules; it's not to be punitive, and only look at a narrow slice of this, this, and this, and [ask: ]"Is it criminal, or is it not?" It is to do an independent, non-regulatory root cause analysis that will help, not only the object of our investigation, but everyone else who shares a responsibility for safety: first responders and fire fighters, insurers, regulators—everyone, in a collaborative, shared responsibility to keep us all safe—that is our role . And so, our jurisdiction *is* very broad; that's how it was written, and it's no different than in NTSB, in which we are out to find the root causes, and that may go beyond a narrow regulatory look or framework. And so, DOJ, as I think you all heard earlier, has agreed to enforce those subpoenas, because they looked at our jurisdiction and agreed that, in fact, it does cover near-miss scenarios, given that our core safety purpose is to prevent.

It's not to be an emergency response group, and we do investigate accidents, but, the goal is to learn from those and then to prevent serious or catastrophic events. So, I welcome all the comments, but I just want to make sure that, as we continue through the evening, I clarify for those who are kind of wondering [about] the CSB role, and [saying,] "well, we want you do do *this*." Our role is not enforcement, so I don't want people to leave here after the comments thinking, um, that we are going to be bringing enforcement actions and fines and penalties and making statements of shutting people down, because our goal is to learn as much as possible. But that doesn't mean that we're necessarily going to agree with all of the recommendation recipients about how they need to operate more safely, or what we think will actually improve safety.

And I think there is still more work to be done, from our perspective, on learning how MHF is actually modified, and how it relates to sulfuric acid, inert, and other chemicals. And, I think that if we got more information from you, we could short-circuit many of the processes, and we could learn and understand the technical issues. I think you said in your opening remarks that if people understood it—and I think you're absolutely right—if we understood it, we could make more informed analyses, and hopefully be able to yield recommendations that would work to the benefit to all.

Manny, you have about two minutes or less to make your last comment.

Manny Ehrlich: I won't take that long. I have two quick questions. Number one: Is that settler a coated vessel?

Brian Abblett: Yes.

Manny Ehrlich: Okay. Which speaks to whatever force it's going to take, being two inches thick. Is that not correct? And, is there a type of secondary; I couldn't tell from the picture, and I didn't see it. Is there a kind of secondary basin around the bottom of the tank for secondary containment, and perhaps you'd like to explain that, if that's the case?

Brian Abblett: Sure, yes there is. I think people articulated it earlier. I mean, when the safety advisor's report in 1999 was published, it talked about changes in the concentration of the modifier, the "M" in the MHF, and it talked about the addition of barriers. What you actually saw in the picture is a barrier, and the barrier is around the bottom of the settler. So, that if there should be a leak of acid, or MHF, from the settler, then the barrier is another passive mitigation that would help mitigate the impact of that release.

Manny Ehrlich: Thank you.

Vanessa Allen Sutherland: Well, I would like to say thank you very much, Mr. Abblett, for answering all of our questions. And I would like to thank you for describing the steps that you all have taken with the safe park procedures that have been updated, and sharing that information with us.

We are going to take a short 15-minute break, which means, if everyone can return in 15 minutes, which is just about 8:04.

**[End of Audio]**

**Duration: 167 minutes**

Chair Sutherland: Can I get everyone to take their seats, please? Um, before we get started on the panel, which will run approximately, uh, 40 minutes, before we get to Board questions and public comment, I'd also like to recognize someone that we, um, failed to [recognize] at the beginning. Uh, Eric Boyd is here, as a representative of Congresswoman Janice Hahn's, um, office. Some of you already know, um, she's a Member of Congress for the 44th District of California. So, thank you, Mr. Boyd, for announcing, uh, your presence on behalf of Congressperson Hahn. So, with that, Member Engler, you can introduce the panel.

Member Engler: Thank you very much. Uh, as way of introduction, uh, to this panel, California – California, uh, is in the forefront of making very much needed reforms to refinery safety rules.

And I use the term deliberately, "refinery safety rules," to be a little bit broader than what's been referred to as "process safety," because the CSB's mandate is not only to address the workplace based, uh, issues, process safety issues, in that sense, but also impacts on the community and the environment. So, when I use the term "refinery safety" about our panel, our panel represents concerns about the community, about the workplace, about the broader environment, about the opportunities to – to –successfully craft, um, reforms of refinery safety policy that can protect us all at the same time, uh, keeping refineries in – uh, in our – in California, uh, and operating at a safe and environmentally sustainable fashion.

So, I'm not going to read everybody's, uh, biographies. A number of you have them. I know that, uh, there was sheet distributed. I'm not sure all of you got it because of the very large, uh, number of people we have tonight. The bios will be posted on the CSB website at CSB.gov. But the folks that are going to speak tonight, and, again, apologies to you for not, uh, uh, elaborating on your wealth of experience and background, but that will speak for itself in your presentations, I'm sure. And, uh, the folks, and thank you for coming, uh, will be in this order: Uh, Mr. Clyde Trombettas, the statewide, uh, uh; Policy Advisor for the Process Safety Management Unit at the California Occupational Safety and Health Administration; Mr. Paul Penn, the Emergency Management and Refinery Safety Program Manager for the California Environmental Protection Agency; Mr. Thomas Umenhofer, Vice President of the Technical and Research Division of the Western

States Petroleum Association; Mr. Kim Nibarger, Chair of the union's oil sector and head of the oil bargaining nationwide for the United Steelworkers, and just recently with the union Safety and Health Department; and, uh – and Charlotte Brody, Vice President of Health Initiatives at the Blue Green Alliance. And, of course, feel free to add a sentence about your own background or organization in your remarks. So, Clyde, can you begin?

Mr. Trombettas: Thank you very much. My name is Clyde Trombettas. I'm the statewide manager for the CALOSHA Process Safety Management Unit. Chairperson, uh, Sutherland, Members of the Board, on behalf of the California – the California Department of Industrial Relations, and Director Christine Baker, welcome back to California. It's nice to have you back. Uh, I'd like to thank you for your leadership in responding to the challenge of ensuring the safety and security of the nation's process industries.

I'd like to thank you. I'd like to thank your staff in particular for working so well with my staff during the investigation at the ExxonMobil Refinery in Torrance. Their professionalism and expertise was an asset to our investigation. So, thank you, again. On Monday, February 16, 2015, the ExxonMobil Torrance Refinery Fluid Catalytic Cracking Unit, or everyone should know by now, the FCC unit, shut down when the main air blower was lost due to high vibration. On Wednesday, February 18, at about 8:48 a.m., a rapid overpressure, or an explosion, occurred in the FCC electrostatic precipitator.

This occurred when hydrocarbon vapors from the FCC main column flowed back through the FCC reactor and regenerator, mixed with air from the CO boiler, and then combusted in the ESP. (I tried to paraphrase that down to one sentence.) Uh, Cal OSHA's PSM unit opened and investigated – uh, opened an investigation on February 18, 2015, and closed the inspection on August 13, 2015, issuing 12 "serious" citations and six "willful serious" citations in the amount of, uh, a little over $500,000.00, which was the second highest penalty amount for the PSM unit in 15 years, Chevron being the first.

Uh, some of the citations issued, uh, for violations of the current PSM regulation were, um, a violation of the Process Hazard Analysis, where Exxon failed to perform a PHA for identifying, evaluating and controlling hazards in the ESP, and operating with

broken and bypassed safety critical devices. Uh, for operating procedures, ExxonMobil failed to implement the FCC emergency shutdown procedure. Uh, Exxon failed to develop and implement a "safe park" procedure for the FCC unit. Exxon failed to ensure that the pressure transmitter on the overhead pipe above the main column in the FCC, uh, was operating.

Uh, on February 18, 2015, it was observed that the pressure transmitter was inoperative.

For mechanical integrity, Exxon failed to ensure that the mechanical integrity program implemented and followed, uh RAGAGEP, or Recognized And Generally Accepted Good Engineering Practices, on its safety instrumented systems. Exxon also failed, um, uh – or, excuse me. Exxon used a defective FCC spent catalyst slide valve between the reactor and the regenerator. Some of these, uh, findings are very similar, uh, or identical to your staff's findings, as well.

Uh, emergency planning and response: The employer failed to activate the employee alarm system at the ESP work area to notify contractor employees working in the area to evacuate, uh, uh, prior to the ESP explosion. There have been many questions from the public, local, county, state, and federal agencies, concerning the new proposed PSM regulations for refineries, as to whether the incident at ExxonMobil would have occurred if the proposed regulations were in place at the time of, or before the incident. It is nearly impossible to answer those questions.

Um, but what I can address is what additional safeguards would have been in place, uh, that could have reduced risk of the event occurring, should these regulations have been in place at the time prior to the incident. So these, uh – these few, uh, uh, sections that I'm going to talk about, are sections that are being proposed in the, uh, uh, new PSM regulation that is going for adoption, and is not in place now. So, these are things that we could not issue citations on, or force ExxonMobil to do now.

Process Hazard Analysis. Uh, a comprehensive, uh, analysis. The PHA must take into consideration previous major incidents in the petroleum refinery, and petrochemical industry sectors that are relevant to the process. The PHA must consider all inherent safety measures and safeguards applicable to the hazards. Currently, to

do, uh, a – a PHA, they just really need to, at the very minimum, just look at their unit, and look at the incidents that occurred in the past five years at their particular unit. Well, this particular backflow of the FCC is something that's fairly common in industry. And 10 years ago, it happened at the Shell refinery up in Martinez.

So, if they would have had – you know, during a PHA, if you would understand how those incidents occur, and when they occur, there are things that you can address. The PHA requires an assessment of all applicable damage mechanism reviews to ensure that the PHA addresses the full scope of potential physical hazards that can affect the process, such as corrosion, erosion, embrittlement, and others. Seismic events must be considered as part of the assessment of potential external events. The new regulation improves the rigor, transparency, accountability, and effectiveness of PHA's, which will assure that process safety hazards are more effectively identified and mitigated well before they pose a risk to workers or the public.

I believe, uh, that was a comment, uh, that the investigation team found, as well. If this investigation was in place, a more thorough review of the effectiveness of safeguards would be examined. Uh, the bypass and defective CO detectors in the ESP, and the defective pressure transmitter in the FCC, would have been, uh – would have been identified.

Operating procedures. It gives the authority to qualified operators to initiate emergency shutdown, and other emergency operations, as necessary, resulting from leaks, spills, releases, and discharges.

By requiring specific operating procedures for emergency conditions, the new regulations protect work, employees, and the public—and public safety by avoiding on-the-fly decision-making by managers and employees when emergencies occur. If this section was in place, um, the FCC supervisor could not have forced the head operator to place the FCC unit in a safe park position without written operating procedures. Uh, I kind of – I kind of identify that to, uh, hooking up, um, I'm dating myself, hooking up my VCR to the TV without directions, Okay? It's the same thing.

Uh, you know, having, uh – you're trying to tell the operators of the unit to place the unit in a temporary state, uh, as – as the plant manager had stated, which is rarely done without any written procedures on how to do that at all.

Mechanical integrity. The new regulation requires the refinery to ensure that all equipment, controls, safeguards, and appurtenances are: suitable for the process application for which they are, or will be, used; fabricated for the materials of construction; designed, constructed, installed, maintained, inspected, tested, and operated; and replaced in compliance with manufacturers' and other design specifications, and all applicable codes and standards.

If this section was in place prior to the incident, a more – more thorough inspection would have been required on the spent catalyst slide valve.

Employee participation. I think this is a very – a very important one. Where the existing PSM regulation requires the employer to consult with employees and their representatives on the conduct and development of the PSM program, the new regulation requires effective employee participation at the earliest possible point throughout all phases of the development, training, implementation, and maintenance of the PSM program. I believe it's a huge step forward.

Stopping dangerous work. A procedure is required that – that will ensure stop-work authority on the part of employees along with the right of all employees, including those of contractors, to refuse work based on safety or health concerns. Authority is given to employees to recommend that the operator in charge of a unit shut the unit down on the basis of safety or health concerns. The operator in charge of a unit is given the authority to shut down the unit based on safety or health concerns. Um, part of our investigation, from our interviews, the supervisor of the FCC unit ordered the head operator to reduce the steam pressure in the reactor.

The head operator expressed his concerns about reducing the steam pressure. But the supervisor ordered him to do it anyway. This allowed hydrocarbons to enter the reactor from the main column, eventually, sending the hydrocarbons to the ESP, resulting in the explosion of the ESP. Even though all refineries have a stop-work

procedure, there is no regulation to protect the employees should a supervisor override them. Uh, I hear this a lot in refineries. They all have this stop-work – we call it the "pause-work" procedure, because– it really has no teeth. Um, there is now regulatory protection to support workers who invoke the stop-work authority.

So, that actually provides a little bit of teeth into this, uh, program. Another one that's, uh, near and dear to my heart is a process safety culture assessment. A group's culture reflects what the group – what the group values. If the group places a high value on safety, the group is said to have a strong safety culture. Because managers shape the safety culture of a refinery, regulations that are practical, meaningful, and legally enforceable are essential to improving the plant's safety culture, whereas safety is prioritized at a level commensurate with other pressures facing managers, such as efficiency, profitability, and competitiveness.

Safety culture assessments are used to determine whether [and] to what extent management encourages a culture that values safety. To date, there have been no requirements of refinery managers to conduct safety culture assessments, or to share the results of those. Uh, they do conduct or take action on the basis of the findings of an assessment. Uh, the new regulation addresses this gap. A robust, uh, assessment and reporting mechanism is the foundation for understanding and solving safety culture problems at a refinery, and for measuring changes over time. When safety is prioritized by managers, the effect could be felt throughout the organization.

And, you know, and – and I was thinking about this, you know, in conducting our investigation at the ExxonMobil Refinery, you know, my staff has found that, you know the employees are all professional and very thoughtful workers. Uh, they care about what they do. They, uh – uh, they try to do the right thing. And – and what sometimes get them in trouble is that there's a, you know, as an example, there is a culture of, you know, "run, baby, run," versus, uh, you know, taking an, uh, an opportunity of possibly having to shut a unit down.

And having a culture like that can be very burdensome, I believe, on really good workers who want to do the right thing but, you know, are getting pressured into, maybe, instead of a making a good decision, maybe making a poor decision. So, having a safety culture assessment done, and having recommendations

implemented, I think is – is vital to the safe operation of a refinery. There are many other sections in the proposed PSM regulations for refineries. Uh, these are just the ones I feel directly relate to the incident at ExxonMobil.

The Department of Industrial Relations and CalOSHA are working toward submitting the proposed PSM, um, regulations, or changes, along with the economic analysis of those changes, to the Occupational Safety and Health Standards Board, hopefully by the first week of, uh, February. Uh, this will initiate the process of formal rulemaking and public comment. After the Standards Board adopts the proposed changes, the new standards for refineries will be submitted to the Office of Administrative Law for approval. It is anticipated that the revised standard will go into effect, hopefully, by January 2017. So it's a fairly lengthy process.

The Department of Industrial Relations is taking the lead in developing enhanced coordination of oversight and enforcement activities of petroleum refineries with federal, state, and local agencies. In 2015, the Department of Industrial Relations led an interagency enforcement working group to discuss the coordination of enforcement activities, including cross-referrals, cross-training, and joint or coordinated inspections and auditing. The working group will help identify refineries to be targeted for inspection. Lastly, the group will discuss the facilitation and development of an electronic information and data-sharing system among federal, state, and local agencies.

This system will include information about inspections, compliance, and enforcement activity, as well as the means to collect information, identify the reports, and a process for timely flow of information between regulatory agencies. And we've just started that, uh, like I said, this last year we've done a number of, uh, joint inspections with the – with the other agencies. And we're sharing information. Um, we're doing a lot of joint training, um, preparing everybody for the adoption of the new PSM regulation. So it's – it's moving forward very well. Um, I'm pretty proud of the process. And that's all I have.

Member Engler: Thank you very much. Uh, we'll hold questions from Board Members, correct, until we get through the whole panel? Um, Paul – Paul Penn from California EPA is next, thank you.

Mr. Penn: Thank you, Chair – Chairwoman Sutherland and Board Members. Again, I'm Paul Penn. I'm the refinery – the Emergency Management and Refinery Safety Program Manager at the California Environmental Protection Agency. Um, before I go into my remarks, I'd just like to provide a historical note. And you have a representative from – uh, Representative Maxine Waters here tonight. And, just to put things in context, back in the mid-'80s, um, when she was an Assembly member here in California, she was the author of AB 2185 and 2187, which were the first, uh, hazardous materials emergency planning and community right-to-know legislation in this country.

There were two states that had those. One was New Jersey, uh, Mr. Engler, and, uh, one was in California.

**[Crosstalk]**

Mr. Penn: So I want to make sure that – that that was acknowledged. And I see that, you know, being here this evening, uh, is kind of a reflection of the evolution of all of those activities. Um, what I'd like to do is kind of build a little bit on, uh, what Clyde had spoken about earlier and, also, provide some broader context of the activities going on in California. Plus, uh, I'd like to go into a little depth on our proposed emergency preparedness and response regs. Um, so I do have a quick presentation here. And, um, what I will try to do is kind of insert commentary on the ExxonMobil event from February 18, uh, within, again, the context of this presentation.

In California, the governor designated the California Environmental Protection Agency as the lead agency for the Interagency Refinery Taskforce. This was triggered by the event at the Chevron Richmond facility in 2012. Uh, and what happened was, the governor designated a working group, and then came out a report. Often, as we've seen in government and other organizations, that tends to be the end of it. But that is not the case in this circumstance. Um, all the agencies involved have been diligent in pursuing the recommendations that have been [made] here. And Clyde expanded on a very important and very significant part of that, which is the safety and prevention component.

I'm going to break this down in two of the major thrusts of the activities going on. One is the safety and prevention side. And one

is the emergency preparedness response. Uh, I want to note that the California Environmental Protection Agency does not own any of these regulations. In this case, the safety and prevention side is, uh, under the responsibility of the Department of Industrial Relations and the governor's Office of Emergency Services. There is a process safety management side, which focuses on workers' safety, which we kind of referred to, uh, colloquially, as "inside the fence." On the outside of the fence is what is known as the CALARP, and uh, is based on the USEPA Risk Management Prevention Program coming out of the Clean Air Act. In California, it is referred to as the California Accidental Release Program, and that is the "outside the fence." These are very similar programs. And the efforts, uh, led by the Department of Industrial Relations, and others, uh, have been to both strengthen and align these regulations. What we want to do is learn what we – what we can from not only the Chevron Richmond incident, and now incidents like this that have occurred here at Exxon, uh, but also some experience from places that have similar ordinances and regulations, specifically, the Contra Costa County Industrial Safety Ordinance.

Uh, I believe we have been diligent and forthright in working with all of the interested parties, uh, including, uh, the – the state agencies. The local agencies, known as the CUPAs, is a Certified Unified Program Agencies, and bringing in actively industry, environmental groups, community groups, and labor. Again, the focus here is to strengthen and align. We want the end product of this is to improve safety both inside and outside the fence. And we want to spend our efforts on issues that are substantive, uh, and minimize, uh, what I refer to as administrivia. . . uh, to put their efforts into the things that really matter.

On the other side, is an emphasis on emergency preparedness and response. And what we want is for the refineries themselves to, as I say, take actions to enhance their preparation, their capabilities, and capacities to really ensure a safe and effective response. And I would say that during this response here at ExxonMobil, we noticed a couple of things that went well. One was, it was mentioned earlier, the, uh, implementation very rapidly of a unified command, meaning the private sector Responsible Party and the public response agencies, specifically Torrance Fire, because of their agreements and their experience in working together, they immediately banded together to manage the event.

Now, that was very good. What is almost inherent in dealing with the Fire Department, and dealing with the Fire Brigade on site is they focus in on point of origin at the ESP— uh, the spot fires that occurred, and the injuries that were on site. I think what is recognized as a shortcoming, was dealing simultaneously with the offsite consequences. Um, and, also, I will mention, uh, in – in the use of the incident command system, to really have an effective joint information center. So, they had a unified command, but the joint information component, which clearly was very important in this case, because this is such a rapidly evolving event, and you have to get information out to the public, uh; in many different forms, was really, uh, something I think, uh, we identified as a shortfall. Uh, and then at the CUPA level, that is, the local agencies, their responsibilities, um, to take an overall view within the community of the things that need to be done. A lot of the activities that we're talking about here, uh, take a lot of work. And this is a shot at the Exxon, uh – the Chevron Richmond facility in 2012. And I daresay that is an impressive photograph,correct? Um, and you would think that there would be, uh, outcomes, and one of the outcomes is the Interagency Refinery Taskforce. \

And, while I'm not going to read this, it basically said that there were certain things from the report that identified shortcomings in both protocols, communication, coordination. Again, our intent is to significantly minimize and – you know, eliminate events. I'm not so naïve that we will never have events. These – these are hazardous materials which are inherently hazardous. Our intent is to minimize both the frequency and magnitude of any type of event. On the emergency response side, some things I think are fairly novel here are the requirements to designate a – a geographic zone of the offsite impacts.

And I would use an example here. If there was a catastrophic failure of the HF, the footprint would be fairly large. If it was converted to sulfuric acid, that footprint might be much smaller. And, therefore, the geographic zone would also be, uh, smaller, if that was the greatest extent. And I listed here things that needed to be done beforehand in terms of outreach of communication, notification, uh, coordinating protective actions. The last thing you want is credible sources, one group, saying, uh, you know, "Shelter in place," and the other to say, "Evacuate." There's also a requirement to fully implement the incident command system.

And I do not think that is a problem because all the refineries here have implemented the, uh, uh, incident command at one form or another. Um, and then because these are low frequency, but high consequence events, it is a requirement to have a very robust drill and exercise program so that we can learn and push and see where the failure points are and, uh, also, because people don't do this on a regular basis, it's important to – to make sure they go through these so they know how to work in uncontrolled, or as referred to in the HAZWOPER standard, as, you know, "uncontrolled releases."

And also, the ensuring that they, uh, implement the applicable worker safety standard, such as the hazardous waste operations, emergency response, uh, respiratory detection standards that are regulated by my colleague over here. And then, as – as it bumps up to the, uh, local – the area plans that are done by the CUPA's, it really addresses a series of issues. Basically, it builds on the requirements, uh, of the refineries. So we have a community-wide approach. And, again, we can identify the strengths and the shortfalls there. Next steps, continue our outreach. We've held at least eight safety forums for which we held this week, uh, and we'll be continuing.

We'll have another one in Richmond on January 20. Uh, we'll take the comments. And as with the safety process management, uh, we will then go into the formal rulemaking process. Uh, our desire is to have these in place, uh, in the beginning of 2017, which is light speed for regulatory development in California. And that's, uh, my contact info. If people have comments, we would welcome that from both the Board, uh, we've been working very closely with the Board, and the members of the audience. Uh, again, we want to do as much leg work now; when we get to the formal rulemaking process, it gets much more cumbersome. That is the end of my remarks.

Member Engler: Thank you very much, Paul. Next up is Thomas Umenhofer, Vice President of the Technical and Research Division of the Western States Petroleum Association, which I understand is the major trade association.

Mr. Umenhofer: It is indeed. It is indeed. Our association does represent the majority of the refineries in the state of California. And Madam

Chair, Members of the Board, thank you for inviting me tonight. As I was looking at our panel here, um, it… it's been said that we spend more time talking to each other than we do our own families. And this is a good example of us spending another night together. Uh, and that really leaps into where I wanted to take my comments, uh, this evening. Uh, my role, uh, at the WSPA is to facilitate bringing the experts from the refineries and process safety management together to review the draft regulations that are being put together, understanding we have three regulations essentially going at the same time. We're in the pre-regulatory stage. In other words, there's no formal language out yet. The earliest one was Clyde's, what I call CAL PSM, and that was followed by what I call CAL ARP, which is CAL EPA, primarily. And then the latest is – is the work that, uh, Paul is doing on – on emergency response. We started a process of collaboration, not only us, but our colleagues here, uh, over two years ago. Uh, and it was initiated by, uh, uh, Clyde's boss, uh, Director Baker, um, with Clyde and – and Amy Coomb(?) and it's been a very successful process.

Uh, we have brought to the table on the WSPA member side, experts, and we have literally gone over every line, of the draft regulations for all three so, it wasn't just Clyde. Clyde, on the other hand, responded [with] five versions of the document. So he kept us – kept us busy. And – and we – we were talking a little bit earlier. We've come a long way, and these documents are looking really good. So what I wanted to do tonight is talk a little bit about what work do we need to do? What do we want to get done? Some things we're going to be – be looking at, at least from my – my perspective. So I'm going to bring up three items. The first item is what I call harmonization.

I kind of like the term. Three regulations. Essentially, three different governmental organizations, uh, dealing with overlapping, uh –as Paul, aptly put, overlapping responsibilities. And, uh, I think it was put well in the – the, uh, Governor's interagency working group, uh, report, which said, in essence, it's critical that the – the agencies ensure consistency between the draft Cal ARP regulation and the Process Safety Management, uh, regulation during the – the development by DIR. (So, that was at the point where, Paul, you weren't quite at the point where you had some – some language out).

And we. . . .we agree with that. Um, it's so far in the regulation development because we've been involved in all three. It's been siloed, to a certain extent, for good reason. They had to get pen to paper. They have to get something down in terms of the draft. That's the pre-regulatory process. We've gone through that now. Now, we're to the point where we have to start looking at – at harmonization, common definitions, common directives, common responsibilities, to the extent that you can. These agencies have different responsibilities, but they do overlap. That is important to the operators in order for these programs to be effective.

The second item that – that we're going to be looking at is, what I call, clarity— a pretty simple term. Um, and – and what I mean by that is – is things like, requirements, programs, definitions, that we really know what they mean. And, as you draft a regulation, that evolves. . . And I think it's evolved quite a bit. So I'm not particularly saying we need a lot of work to do; I'm saying we need to look at that, as we go forward. One of the areas that we talked about is prioritization. And I think that's kind of important; I – I got a little catch phrase from, uh, a – a friend of mine that says: "If everything's a priority, nothing's a priority."

And that kind of makes sense to me. I'm an engineer. That still makes sense to me. I really think we need to see how the regulations do thrash out priorities, particularly in – in the multiple regulatory regime that we have. And then the final, uh, item that I wanted to talk about, and it would really be the endgame; it's what I call, "delivery of desired results." Um, and that means, I want us to be able to look back and say that we really accomplished what we wanted to do for all three regulations. And, you know, it's important that these regulations can be implemented without confusion.

Um, I think our collaborative efforts are going to bring us there. And I really want to emphasize how collaborative this has been, not only with the industry but with – with, uh, all of the groups, all of the stakeholders involved. And I'm very impressed with the process. I really believe that, at the end of the day, um, we all have the same collective objectives. And they will be reached when we do get to the point of these final, uh, regulations and language that we will develop from that process. So, those are my comments.

Member Engler: Thank you very much. Next will be, uh, Kim Nibarger from United Steelworkers.

Mr. Nibarger: Thank you, Chairperson Sutherland and the Board, for having us here tonight and, uh, for letting us, uh, participate in your presentation by your investigators on the Chevron incident. I – I found it very enlightening and very interesting, and want to commend all of you, uh, for doing a great job. So, um, I'm Kim Nibarger. I work for the Steel Workers. So, I'm the labor guy, uh, at the table here. And I just want to quickly talk about why; um we thought that it was important for the Process Safety Management standard to get some changes, right? So, one example: We've been tracking industry self-reported fires, um, that they – they put on the DOE, the energy information page, since 2007.

Um, and they have self-reported 44.5 fires a year, on average. Um, 2015 wasn't quite so good; they were up to 51. But – but that's pretty serious. When you have a process safety event, and that's allowing material to get outside of the pipes, which is a basic kind of objective in the refining industry is: Keep everything inside. It's almost a fire a – a week. And this isn't counting releases, leaks, or other process-related events that take place that, outside of sheer luck, um, they haven't found an ignition source, or it would be more damaging. So, we think the –the standard hasn't worked as well as we thought it should have.

Um, and – and –another quick example: Um, once OSHA comes in, [and] uh, cites the facilities, right? Nine times out of ten, um, the citations are appealed. And, just to give you an example of one of the defenses a company pulled in an appeals case was: "Um, well, the standard requires me to have a written program, but nowhere in the standard does it say I have to follow that plan." And that –that may sound silly. But that's the standard that we're working with, right? There was a lack of clarity in what needed to be done. And so, um, I think the – the proposed regulation in California covers a lot of those.

It's specific to refineries, too, right? It's – it's a PSM standard, but it's specific to refineries. Um, it was worked out in a, uh, uh, a process that involved labor, industry, the regulators, and community and environmental input. And I think, um, it is an in-plant standard. But we realize that part of that in-plant safety

affects people outside the facility, our friends, our family. Um, and so, we're concerned that –that it works.

Um, so the revisions that we came up with at this point are intended to clear up some of the intent of the standards and take some of the questions out, um, to make more clarification, um, and – and some of the new standards, and Clyde talked about them, but I think the damage mechanism review, the hierarchy of hazard control analysis, the process safety culture assessment, the human factors, and the – the Management Of Organizational Changes, which is – is new. It's – it's inferred in the MOC, uh, standard now. But it's specifically spelled out in the new MOOC. And, um – and the Process Safety Management program, which is a fairly small section, but, for the first time, it's kind of put the onus on somebody to be responsible.

Somebody is in charge. And, so, I think these are all going to be, um, beneficial. Uh, one other thing that I think is important in the standard is the language of, "elimination to the greatest extent feasible," which requires documentation, uh, by the facility as to why they are doing or not doing something. And so, they have to actually put their, um, kind of thoughts in – in writing, rather than give us the reason after the fact. And I think the employee involvement section; the old language is: "consult with employees."

Um, we thought Webster should have come with the standard, because the company seems to think consultants tell us what you're going to do, as opposed to bring us in and talk about what you want to do. And, I think that this clears that up. And it's going to give us a lot more input. And, you know, God bless the engineers, right? But, nobody knows more about what's going on in those facilities than the operators that are in there day in and day out. And if you don't want to listen to what they have to say, you're not going to fare very well. Um, and I think the – the last thing I want to talk about is the call for inherent safety – inherent safety actions as the first and second order measure.

So, you either eliminate or effectively reduce a hazard, as opposed to mitigating a hazard, . . .or, you know, using a warning, procedure. Um, you have to use that hierarchy in controlling the hazards. If you don't do that, you're going to end up with the kind of problems that we've had over the years. So, we didn't get

everything we wanted in the standard. The union thought that there should have been, um, some tighter, uh, areas. There should have been some more specifics. Um, and the company's management didn't get everything they wanted in the standard. Um, but, I think, in the end, it's something that we can live with.

I – I – I think it's going to improve the reliability, and, ultimately, the safety of the operation of refineries, and protect, not only the workers inside, but the community outside. Thank you.

Member Engler: Thank you so much, Kim. And finally, Charlotte Brody from the Blue Green Alliance.

Ms. Brody: Thank you. I – I want to thank, uh, the Chair and the Board for giving me this opportunity. And, I want to apologize for talking with my back to all of you. It's – it's very awkward. Um, but I can't figure out a way around it. Um, I – I'm the, uh, Vice President for Health Initiatives for the Blue Green Alliance, which is a partnership of the country's largest labor unions and most powerful environmental organizations. And, like the Steel Workers and the Western States Petroleum Association, the Blue Green Alliance has been part of the stakeholder process that has been reviewing and revising and revisiting the California Process Safety Management Reforms.

I'm the Blue Green Alliance representative to the stakeholder process. And I am the person on the stakeholder council with the least experience in how a refinery works. But, I have a lot of experience, as a nurse, in the difference between safety and health and danger, disease, and disaster. So, from that perspective, here's my nurse's advice on why the PSM reforms will be a really important addition to the way California regulates its refineries: Some basics. Facilities that refine oil have to be dangerous. Fuel oil wants to ignite. It's built into the design—its DNA. That's what we mean about inherent danger. Process safety is a way to manage that inherent danger.

Now that I've learned about process safety, I've come to understand that it's not just a bunch of procedures and rules. At its best, it's a finer form of courage—a kind of courage that comes from never ignoring or denying or dismissing the danger or comparing it to a windy day at the beach. The courage of process safety comes from never pretending that the danger is not there,

but, rather, addressing the danger every day. This finer form of courage that is embedded in the process safety rules starts from the deep knowledge that refineries want to blow up.

So, process safety responds to that knowledge by providing a framework that all refinery employees and contractors, both management and workers, can use to come to work every day, not only to make product, but also to solve small safety problems together before they become big explosions. Exxon may argue that they can do the solving small problems before they become big problems without a strong process safety law. But the evidence shows that stronger safety and health laws add to good intent and make for safer refineries.

And then there is the simple human difference between how you think about safety problems, if you're a senior manager who works in an office, or if you are a rank-and-file hourly worker. You need the perspectives, the experience, and the problem solving skills of both sorts of people at the problem-solving table. And you're not going to get the full value of both sets of problem-solving skills if the managers have all of the big, cushioned decision-making chairs at the table, and the workers are [only] allowed to make suggestions from the little chairs at the back of the room. So the managers can, and mostly so, ignore their contribution.

Getting out of the hierarchical roles of management and workers and really partnering for safety is a courageous act, as well. I wish there was more of this equal type of partnership with communities in the company-proposed area of planning and emergency response regulations. These regulations have a primary focus on emergency responders. But they do require that the public, the fenceline communities that share the danger posed by the refineries, are informed of the safety procedures in all the languages that are spoken in that community. The proposed regs also ensure that there is plenty of community outreach between the refineries and the public.

I want to close by encouraging the refinery decision-makers who may be in the room, or watching this broadcast, to have the courage to support these regulations. And I want to encourage all of you to do what you can to support these proposals becoming new California regulations, and then to use every word of the problem-solving and worker involvement and community

involvement provisions for all their work. The words are designed to make refineries safer. But we have to squeeze every one of those words into action that will make every refinery community as safe and as healthy as it can be. Thank you.

Member Engler: Thank you so much, and I'll turn the agenda back over to Chairwoman Sutherland.

Chair Sutherland: [To Ms. Brody] Thank you. Thank you, Member Engler. [To speakers] And thank you, uh, all five of you. In a very short period of time, [you] covered a lot of really great ground. And if you will indulge us, uh, for questions before we, uh, invite the public comment period, um, I'd like to start. And then we'll go for the latter half of the afternoon, or evening, this way (pointing). I'm still in the afternoon. I'm optimistic. Um, but I'd like to start, um, either with, um, you, Mr. Trombettas, or you, Mr. Penn, on getting us some, uh, insight. Have you had any "aha!" moments as you've been going through the process safety and emergency response, and post-Exxon explosion reviews and analyses?

Is there one thing that you said, if we could only fix this, or if we could make sure that we did a better job of communicating x? Have you narrowed it down? I – I love that you gave us your thoughts on prioritizing the work, and what you're trying to accomplish, but is there something you think: "Boy, CSB, if you could help us with, reach out with, your advocacy on this one particular topic, over all of these, it would help advance the ball much more quickly or much further"?

Mr. Trombettas: Um, you know I said there were a number of sections near and dear to my heart that – you know, that I'm looking forward to enforcing, um, but, uh, I would say my – my "aha!" moment, as you would call it, you know, I've been in and regulating the refineries for over 30 years. And, so, sometimes you get a little, uh, maybe "jaded" might be the word. . .And so one of my, uh, uh, co-workers had – had suggested, "Well, you know, Clyde, – I think we really need to, you know –put inherent safety into the regulation or, um, hierarchy of hazard control." And, you know, I kind of looked at him, and I was like: "Why?" Well – no. And, uh, this is how, kind of, you know, the – the discussion about PSM goes.

You know, it was a pretty lengthy debate for probably a couple of weeks. And it was, um – and it was, uh – I hate to give the example, but it was a situation where. . .we were talking about HF, and, we're talking about the first, second, third order of inherent safety. And, it was like, well, uh, you can't eliminate it. You can't eliminate it. That's the first order. Then the second order, well – well, yeah, I guess you can substitute it, can't you? You know, and, uh – and getting through that whole idea of, instead of looking at it and saying, "it can't be done," you know, actually going in and thinking about it and [saying instead], "well, you might be able to do it."

And – and if it's something that could be done, then maybe a facility needs to, you know, either A) justify why they can do it, or, more importantly, justify in writing why they cannot do something. And – and really explain it. Um, and I would say, you know, maybe it might be small for some, but that was a really big "aha!" moment for me, was, uh, hierarchy of hazard control. And, uh – and utilizing it – actually, utilizing that. And it is, actually, uh, incorporated in a number of the, uh, sections of the new PSM proposal, uh, Process Hazard Analysis, it's a part of it, Process Hazard Analysis, incident investigation.

For me it was like, I really didn't think too much about it, to where now, it's like, well, we need to have it, you know. This is something that really needs to be defined. And, uh, I think we did a really good job of it. If you're asking my – my one section that was my one "aha!" moment, it would be, uh, hierarchy of hazard control.

Mr. Penn: Very nice, Clyde. Um, I think there were many, uh, epiphanies throughout this process. Um, and I think some of them were both reactive, saying: "well, how would this have prevented the Chevron Richmond event, such as the damage mechanism redo?" Uh, and, again, Clyde and Deputy Secretaries Reynolds and Solomon from our agency have been just so, you know, fully engaged in this, more than I, uh, on – on the safety and prevention side. But I think there's also the looking forward. Let's not react to an event. Let's look at the things that will prevent these things on a largerscale.

And the things that come to my mind are the safety culture, the Management Of Organizational Change, and the human factors,

which often were, kind of like, not really addressed. And, I think by pushing these to the fore, we'll have significant impacts on overall safety within an organization. Uh, on the offsite consequences on the emergency preparedness and response, I think, um, we were saying: "how do we create this area offsite?" You know, is it twice the toxic endpoints? Do we create, you know, a fixed number?

And then, by putting the onus on the refineries, to the satisfaction of the CUPA, the local organizations, and then providing the guidance to both the refineries and to, uh, the CUPA's and how to evaluate that same –you know, that's not right. Um, I believe we will have it, and identifying that zone, and making that goal to reduce that zone as much as possible is – I think will be really significant. And – and we base that, actually, on a lot of the work from nuclear power plants, saying: "How did they do that?" On – uh, the ultimate cataclysm and offsite consequences.

And also, the idea is adequate resources. Okay, say here is where the impacts might be. Do we have the adequate resources to address that? And – and what we did is, we looked at, uh, activities done, uh, by the Office of Spill Prevention Response in the California Department of Fish and Wildlife along oil spill and platform and internal activities, because they require what they call their "planholders" to actually say, "Yes, we can do," – you know, to prove, they can actually do what they say they're going to do, because we want to make this real. A plan is not reality, all right?

And so, I think those were some of the things that come to mind. But, I think we have – we've had multiple epiphanies during this entire process.

Chair Sutherland: Thank you. Um, I willnot hog the mike and ask the Board Members if they have questions, and then we'll go a round robin again. Member Engler?

Member Engler: Uh, this process, as I understand it, is not over. There's actually quite a bit of work to do. Uh, what opportunities, specifically at this point, uh, are there right now and will there be for the public and all interested parties to – to –give their opinions? And what's the best way to do that?

Mr. Trombettas: Well, the, uh, our pre-rulemaking is closed. And so, what we're doing now, is, we're – we're handing it off to the Occupational Safety and Health Standards Board and – or we just call them the Standards Board. And they start formal rulemaking. And when they do the formal rulemaking, that's when there's a number of comment periods, where the, uh, regulations get read. And then industry, advocacy groups, the public, other – other agencies then, uh, provide comment, um, about the regulation.

And, uh – and sometimes, you can get some, you know, changes made to the regulation that maybe weren't thought of in the pre-rulemaking process. And that's really about an almost six- to eight-month process. So, um, how you would find that out, I would – let's see, the website I would go to would be www.dir.ca.gov, and go to the, uh, Occupational Safety and Health Standards Board. The, uh proposals should be up – we're guessing they'll probably be up and ready for, uh, public comment by March, March/April. And I think on our home page we'll also have a statement about that in there, as well.

Mr. Penn: Our proposed regs, we refer to those as amendments, actually, just hit the streets in October. We've been holding these forums to – you know, to elicit, uh, comments from everyone. And we've had very few formal comments. Um, and we encourage everyone to do that. And, I – I'll give you hopefully, a relatively simple, uh, address at the refinery at: calepa.ca.gov. And, actually, the calepa website is, uh, on our refinery web page. We have listings of all of these proposed regulations. We're still taking them. Um, we have received formal comments from WSPA, and we're actually meeting with them tomorrow.

And, um, there were (turns to audience: Hi, Jesse) Jesse Marquez, and, uh, a coalition of environmental justice groups were gracious enough to put together a very lengthy, um, response from the EJ side. And we will be meeting with them on February 2nd. Um, so we have really made the effort. And we have reached out, uh, to the, um – the Refinery Action Collective in Northern California, the folks down here, to the labor unions. Again, we've held, uh, eight, uh, refinery safety forums on these topics specifically. I must say, we have had very few comments. The ones I mentioned and one from the emergency manager here in Torrance, and we did hold two safety forums here in Torrance.

Uh, but we welcome those. Ours are much simpler and much broader than the very detailed, uh, process safety RMP side. Uh, but again, we welcome those, and, uh, and in writing, preferably. And we will evaluate those. Our process is, I'd say around the middle to end of February, we will attempt to, uh, enter into the formal rulemaking process. I have to do up what is called an initial statement of reasons and an economic impact, Uh, but, compared to the work they've done, mine is miniscule, because theirs is really significant.

Chair Sutherland: Thank you. Member Ehrlich?

Member Ehrlich: Thank you. What has been your history in terms of community drills and practices? How do you see that changing as a result of the explosion here?

Mr. Penn: Um, again, because these are low frequency events, uh, we believe that regular – regularly exercising, um, can only help. And, um – and the way I put it is that, I don't want to be glib on this, uh, but there are two extremes as you develop exercises. One is what I refer to as a "mutual admiration society" where you don't get anything done. Everyone talks about how wonderful they are. And the other side is what I refer to as "Armageddon," where the scenario is such that there is no – it's like a scene from the Producers with Gene Wilder going, "No way out, no way out," right? And where you have two choices: You either throw your arms up in the air, or go fetal, right? And –and neither of those work. You want to create stressors. You want people to engage in problem-solving. You want, uh, to identify the strengths and shortfalls of your – you know, the organization, and the organizations that you work with. I believe, by having a comprehensive, you know, exercise program within the refinery, and on the community on a regular basis, that's coordinated, uh, we will significantly improve our capability to respond. Now, you know, I want to ensure that one of the things we did not do is specify what we need to be the objectives, because the objectives change over time. And you want to repeat those, sometimes, and sometimes you want to come up with new ones. We want them to work with the local folks to do that and bring in thelocalfolks. And I will just give you an example. During ExxonMobil, um, there were three organizations that are nontraditional emergency response. And I say traditional emergency response is traditionally fire, law, and EMS. Um, who showed up at a certain point either

during the emergency or shortly thereafter. And that is my colleague right here, right, the Air Quality Management District, and CSB who showed up, uh, and they had a role, but they were not as well integrated into the emergency response structure as they could have been. Right? And I see that, for an example, with AQMD being able to set up monitors in – air monitoring in conjunction with the other activities, that would have a significant, you know, improvement. You can do all of the planning in the world. What happens in real life is going to be different. And that's why we want to rely on a trained and competent staff in our organizations that have the resources, the material and personnel available to them.

Member Ehrlich: And along with the same, um, line of thinking, do you have community panels? I can't remember the term. I'm looking for a specific term right now where you bring panels together, citizens from the community and the, uh – the emergency response community, first responders and the organizations.

Mr. Penn: I believe what you're looking for is the care group. But – but here in – in California, there are Community Advisory Panels.

Member Ehrlich: The CAPs, yeah.

Mr. Penn: Yeah, the CAPs. Uh, and they vary. They are done by the refineries. And they vary both at any one time, and the commitment and structure of the organization. So, more community benefit organizations, some deal with those things. I must say that they vary, you know. And a great example, uh, which Members Sutherland and Engler participated in, is the Contra Costa County Care Organization, which is very dynamic, has community, labor, regulators, and, uh– the industry on them. And they hold periodic events where they – they lay bare, uh, issues that many times people would not want to share with others because they're able to learn from them.

Member Ehrlich: Right. Thank you.

Chair Sutherland: Member Kulinowski?

Member Kulinowski: Well, in the interest of – of, uh, allowing the public to speak to us, I don't have a question. I have a – a thought. Not quite like my other thought. Um, that is, uh, a genuine – a genuine thought of

thank you for the excellent information that you presented. Thank you for the effort that you are all undertaking to advance process safety. And the next step after your efforts are done, (well, they'll never be done), is to see if there are other states in this wonderful country that might also benefit from the approach that you're takking and the CSB would , you know, be out there advocating for stronger safety – and, Process Safety Management efforts, perhaps modeled after yours, after we see what they look like after you're all done. Thank you.

Chair Sutherland: Thank you. So I –

**[Crosstalk]**

Chair Sutherland: So because we do have many, uh, pages, of, requested public comment time, um, I am going to skip a second round from the Board. I will say, uh, in closing that, um, Member Kulinowski very eloquently, uh, identified our thanks because it's hard to get this kind of feedback all at one time and to be able to, you know, have a real-time Q&A as issues arise, and as you hear things. So, I really appreciate you all taking the time to come out this late to do it. Um, I – I didn't have a chance to address Mr. Umenhofer's comments.

But having come from a regulatory agency that sought to enforce regulations, improve safety, improve compliance in the oil and gas pipeline space and hazardous materials, really, by every other mode of transportation, harmonization, clarity, and, um, consistency and delivery of desired results is music to my ears because, often, compliance is born out of clarity and consistency. And even the best, most well intentioned, um, regulated entities, if they're confused, that is a recipe for, um, lack of compliance. So, I'm glad that you are, um, participating in the process. And I – I really appreciate those remarks.

And likewise, um, for, uh, Ms. Brody and Mr. Nibarger, very happy, uh, that you are also contributing to the conversation because, certainly,– you've heard me say tonight, I – I really believe that safety is a shared responsibility, and when you get the community's and the workers', as well as the regulators,' and the companies' perspectives, I hope that what you end up with on the back end is a really sound product that everyone has bought into

and that will have more support from the broader, uh – broader perspective and the broader, uh,stakeholder pool. So, thank you.

So, for the rest of the evening, we are going to hear public comments on either the first part of our meeting, the preliminary findings, the Process Safety Management panel that you just, uh, participated in, or other comments that you'd like to share with the Board, uh, as – as part of this general topic. And hopefully to inform, uh, our investigation. I am going, uh, in – in the order, I think, that people signed up. But I am going to start with – with the library and the [overflow] room. Um, our first speaker, uh, I will call your name, and as I call your name, please come up to the podium that's in the front.

And if you're in the library and the [overflow] room, uh, when I call your name, you can simply queue up as well to provide your comments. So we will start with **Sarah Wilfant** who is a, uh, district director and should be coming – yes. Um, from Assembly Member David Hadley's office.

Laura Maines: Hi, I'm Lauren **Pizer** Maines; I'm with State Senator Ben Allen's office here with Sarah. And we thought, in the interest of time, we saw that there were pages and pages of public comment, we'd comment together. So, we have a combined remark. But we are both here on behalf of our community, as we care deeply about the safety of both, um, our community members, and also the safety of the workers inside the plan,t and, um, we want to thank you for all of your work you're doing on this, how deep you're delving into this issue. And I know that our, um, office, in particular, would like further exploration of the HF issue.

Um, we're – we're trying to do our own study on that, and looking into it. But we still have concerns and would love more information on, um – on the alternatives that are out there, why they're feasible, why they aren't, um, and, also how much study has been put into studying HF itself. Like, how does it react under fire situations and things like that? Thank you. I'll turn it over to Sarah.

Sarah Wilfont: Thank you. So, I'm here on behalf of Assembly Member David Hadley, who is currently in Sacramento tonight, along with, uh, Senator Ben Allen. Um, the two of them spoke today about the refinery and some of its recent problems, specifically concerning

hydrofluoric acid and have been working with stakeholders on determining what sort of actions can be taken to ensure that the residents are safe. Um, the Assemblyman regrets that he cannot be here at this hearing, but I am here on his behalf, to demonstrate that this issue is not going unnoticed by his office.

And I just wanted to let anybody in the audience know, if they have any questions or concerns, we're more than happy [for them] to contact our office at 310-375-0691. Thank you very much.

Chair Sutherland: Thank you. So, I'm sure you may have heard this if you used the yellow sign-up sheet at the front. Because of time limitations, and I believe the building is supposed to be closing as close to 10:00 [PM] as possible, we have – (oh, that's neat. I was going to do it on my phone.) There's a stop watch, um, to, uh, help you keep track of the two minute time, allotment. So, I'm going to start with Joe **Galliani**, South Bay 350. Well, because people are coming from the library, I think, if you want to just come down, I'll call all five that are on this sheet. Kent, I don't know if you're an M or an N, Kent, **Minnel**.

He left. Okay. Terry **Beachmeyer**; Henrietta, is it **Habash**? I think that's a B. And Mohammed – Mohammed, you scratched out your last name, **Agathi**? Is that a G? Well, "Mohammed in the library." He crossed out the name. Come on down. Are you Mr. Galliani?

Joe Galliani: I am indeed.

Chair Sutherland: Okay. You have two minutes.

Joe Galliani: Thank you for having me. I'm Joe Galliani. I am a 23-year resident and homeowner, business owner here in the City of Torrance. Uh, the Torrance refinery is one of my neighbors. I don't consider them a good neighbor. I don't consider what they did here today on the up and up. Um, I was very distressed to learn that they have been stonewalling subpoenas like Mafia dons. That is not transparent. That is not an effort to help the community. And I want to say this: I fully support the Torrance Refinery Action Alliance action to get rid of this very dangerous chemical. But I want to make it clear that if you get rid of this chemical; you have not made this refinery safe.

You have not made them safe because we are at the climate crisis precipice right now. And that refinery, whether it has that chemical in operation or not, is pumping pollution and greenhouse gases into our atmosphere and into our neighborhoods every day, every moment that that refinery is in operation. And our climate scientists tell us that if we want to hit that 1.5 degree limit in global warming, that that refinery has to go. That refinery has to be shut down and transitioned out of operation in the next decade if you want to keep us safe. And that's a chemical safety issue, in addition to the issue that the Torrance Refinery Action Alliance is so rightly bringing up.

But I want to say this: Exxon has no credibility in this city or in this country. We have learned that they have been lying about the truth about climate change since the '80s. They've been lying to their own shareholders. They've been lying to the public, and they've been lying to organizations like yours. And my great congressman, Ted Lieu, has asked the Justice Department for a RICO investigation of Exxon. And I think we've heard why—because these people don't tell the truth. They cut corners, and they do whatever they have to do to profit while they're wrecking our climate. So, I ask for your help in that, in addition to this one single, dangerous chemical. Thank you for your time.

Chair Sutherland: Thank you very much, Mr. Galliani. And next, Mohammed. We'll keep moving down. Um, Terry Beachmeyer?

Female 1: They seem to be gone, all of them.

Chair Sutherland: All four. And Henrietta? Okay. If you are here, and you're just walking slowly, raise your hand, and we will put you back into the queue. Next, uh, Steve Goldsmith?

Steve Goldsmith: Uh, good evening, and, uh, thank you so much for the work that you all do, uh, on our behalf. We really appreciate it. Um, I'm with the Torrance Refinery Action Alliance. I'm a long time resident of, uh, the city. And, uh, a former steel worker for 10 years in a steel mill. And just for context, uh, while I worked there in 10 years, 13 workers were killed. So as a member of the alliance, uh, we're as concerned about the workers in the front line there of any kind of, uh, dangerous event. And, while I was listening earlier this evening, uh, I was kind of, uh, you know, I went from the frightening scenario that we presented, and then the

assurances of ExxonMobil. And I thought, well, maybe we're overdoing it.

Um, you know, he said the HF is safe and that it's the only thing possible. And they're concerned about the safety of workers. And then when I heard, uh, the, um, AQMD listing the failures, the failures, the failures of ExxonMobil, I kind of woke back up again, and, um, wanted to say that, um, you know, on the thought that you brought up about the tank being hit by an 80,000 pound – well, those tanks have flanges. I mean, the evacuation is done through a pipe. Um, I'm not familiar with that particular thing because it's hard to see. But, uh, I – I think that tank could definitely, uh, be broken loose.

And we know that, uh, when these disasters happen, we don't think about what could possibly have happened and then until they happen and the catastrophic events. And so I was disturbed that the refinery representative did not – said they were going to make a few changes, whistles, and blow – you know, some more, uh, alerts and things like that. But no fundamental structural change about moving hydrofluoric acid away from, you know, if they don't want to change it, uh, we think it's got to go. It's definitely got to go. But – but no idea in their mind that they've got to, um, um, restructure that – that process.

Chair Sutherland: Valerie **Shea**?

Valerie Shea: Hi, good evening. My name is Valerie Shea. I'm a member of this community. And I also am employed by ExxonMobil at the Torrance Refinery. I've lived here for about 10 years, a little over 10 years, and I work in the environmental group. Um, a lot of these comments are addressed more also for the public, as well. Um, our company, um, has a very strict ethics policy. Um, on top of certifying every year that we understand this, we attend monthly meetings where this is reinforced. As someone who works in the environmental group, where my job deals with environmental compliance, transparency, honesty, and disclosure, it is paramount in my field.

And I'm sure that I speak for everyone in my group, um, but I'm able to go home every night and sleep. I'm proud to work for our company, for ExxonMobil. Um, and I'm proud to work for ExxonMobil where compliance is right up there along with safety.

And in order for me to do my job, uh, and be successful in what I do, um, I need to have a management team that supports me. Um, and I have that. This oil company, this refinery, is made up of individuals like you, like me, um, people who are fathers and mothers and family members. And, therefore, if we're not providing information, um, I trust, and I know that our refinery has very good reason.

And – and that the reason, um – and I don't believe that we are actively trying to hide something. Um, I've been in three other public, uh – oh, time is up. Okay. Can I just –

Chair Sutherland: Thank you, Ms. Shea. Next is Michelle **Livergood**.

Michelle Livergood: Uh, good afternoon or good evening. Um, my name is Michelle Livergood, and I currently live on Carmel End just west of the refinery. I've lived in Torrance for 44 years. So I am – and I was born here. Um, I also am a contractor, Fed Ex, I'm Mobil. Um, and I was their worst nightmare. I would call every time there was a noise, a flare. There was a bump in the road; I blamed ExxonMobil for it. So, I was their worst nightmare. Um, I – when I started at ExxonMobil, I quickly learned that safety was the No. 1 priority with these people. Um, it is a culture. We live by it every day. Um, my son also works there. He's an operator. He started in 2014.

He's an FCC operator, and he was on that day that the, um, FCC had the incident. And as a mom, I was very nervous. But, I knew that he was going to be okay because of the strict training procedures that they are – that they're taught when they get on there. So, I knew he was going to be okay. Um, our – we work every day to be safe and to make sure that our community is safe, that everybody goes home safely, and that everybody on the outside of those walls is safe. Um, if you look around, all of these people here, they all work there, and they all want to go home to their families, and they all want to be safe.

Um, I do enjoy working there, and they're good people. And we do work hard. Um, and I did have a whole thing to say. But I do want to say one thing, um, and it's kind of off-the-cuff. TRAA does not speak for me. And I don't think they speak for the entire City of Torrance. Um, and – I – I'd like to even say that if TRAA wants to be taken seriously, they need to make sure that their

members do not sit behind the speakers and flip them off as they are speaking. And sir,(turning to a member of the audience) you owe Mr. Abblett an apology.

Chairperson Sutherland: Next is Joe Benitez.

Joe Benitez: So, uh, yeah, my name is Joe Benitez. I just want to say thank you for allowing us to speak here tonight. Um, I've worked at the Torrance Refinery for the last almost 25 years. And I just want to say that, um, part of our culture – or a big part of our culture is Process Safety Management. And it's something that everybody tries to strive for. Um, we have a bunch of highly dedicated and talented people that work for us. And they're focused on safety. That's pretty much our safe environment, safe operations of our process. And so at the end of the day, when we do have an incident, it's highly scrutinized at the highest levels. But we do our level best to come up with solutions, to try and fix those problems.

So all I really wanted to close with is saying, um, we strive every day to prevent these process safety incidents. And, uh, we just want you to know that. It's not a slogan. It's a fact. Thank you.

Chairperson Sutherland: Next is Richie Cimento.

Richard Samento: Good evening. My name is Richard Cimento. I would like to thank you, Chair Sutherland, and the rest of the CSB Board for taking the time to listen to everyone tonight. In my few minutes to speak, I would like to let you know how I feel about living less than one mile from the Torrance Refinery. I moved here to Torrance in May of 2000 after graduating college in Boston. I lived on Torrance Boulevard, Arlington Avenue, and 235th Street, all in Torrance. I bought my first house across the street from the refinery on Ermanita Avenue in June of 2011. I'm married with two precious little girls, 6 and 3 1/2.

My wife is a native Torrance resident, born and raised in West Torrance. She is currently a teacher at one of the local high schools here in Torrance, also. About a year and a half after I moved to Torrance, I started working at the Torrance Refinery on September 12, 2001, to be exact. I came in shortly after the merger with Exxon and Mobil. In these 14 1/2 years of employment, if there is one thing that has always been a driving factor at the

refinery, it has been safety. From being a trainee in the FCC, to moving up through the operator ranks, and eventually moving into a management position, safety has been the first thing we think of before anything else.

From our daily morning safety meetings before every shift, to our LPS, Loss Prevention System, we have had a safety system in place at the refinery to remind us of the importance of running our refinery the safest way possible each and every day. Now, you may say I have a vested interest in getting up here to speak tonight because I work at the refinery. Well, you're right. I take this not only as an attack on the Torrance Refinery, but as a personal attack on myself. But there is also the other side of this, as an actual Torrance resident. Do you think if I seriously thought that the refinery was an unsafe place to work that I would first work there, or even better, put my family directly into this so-called "death zone?"

The answer is obviously an emphatic "no." Ultimately, this is mine and my family's choice to work at the Torrance Refinery and to live where we are. This choice is based on a belief, and a belief that what we do at the Torrance Refinery is done with the utmost safety in mind. Thank you.

Chairperson Sutherland: Next is Scott Livergood.

Scott Livergood: Ladies and gentlemen, uh, I stand in front of you guys today as a 24-year-old resident of Torrance. I was born and raised in this city. Um, I live two blocks from the north fence. Uh, there's probably only a handful of people that live closer to the refinery than I do. Um, I went to the school districts there. I feel that Exxon, as a, uh – as a neighbor, has always been careful in the way they handled situations, and has treated us, uh, with safety in mind always first. Um, and I'd also like to say that I am an employee of ExxonMobil now. Uh, I still live across the street. I still feel that it is safe.

I don't plan on moving. Um, and – and I think they're a great neighbor to the community. Uh, the more that I work there, the more that I learn how safe we can be and how safe we are. And I think that we strive for safety, uh, every day in and out. So, uh, that's really all I have to say.

Chairperson Sutherland: Thank you. Logan Bagney.

Logan Bagney: Good evening. My name is Logan Bagney, and I come here tonight as a Torrance resident to speak out in support of the Torrance Refinery. I was born in the City of Torrance and grew up less than one mile from the refinery. I have been a Torrance resident for 25 of the last 30 years. Currently live 1.5 miles from the refinery with my wife and 3 children. In 2005, I began working at the refinery, and, based on the knowledge I gained from my time there, and our commitment to safety, I felt comfortable moving my family so close to the refinery.

The loudest voices currently in opposition of the Torrance Refinery, like the TRAA, and a certain reporter for the *Daily Breeze* are not experts in petroleum refining or process safety. They are also not knowledgeable on the safety systems that are in place and the training programs we have. The safety systems in use at the Torrance Refinery are second to none. The training that every employee and all contracted workforce goes through is of the highest caliber. The recent statement that came out claiming the Torrance Refinery is more concerned with making a profit than they are with safety is an outright lie.

All employees – I'm sorry. Safety for all employees, and the contractors inside the gate and the surrounding community, is always the first priority. That knowledge is why I, like many other employees, choose to live in the community surrounding the Torrance Refinery. The TRAA is portraying itself as speaking for the residents of the South Bay. And as a resident of Torrance, I'm here to say they do not speak for me. The Torrance Refinery does a tremendous service to the community, the majority of which goes unnoticed. And for the first time, I'm asking the community to show their support for the Torrance Refinery. Thank you.

Chair Sutherland: Thank you. Next is Raphael Anguiano.

Raphael Anguiano: Good evening. My name is Raphael Anguiano. I've worked at the refinery now for almost 14 years. I'm one of 72 operators assigned to the coker unit. I'm one of 100 fire fighters that respond there on the Fire Brigade. I'm one of 12 hazmat technicians that respond at the refinery. I'm one of over 280 United Steel Workers

represented at the refinery. I'm one of over 700 ExxonMobil employees. The reason I want to highlight that for you guys is that we're not just a number. We're families. We're men and women. When our boots touch the ground in that refinery, we take every precaution necessary to ensure that every person, every man and woman that goes in there, comes out safely.

Now, I know it's difficult for the community to believe that, given what transpired in February. But that lapse has been rectified. We will not stop until we ensure that that does not happen again. Our commitment has not wavered. The resolve of the workforce has not changed. It does not matter if we're ExxonMobil, the easy target. It doesn't matter if we become PBF, or any other refiner. Our commitment is to be the safest refiner, not only in the South Bay, but in the entire United States. This workforce is dedicated and committed to ensuring that we refine safely, that we are good neighbors, that we are good to this community, that we have longstanding ties to the community as residents, as employees.

So, I just want to finalize by saying that I want to reiterate what Brian Abblet said: We are sorry that this happened, but this will not happen again. Thank you.

Chair Sutherland: Next is, uh, Tommy Gibson. And, uh, right after Tommy Gibson is Steve McSweeny, so I'll give the next person so you can be prepared.

Tommy Gibson: Good evening. Um, I thank you for the opportunity to speak. I stand before you tonight, first of all, as a husband, a father, and a grandfather, and second of all, an employee of Exxon. I've been there 25 years. I started off as an operator in the sulfur recovery unit—dirty, nasty job—but safety was our No.1 priority. And to this day, I can tell you, I've gone home every day the same way I've gotten to work—safe, and with all of my limbs and all of my members uninjured. And I hold that strategy and that – that goal for everyone that works for me. I was recently appointed a superintendent.

I work on a shift. And everyone who works on my shift is held to that standard that Exxon holds me to. We have policies and procedures that are based on PSM, based on CalOSHA regulations, federal OSHA regulations, and EPA. Those procedures are followed. And if they're not followed, there's a deviation process.

And, I'll tell you right now, the gentleman right there said that we kind of feel uncomfortable not shutting stuff down, or not starting stuff up. I'll tell you right now, with the management I have in this room, and my refinery manager, I have 100 percent of their support. If I don't feel it's safe, we will not start it up.

Chair Sutherland: And after Mr. McSweeny is Martin Rocha. Thank you. I apologize for butchering anyone's name. Correct me. Mr. McSweeny?

Mr. McSweeny: Yes, hello. My name is Steve McSweeny. And I'm, uh, an FCC head operator at the unit where we had the, uh – the event. I'm also – I worked in the HF and the MHF unit for five years before that. Um, I want to bring up that, uh, in the old Mobil days, maybe we didn't have such a good safety culture. Today, in the Exxon days, we do. We work well with our management. And every worker out there, even the lowest contractor, has the authority to stop any job he feels is unsafe. And everyone will back him up on that. That happens all the time.

Uh, another thing I wanted to bring up: I saw, like, in the news media, they were coming up with this thing like we were covering something up. Well, I've – I've personally escorted the, uh, CSB, OSHA, and [others] around. I was interviewed by all the – all the men that are right here. And at no time were we ever told to hold anything back, to cover anything up. We were – we were always available whenever you called us. We would come, and, um, we showed you everywhere you wanted to go. We didn't – we didn't restrict any – anything of anywhere to go. And, uh, that's all I'm going to say. Thank you.

Chair Sutherland: After, uh, Mr. Rocha, we have, uh, Rick McCarter, and then Brian, uh – Brian, you wrote in cursive, and if your name is Brian, and you wrote your last name in cursive, is it Miller?

Brian Miller: Miller.

Chair Sutherland: Thank you. Miller, okay. Mr. Rocha?

Mr. Rocha: Okay. Thank you. Uh, first off, thank you for your time. And, um, second of all, I wanted to say that I've been working in this, uh, Torrance Refinery for about eight – eight years. Um, half of the time – well, most of the time – has been as a contractor. And, as a contractor, I could really say that they follow – ExxonMobil

follows all of their rules and procedures to the key. Even as a contractor, we have to follow their rules and regulations, and even go above and beyond to make sure that we follow those regulations.

Now, as a newly hired employee [at] ExxonMobil, I can tell you that we really do go and take extensive training and make sure that we follow even more policies, procedures, and regulations. You know, I believe that we're all instilled with safety in our heads and in our mind. You know, we don't cross the street without looking both ways. And, I'll tell you this, if I didn't feel safe walking into that refinery, I wouldn't work there. I would go back to the depot where I was working at before, where I'd feel safe and comfortable. I still feel safe where I'm at at the refinery. It hasn't changed.

I believe it's safe; like, there's nothing else. And that's where I stand. Thank you.

Mr. McCarter: Distinguished Members, my name is Rick McCarter. I'm a resident of Torrance. I attended grade school in Torrance at [Walteria?] Elementary, then high school in South Torrance as a South High Spartan. All three of my children attended, and still do attend Torrance Unified. My youngest, Margo, currently a sophomore at South High School. My son, David, is working through his EMT qualifications at Torrance **[inaudible]**. And my oldest daughter, Tess, [is] employed with the Torrance Memorial Hospital group as a healthcare provider. My father, Jack McCarter, worked with the Torrance Fire Department for 37 years, his last 18 years as a Battalion Chief stationed here at the main firehouse on Crenshaw Boulevard in Torrance. In the late 1950's, my dad worked for the Standard Oil Company in Chicago. Then, in about '63, he moved our family from Chicago to Torrance, California, after getting employment as a process operator in the El Segundo Chevron plant, and then later hired in with the Torrance Fire Department. Currently, I am an active, 27-plus year vet of the ExxonMobil Torrance Refinery, employed here since hiring with Mobil Oil Company in 1988 as a process technician.

Twenty-six of those years as an NFPA 1081-qualified emergency responder trained in all facets of the incident command system: hazardous material emergency response; hydro chemical fire suppression; and release control. Retired last year as a fire

suppression company Shift Lieutenant officer. My father, having a good baseline understanding of the oil industry from his early oil refinery experience, and then by responding to refinery emergencies as a Torrance municipal fire fighter and battalion chief, would have encouraged me to stay clear of such career choices, had he considered the work recklessly unsafe. Of course, there are hazards in this industry.

And to this, he had much advice for me. However, he always praised Mobil Oil for their ability to operate responsibly in an industry that is very dynamic in nature, where hazards may be expected and should be prepared for. These standards have not wavered over the years. Our safety programs are more stringent, followed, and audited regularly. Ask any contractor working with us, and they will tell you how ExxonMobil's safety policies and procedures differ extremely from other refinery site safety policies that are less stringent in safety. To this day, our Torrance Refinery Fire Brigade continue to train, over-exceeding the minimal training required to remain functional.

We have in the past, and hope to continue, to train and work closely with TFD. I believe we have proven to be a community – to – to the community that we have taken our emergency response business very seriously, quickly to respond to refinery incidents, halting and minimizing hazardous exposures to our community.

Chair Sutherland: After Mr. Miller will be Mike Bullock and Kurt Laurence.

Mr. Miller: Hi. My name is Brian Miller. I'm a 20-year employee at ExxonMobil. Um, I've been living in the community for 22 or 23 years. Uh, we start every day, every shift with a safety meeting, and we spend the whole rest of the shift either talking about safety, or being out in the unit monitoring things. If something is not to my liking, if I need to shut down a pump, I shut down a pump. If I need to shut down a process, I shut down a process. Nobody from the management side will tell me how to do my job. I'm very good at my job. And – and I – I hear all of these comments from these other people and the newspapers and whatever.

I don't know what place they're talking about. That's not the place I work. I work in a safe refinery. I have safe co-workers. I have safe management. And that's all I've got to say.

Mr. Bullock: Good evening. Um, it seems to me that this, uh, meeting has been – on the incident at the Torrance Refinery, has been hijacked and politicized by a small, but well-organized and vocal, group bent on stopping the use of HF acid at the site because they deem it unsafe. Included in this group is one yellow journalist, if you can call him a journalist at all, yes, Nick Green, I'm talking about you, placing fiction over fact, and writing opinion pieces using inflammatory language instead of presenting the facts. These man-with-an-agenda opinion pieces are still very apparent to the few intelligent people that are left reading the "*Daily Sleaze*." And it's just red meat for your small group right here.

One thing for all of you to keep in mind is, most, if not all, of this small group, has never worked in an alkylation unit, so they do not know the multiple upon multiple layers of safety barriers that are in place to prevent modified HF acid from ever leaving the site. Because of that, I'm sure the lack in knowledge creates fear. If the goal of the CSB is to listen to fear and influence other regulatory agencies to regulate HF acid out of existence in the refining industry, you'll most likely invoke what I call "the law of unintended consequences," which could be the closure of the Torrance Refinery.

Now, maybe this is your intent. But if it's not, don't be so naïve to think it couldn't happen. According to the EPA, on their website, they state that since 1990, 72 refineries have been shut down in this country. In what's known as PAT 5, that's the west coast area, 19 refineries have been shut down since 1990. This is due to not being economically viable. And that's what could happen to the Torrance Refinery, should they not be able to use modified HF acid in the refining process. Think of your car. As it starts getting older, you expect the repair costs to go up, but there comes a time when the costs are past the value of the vehicle, and it's off to the scrap heap.

That's where the Torrance Refinery could be if they're no longer able to use modified HF acid in the process. The cost to reconfigure the refinery to use sulfuric acid could be greater than the refinery itself. For an investor, there comes a point in time when the return on your capital you have to invest is so low, it's not worth doing because you get a greater return on your dollars elsewhere. Hence, the 72 closed refineries the EPA lists. Now, um, Miss Walters, Representative Mr. Lieu–

Chair Sutherland: Mr. Bullock, uh, your time is up. Thank you. Mr. Laurence, before you start, uh, I'll just reiterate that in addition to the two minute, um, time commitment that we've asked everyone to adhere to, we held this meeting so that the CSB can gain valuable information about its ongoing investigation. So I'm going to ask that, for all of the subsequent speakers, we remember that everyone here has an opinion and everyone is valuable. So, no commentary about people's professions, or their, um, personalities because we're trying to gather information in a – in a very open way. And we want everyone to feel comfortable in coming up. Mr. Laurence.

Male 2: I have a question. I'm sorry, but when we were signing up to speak, there were several lists, side by side. And it sounds like you're going down through one list to the end.

Chair Sutherland: There are 10 lists. And the first one has page 1, and you're right, I'm going down the list because there's no other equitable way, unless we have a – a measure of doing it.

Male 2: Well, if there are two lists, we could pick one from one list, one from another –

**[Crosstalk]**

Chair Sutherland: Sir, I'm going to – we have Mr. Laurence at – at the line now.

Male 2: You're closing at 10:00 –

Chair Sutherland: We will be here until – until we get the public comments done. But to go – there's no way for the Board to know who is – who – who we're picking from. We're going through this in an equitable fashion. And that's how the – the numbers are. So Mr. Laurence, could you please continue?

Mr. Laurence: I appreciate that. You actually did a good lead in. Um, you probably recognize my name, Kurt Laurence. Uh, I'm the guy that's in hiding, uh, that came out in a letter to politicians that are actually here tonight, uh, claiming that the company hid me in an office, uh, told me not to disclose anything to – to our investigators. Uh, it went as far as saying that I was, uh – uh, that I should get some protection, so I could tell the truth. . .that I could be charged, uh, criminal charges. . .and I don't appreciate that,

right? So we – we did a rebuttal. It went back to the paper. They – they mentioned that ExxonMobil did it, but I'm still waiting for any kind of, uh, retraction letter, or something saying that, yes, I did indeed meet with each and every investigator in this deal.

And I've been made available the whole time. Um, the reason why I really want to mention this is, and you've heard this several times, is, don't believe everything you're hearing, because I'm going to tell you, listening tonight, um, reading newspaper articles, there's a – a lot of information that's actually not being put out there. ,There's the people don't know what they're talking about, in other words. Um, obviously, I've worked at the refinery for over 35 years now. I worked as an operator in both of those areas. I was, uh, promoted to the unit supervisor of, guess what unit, the alky, in 1997 when we implemented it, uh, MHF. And I can tell you that it does work.

Um, what I can say, too, is these groups really need to get a lot more information before they start speaking on what they're talking about so they're giving you the right information, because I, too, live in Torrance for a long time and am raising a family. If I – if I have all of this knowledge and all of this experience, why the hell would I put my family here?

Chair Sutherland: Mr. Laurence, your time is up. Next is Audrey **Connett**? And then after that is **Donna Duperron**? Not here. Okay. Great. **[Inaudible] [01:44:14]**. Thank you.

Audrey Connett: Hi, my name is Audrey Connett. Um, my family and I live here in the community. My children attended West Torrance Elementary School. Um, we only live a few miles from the refinery. And I never lose sleep in fear that something is going to happen. Um, it's a perfectly safe environment. Um, I'd like to make one major, uh, comment about the TRAA. Um, they do not represent me. They do not represent a lot of people in the area. And I think it's misleading that they come here and project that they do. Um, the speaker for the TRAA has, uh, a clear agenda for eliminating fossil fuels, and she would, and the group would, like to see the Torrance Refinery shut down.

I'd like to bring to light the economic impact that that would have on the City of Torrance. Um, this is a great place to live. The refinery has people driving by daily—um, thousands of people

driving by. You don't see them going a different way around so that they don't have to be near the refinery. Um, I don't think it's an issue. I wouldn't have my family living here if I thought it was an issue. Also, um, the Representatives—uh, I live in a district where Ted Lieu, uh, is my representative. And I think he needs to look into the facts and know his facts. I just don't think he's doing a good job of representing the people. Uh, I don't want him representing TRAA. Thank you.

Chair Sutherland: Gary Hodges, if you also can prepare to speak next. . .And then F. Caselli after Mr. Hodges.

Donna Dubron: Hello, my name is Donna Dubron, president and CEO of the Torrance Area Chamber of Commerce. I appreciate the concern shown by the Board and Torrance Congressional Representatives to ensure the safety of Torrance residents. I am not here, though, to address arcane technical refinery processes, but rather, I am here to provide a reminder that ExxonMobil has been an invaluable community partner whose corporate character, competence, and community involvement have been outstanding for over half a century. The character of ExxonMobil is a reflection of the goal of the best neighbor it can be.

And to this commitment, the refinery has dedicated over 4,700 hours of service to over 53 nonprofit organizations this past year. ExxonMobil's competency to refine oil safely has helped the City of Torrance grow into the economically diverse city it is today. I have had the opportunity to meet some of the scientific and engineering experts employed by ExxonMobil, and they are extraordinary. During its longstanding membership with the Torrance Chamber, ExxonMobil's community involvement has helped other businesses thrive, supported local nonprofits, enabled teacher development, and enhanced classroom experiences for students.

I hope the community does not turn its back on such a long-time partner without all of the facts brought forth and all sides appropriately assessed for credibility. ExxonMobil generates good pay and much needed jobs in the Torrance community. Whatever the solution to the problems discussed today entails, the key focus needs to be get ExxonMobil back online safely so it can continue to provide the energy, jobs, and partnerships needed by our community.

Mr. Hodges: Good evening. Hello. I'm here for twofold: 1) I was born and raised in Torrance, as was my wife, and I'm also an ExxonMobil employee for 37 years, 28 years in process, the balance in mechanical. Twenty years is my experience in the FCC and alkylation units. I feel safer in the alkylation unit than I feel on the freeways. The – the reason I'm here is my grandfather worked there in the '40s and retired in 1980 from Mobil. I started in 1979. My wife started in 1980. I have a daughter that's worked there for 10 years. I have a first cousin that works there. And I have a brother-in-law that works there.

If I thought the place was unsafe, and I'm a family person, I would not work there, or let them work there. As – as my daughter went to work, I would never ask her to be safe at work. I'd tell her to be safe on the roads. That's all I have to say.

Chair Sutherland: Thank you. So, we have Caselli, the first initial is just abbreviated; Mary Ann, is that McFarland or McFadden? [Going once] for Caselli. Okay. Mary Ann McFarland? Yes.

Mary Ann McFarland: I am also a long term resident of the City of Torrance. And I'm also a member of the Torrance Refinery Action Alliance. First of all, I want to thank all of you, uh, Representative Ted Lieu, Cal OSHA, EPA, the AQMD for their hard work and – and dedication to getting at the truth. We live in a different world than we used to. Um, when I grew up, there were no – there – terrorist threats, and life was a lot simpler. Now, we're faced with some realities that are troubling to say the least. We have in our midst not one, but two refineries that house one of the world's most dangerous chemicals.

We have – we also have a municipal airport a few miles down the road that gives flying lessons. Now, if you connect the dots, you have a perfect recipe – recipe for a cataclysm beyond our comprehension. How can we argue that point? Hydrofluoric acid should be banned from our refineries and replaced with a safer alternative. It will not – it will not only protect the workers who are the first ones to be affected, uh, by any release, but the communities in a 10-mile radius of these hazards. Thank you.

Chair Sutherland: Thank you. Next is Art Kroger? Art, are you here? Okay. If not, is Jeff Fitt here? After Jeff Fitt will be Sam Hepner. . .Hepner. Are you Mr. Fitt?

Mr. Fitt: Yes, I am.

Chair Sutherland: Thank you.

Mr. Fitt: I'd like to take the opportunity to have a few minutes with – for the board. My name is Jeff Fitt. I am the alkylation technology sponsor for ExxonMobil. I have specialized in the technology for over 35 years, and I've supported Torrance Refinery for the last 18 years. I am a member of the API Committee on the Safe Operation of HF units. I participated in the last four revisions to that document. That document is used worldwide. I'd like to talk about a few points mentioned tonight. The first is that MHF is not viable. And the second, uh, concerns the barrier technology as not being tested.

The research work completed by Mobil in the early '90s involved extensive testing of the additive at various concentrations, as well as pure hydrogen fluoride for both storage and unit conditions. The work involved release testing of these mixtures in three key campaigns. It started at the Palsborough Labs and migrated to Park Laboratories in Pittsburgh, and finally, large scale release testing was done in Norman, Oklahoma. During these campaigns the effectiveness of the additive at different levels was proven. The work determined the chemical interaction of the additive, reduced the vapor pressure of the mixture, as well as other physical properties of the additive mixture.

In doing so, the mixture from the jet release did not form the small droplets, aerosols, as seen in the earlier release tests, but formed larger droplets that increased the rate out of the HF. Large droplets fall to the ground allowing the remaining cloud to heat up, and to break down the dimers and trimers that the HF forms. Once it forms the monomer, it becomes lighter and [will] lift off. The barriers came from the testing. The closer –

Chair Sutherland: Mr. Fitt, your time is up.

Mr. Fitt: Okay.

Sam Hepner: Good evening, ladies and gentlemen. My name is Sam Hepner. I am an ExxonMobil employee of, uh, 35 years. I've had many hats in the plant. Um, FCC unit and alkylation unit, HF unit, and MHF unit. Uh, I was a young child, uh, a young kid, 18 years old, working the HF unit, and at that time, uh, we had safety procedures in place. I've got to say today's day and age, in, uh, 2016: 1,000 times safer. My guys, uh – I'm the shift – the shift team leader. My guys are in the unit inspecting the flanges, painted flanges. They are following procedures. They conduct simulations.

And Mr. Fitt who was just speaking, I've had the privilege of writing a water mitigation procedure with him to cover the worst case scenario in event of a leak. So, no doubt in my mind, like my other family member, Gary, it's – it's more dangerous to drive on the freeway. Now, also, my kids attend Torrance schools as well. And, uh, the day of the incident, they did call and – and they were concerned. They said, "Dad, I had to shelter in place." And I told them, – I told them: "Sons, you guys are okay—not a problem. We're under control; we have good people at the plant taking care of it."

And that's exactly what we're doing. Now, when I look at this, we have the opportunity to, uh, work together. And that's what I want to talk about. Incidents happen, uh, as far as indicators to a big event. But I would ask everybody to work together to identify the causes, and we will work with you to make a safer place.

Chair Sutherland: Thank you. Is Janet Gunter still present? Janet Gunter? Kathleen Woodfield after Ms. Gunter. And after Ms. Woodfield will be, it looks like Will Brown?

Ms. Gunter: Uh, hello. Um, thank you for being here. I appreciate you – the CSB in a major way. I think you guys do a great job. And I would hate to live with the frustration that you must feel when you investigate these tragedies and find the answers and then have to try to get regulators and – and public officials to embrace these changes that will prevent these catastrophes from happening in the first place. Um, I'm from San Pedro. I represent, um – we're representing today a homeowners' group there that has been, um, fighting for many, many years a highly explosive, 25 million-gallon butane and propane gas storage facility.

This facility is opened by – it's owned and operated by Planes All American Pipeline under the name Rancho LPG. In, uh, the late '70s, the Mobil refinery had a small butane leak that escaped its tanks and killed three people, one of which was a young girl at a stoplight. When she started her Volkswagen up, it hit a spark, and the vapor cloud that had gone under her car exploded, and she was killed. This is the kind of stuff we are worried about. This is a massive facility. I went to a – a meeting with, uh **Cal ARPS** and, uh, Mr. Penn the other day.

And in our discussions, I was talking about the fact that you have Porter Ranch—a big disaster there. And you – you've got the government now looking at methane gas and natural gas because of that catastrophe. So, you've also got the catastrophe that just happened at Richmond, and that – and the one here in Torrance. So now, you have the laws looking at the, uh, refineries. All right? So I said to him, "Why are you not expanding? You know everyone knows that this gas is highly explosive and that it's sitting on an earthquake fault of 7.3 magnitude and 5.5, uh, sub – sub-standard tanks built 43 years ago.

This is a no brainer. You know. Why don't you want to be on the front end of looking at all of this and making sure that you're ensuring public safety?" And he said, "Well, you haven't had an explosion at the facility yet." Thank you.

Kathleen Woodfield: Hi, thank you so much for being here, and for having, um, public comment, and two minutes, which is a lot considering how many people want to speak. Um, I'm very pleased that you exist. Um, I'm – I'm also from San Pedro. However, I – I own, uh, jointly, a home right near the, um, facility here in Torrance. Um, I do believe that you can have a diligent, um, dedicated, uh, workforce, and still have, um, issues of safety, um, especially in these kinds of volatile industries, um, which, in my opinion, need more regulation, not less. And I – I – and I am a strong believer in regulation.

And we have found that there tends to be an arrogance in the industry, uh, on the high level, um, that, uh, when – when there's an opportunity for regulation, they have the – they have the ability, they have the money, uh, they have the wherewithal to, uh, work against real diligent regulations. And if regulations get in place, [they] work quickly to undermine them. And, uh, so, I would ask

for you to, um, be as strong as possible on behalf of the communities at large and their safeties and all of the things that we're exposed to. We have aging infrastructure; uh, we have climate change that is getting more dramatic.

And – and those two, uh, factors together, um, create more opportunities for events, catastrophic events. And also, we – we do have terrorism, which is something that didn't use to be the case. I – I have great faith that you're working carefully and respectfully and – and trying to compile the information as necessary. So I don't doubt that. I also truly believe that labor, people who are working there, feel very strongly that they're doing their very best and – and doing very good jobs. I don't think that regulation should be taken personally on a personal level, that if you work for an industry that needs regulation that means you're not doing your job.

Chair Sutherland: Thank you. William Brown. And after Mr. Brown, is Ron Conroe, and then Trent Parkinson. And I wanted to, uh, make a comment as, um – before Mr. Brown speaks, that if there are any additional comments that you want to make after the two minutes, um, (because unlike Ms. Woodfield, not everyone thinks two minutes is a long time, um) we will receive comments afterward if you want to send them in to our website, or by, uh, writing. We certainly, um, um – we are amenable to receiving subsequent comments as follow-up to responses to something that you hear tonight. So with that, Mr. Brown.

Mr. Brown: Uh, how do you do? It's really a pleasure to be here. I – I hear enormous amounts of information, uh, that's directly connected to a potential threat from the refinery. It has – I've been in the South Bay my entire life. I'm a retired member of the Plumbing Piping and Industry in the LA area. I've worked on refineries [waves to the audience]. All of you guys. I've worked on refineries; I've worked on, um, all manner of construction. And I'm familiar with a lot of the safety concerns that – that impact our industry. There's almost nothing you can do to keep, a, hazardous safety event from happening, especially in a – in a refinery location.

My personal, um, advocacy has to do with environmental stuff, both local and internationally. And, what I see is a preponderance of – of, uh, uh, environmental hazards that are just literally destroying our environment, even on a local level. So, what I'm

referring to is, my specific interests on the hydrofluoric acid content of the processing for the plant. I was astonished to hear two pieces of information in these proceedings today. One of them was, I could not hear from anybody, including Brian Abblett, who I asked personally, what was the content of the mitigation of the hydrofluoric acid in the processing for this refinery process?

And he says, "Well, I'm not going to tell you. It's – it's privileged information. It's proprietary information." And I'm thinking they made an agreement to have that process mitigated by 30 percent. So, other information I've heard is kind of indicating that it's less than 10 percent, which means, it's of no use at all whatever they're putting in there. So now, that means that if there ever is a hazard where the MF gets released into the environment – whoa, time is up. Thank you very much. Those were my dominant concerns. And having been in the industry myself with all of you guys –

Chair Sutherland: Next is Mr. Conroe, and after, uh, Mr. Parkinson, we will have Joan Davidson.

Mr. Conroe: I want to thank, uh, the Chemical Safety Board for being here. Uh, I want to acknowledge the people here from the Torrance Refinery that work in a very difficult situation. My name is Ron Conroe. I'm the Western District Manager for Planes LPG, uh, the facility down in San Pedro that these two ladies, uh, just spoke about that we're this dangerous facility. Uh, we've not had an offsite incident or release in the 43-year operating history of that facility. We've been audited, because mostly because of activism in the neighborhood, since 2010, 58 times by every local, state, and federal agency out there.

I've got a report here. I will get it to you in the mail with reports from these agencies. The EPA, in fact, the Region 9 attorney, in fact, has calculated our worst case scenario. They have this letter via FOIA, and I'll make sure you get it. Uh, you know, I hate to take up the people's time here. But, you know, I knew that these folks, they come around, and every chance they get to bash this facility. They've gone to the – the – the point of, uh, making videos about the facility with, uh – in the crosshairs of a sniper rifle. That's a fact.

Uh, they have also, uh – our union representative that, uh, represents our local workers there, uh, has issued letters to the

local congressman, uh, about, uh, signs, uh – our employees, equating them with ISIS, yeah, yeah. [female voice shouts from the audience, "That's not true!"] Look at the video, not the pictures. And then if – if you want to see what they had to say, uh, on 3/6/2015 about the Exxon, when the first senate hearing was here, and this is a quote, you can read it three hours and eighteen minutes into the video. When this explosion first happened, I was actually joyful for a moment –

Chair Sutherland: Mr. Conroe, time is up. Thank you. After Mr. Parkinson, no? Uh, are you Joan Davidson? Okay, Ms. Davidson, please come up. After Joan Davidson is, uh, Shridar Adanki.

Joan Davidson: Hello. I am a past president of the Palos Verdes Peninsula Unified School Board, a California teacher. I've spent eight years on the Sierra Club Angeles Chapter Executive Committee, and I could go on. I'm deeply concerned about the safety of the ExxonMobil plant to this community. I hold in my hand what I found online, which is 20 releases just for this year, the last 12 months, in this plant, besides the one last February. You need to go online and find these releases. Over 200 since the year 2007, when the, uh, Governor's Office of Emergency Services started reporting this. Facts are facts.

The releases represent an immediate danger, but also long-term health effects. What chemicals are released from this plant daily? What are the toxic levels to the children at the local schools? And, I can tell you as a Torrance teacher, sheltering in place, not knowing what was going on, is not fun. What chemicals and substances are being released, um, daily? What are the levels of the substances? What is formed in the combustion? Because there are different chemicals that are formed. I also know a lot about the environment, and, as they enter the atmosphere, what are those chemicals?

What are the cumulative effects of these releases to the human health risk assessments? This is a private enterprise, and the public will not stand by while this airborne- and water-released plume continues to this community. On the, um, February 18 event, according to, and I'm not sure if I'm pronouncing this right, Jessina Paras, [of] ExxonMobil Public Governmental Affairs, said the materials sent out for testing were primarily composed of some metal, oxides, and amorphous silica. Amorphous silica is, um –

there is none that is not contaminated with crystalline silica. Why is this a huge issue?

Because it has long-term effects for the children and every single person in this community. The health affects the particulate matter that this forms in surrounding neighborhoods gets deep inside your lungs and is there forever. That's white lung disease, I guess you'd call it, or, uh, lung cancer later on. According to the Air Resources Board, this particulate matter easily penetrates your airways–

Chair Sutherland: Ms. Davidson, your time is up.

Ms. Davidson: Well, I would like to demand that you do daily air testing at the site to save this community. Thank you.

Chair Sutherland: Is Shridar Adanki still here? No? **Benergeesh Kalivali**? No? **Chandra Venu**? Haider **Ali Shah**? Brian Fox? Haider Ali Shah? Brian Fox? And **Prasad** Shankropalta. And… Can you introduce yourself?

Brian Fox: Hi. My name is Brian Fox. I'm a Torrance resident and the area manager for Brenderson responsible for our company's refinery field services. Uh, I'm honored to be joined tonight by so many of my colleagues and co-workers who work in the refinery every day. Brenderson, uh, has a continued – has continuously provided maintenance and construction services at the Torrance Refinery since 2003. And safety has always been a core value in the refinery for both Brenderson and ExxonMobil. Last year, Brenderson employees at the ExxonMobil Torrance Refinery celebrated 3 million hours worked without an OSHA recordable injury.

Um, that's an average of more than 100 employees working every day for over 11 years without a single serious injury. This is truly an outstanding achievement that can only be accomplished in a refinery through – in a refinery through an exceptionally strong safety culture. I've worked in this business for years as a contractor. My career has taken me to dozens of refineries and chemical plants. I can tell you from personal experience that the safety culture of the employees and management at ExxonMobil Torrance Refinery is – is exceptional. ExxonMobil's care and concern for the safety of all employees, contractors, and the community is unparalleled.

The millions of safe work hours of our employees and their refinery over so many years validates our jointly-managed safety programs. Thank you.

Chair Sutherland: Okay. We have Alex, and I think it may be "Brisdo"? D-A-R…O? W?...

Alex Bidare: It's probably Alex Bidare, B-I-D-A-R-E. As it's, uh, obviously, I'm not a native of, uh – of this country. And 100 years ago when I started this, uh, type of job in, uh, my native Romania, we didn't have these safeguards in place, uh, for workers, or for community. This is probably why I'm here today, because of two reasons: the – the safety culture that, uh, uh, was non-existent, and, uh, the economic, uh, downfall that, uh, followed that. Those are the, um, you know, unacceptable practices. So, um, I consider myself – I'm not a resident of the area. But I definitely, um, appreciate the way the people accommodate me here at, uh – at the refinery.

Um, because it is definitely one of the best places to work for, and one of the safest places to work for. Thank you.

Chair Sutherland: Thank you. Janet West, are you still here? And after Ms. West will be Arthur Shoper, and then George Nicano.

Ms. West: My name is Janet West. Um, I – because of the presence of dangerous chemicals and the two mile kill zone, I question the security at Exxon Refinery. We have open borders. We just had a potential terrorist arrested in Sacramento. We have, uh – there have been, uh, recent news stories about potential terrorists captured at the border. How many have gotten through? FBI Director Comey says there are multiple open investigations in all 50 states. Representative Lieu and Representative Waters have done nothing to secure the border and protect our citizens and our communities.

The state of California has outlawed the use of eVerify when hiring employees. So, I question whether Exxon employees have all undergone background checks. I question whether the security of the refinery is adequate to protect from unauthorized personnel getting inside the refinery. Thank you.

Chair Sutherland: Thank you, Ms. West. After Mr. Shoper, Mr. Nicano, uh, then Joe Carson.

Mr. Shopper: Wonderful. Good evening. My name is Arthur Shopper [phonetic]. I was born in this city, the balance city. I was raised in – I was raised here, and I went to Torrance schools. And, uh, first of all, I think it's shameful and disgraceful that an activist claims that ExxonMobil is akin to a Mafia don. I find that very offensive, shameful, and disgraceful. These head pieces are mere propaganda. Two-mile radius of death. Excuse me, nobody died. I have lived in this city for a long time. I wake up every day feeling safe and sound. If there is a radius, it's a radius of stupidity around the TRAA because they're making up facts, they're lying and full of nonsense.

Chair Sutherland: Mr. Shoper –

Mr. Shopper: Shopper—I know my writing is not perfect. But, the point is, Ted Lieu [to Chair Sutherland] Excuse me, you're taking my time away. So, Ted Lieu has been missing in action on many issues, including the immigration issue.

Chair Sutherland: Mr. Shopper, be respectful, please.

I have been to – I have been to his office. He doesn't answer my queries. If you want to talk about respect, these people have to stop lying. As far as I'm concerned, this climate change nonsense is absurd. This is a crisis people are trying to exploit to shut down this refinery. You've heard it even from Maxine Waters herself. It is disgraceful, and it's wrong. There wouldn't be a city without that refinery.

I feel safe in this town, and I find it disgraceful and wrong. They claim to be the Torrance Alliance? They don't represent me as much as any other person has said here. I wish Congressman Waters were here, but apparently, she couldn't bother to show up, because I would say right to her face: "I think the EPA can go straight to hell." I think it's disgraceful that we have government boards trying to dictate and lecture fine professionals who know how to do their jobs better than most Congressmen do. And I would go one step further and say, not only that, we – we have got to stop allowing people to politicize this, Okay?

We have every right to allow this station to be there. We have every right to trust the people who are working there. And speaking the truth, if that's a micro–aggression, so be it. If people call that political, so be it. Shame on the TRAA, and shame on anybody who wants to diminish that agency. Thank you very much.

Chair Sutherland: Is Mr. Nicano still present? If not, is Mr. Carson here?

Mr. Carson: Mr. Carson is here.

Chair Sutherland: After you, Mr. Carson, will be Jimmy Gal, and, Jim, I can't tell if that's a "D" – uh, "Kendig" or "Kenlig." Kendig—it's a "D". OK.

Mr. Carson: Good evening. Given the, uh, time, I will do my best to be brief. Um, I am a member of the South Bay community, and I'm also an employee at ExxonMobil. Um, I've been working at the refinery for over 26 years. I started off as a southern – as a, uh, summer intern. I, uh, grew up in Northern California. My wife works, um, on Crenshaw Boulevard near Dalomo [phonetic]. She's been working there for over 10 years. My son goes to school with [Jared's] children over at Jefferson Elementary School up near Flagler and 190th Streets. We're very invested in the community. I think all of us had the same common goal this evening.

We're talking about safety and safety of the community. I can tell you right now that I am 100 percent committed to safety at the refinery. My team members are 100 percent committed to safety. And our No. 1 priority, as Brian Abblett and many others have said, is the safety of the community. That is our primary focus. Some of my team members talk about our LPS safety system. And that's something where it's kind of engrained in your mind. When I wake up in the morning until I come to work until I go to bed at night, 24/7 thinking about: What's the worst thing that can happen, and what's my mitigation, and how effective are my layers of protection?

And that starts when I'm at the job, when I'm driving to work on 190th Street in the morning. And if you've driven on that street, you know what I'm talking about. When I'm taking the Scouts on a hike in the Santa Monica Mountains, when I'm leading a volunteer group in Madrona Marsh, when we're supporting the US

Vets with United Way: It's very much ingrained that we need to make sure that we're committed to safety and that is our primary focus. Thank you for your time.

Chair Sutherland: Thank you, Mr. Carson. Uh, next is Jimmy Gal, and then Jim Kendig.

Jimmy Gal: Hello, Jimmy Gal, Torrance native. Thank you all for being here. I appreciate everything that you're doing to look into this issue. Um, I appreciate the workers being here. And I appreciate the TRAA being here. Uh, safety seems to be something that's being brought up a lot. And I think that that's important to look at. I'm pretty sure that, while Joe is correct about climate change, no one is going to be pulling the plug on the refinery any time soon. So, short of that, what we do owe the community is that we look into ways of making the refinery as safe as possible. It seems that if you look at the, uh, MHF, it just doesn't seem like it's as safe as any other possibility of other things that could be used, sulfuric or other possibilities that could be used.

Um, I'm sure that the workers didn't wake up on February 18 thinking that there was going to be an explosion, but there was. You never know about the thing that's going to happen as a tragic event until after it happens. The workers at Three Mile Island probably thought that they worked at the safest plant in the country, until one day in 1979, when they didn't. Jim Brady, Ronald Regan's Press Secretary, believed in Regan's policies, especially about gun control, until one day in 1981 when he didn't. So, you never know until after it happens.

And I would hate to see us all sitting here in a post-mortem meeting like this, where we're thinking about what went wrong when we have an opportunity now to make sure that we can do something about not having a tragic event happen.

Chair Sutherland: Thank you, Mr. Gal. Mr. Kendig? And after Mr. Kendig, if I could ask, uh, David Campbell to also queue up, and then Mike Smith, and then Ron Espinoza.

Mr. Kendig: How are you doing? Jim Kendig. Uh, my dad took a transfer for Superior Oil in 1968, moved us to this great town of Torrance. I've lived here ever since. He wouldn't have moved us here next to this refinery if he didn't think it wasn't safe. I've raised my

family now here. Uh, my wife works at the refinery also. Uh, I've been there since 1992. Um, the question about HF acid, uh, we've been running HF acid for many years—very safe. The – the hourly employees there, or the union employees there, are committed to safety. Nobody believes in safety more than us. Trust me, I'm an hourly employee.

Nobody, anybody, public, anybody, we – we live safety every day. So that's our top priority. Thank you, CSB, for all your facts. We appreciate it. Mr. Abblett, thank you for all of your facts, too. We've also listened to a lot of "what–ifs." Trust me, the alky unit can run safely. It has for many years, and it will continue. Thank you.

Mr. Campbell: Good evening. My name is David Campbell, and I am a local union official for the, uh, workers at ExxonMobil. Uh, unless I was drunk, I never wrote anything about ISIS. Um, so I don't know where all of that came from. But, uh, I wear two hats. Um, I've been to funerals of workers who have been killed on the job. And I've had to look their wives and their kids in the eyes and determine in my heart whether I did the best I could to protect the lives of my members. Now, every member of ExxonMobil, as you can tell, is very proud of where they work. They are concerned about their job safety.

Uh, they are concerned about their jobs. That being said, we can have jobs and safety. Those who would counterpose the two are creating a false debate. Now, you heard earlier tonight an investigation of an accident that did occur. No one can deny that it occurred. What we do in the modern day is we study those accidents to prevent them from re-occurring. That's the scientific thing to do. Um, as far as TRAA goes, uh, and Torrance Refinery Action Alliance never said that they were representing anybody but themselves, I am a member of Torrance Refinery Action Alliance also.

No one – no one from TRAA, despite what your operations manager may have told you today, has ever said that that refinery should be shut down. They are solely concerned about the single issue of modified hydrofluoric acid. And the question –

Chair Sutherland: Mr. Campbell, your time is up. Thank you. Is Mike Smith still here? Ron Espinoza? Going once. Uh, if not, is Professor Mashkati still here? Yes, he is. Thank you.

Prof. Mashkati: Good evening, Chairwoman Sutherland. Thank you very much for being here. My name is Nash Mashkati. I'm a professor of civil environmental engineering and industrial systems engineering at USC. It is so nice that your group **[inaudible] [02:27:28]** to CSB after the, uh, difficulty time that the CSB have went through that. I have a lot of respect for your agency. Uh, Don Holmstrom here and his colleague are really a national treasure. I have used your BP Texas City Refinery accident explosion report as a handout in my class. It's a seminal piece of work. Uh, however, I've been following, uh, the – the Mobil Torrance Refinery case for the last 30 years.

Uh, I had an Op Ed in *Los Angeles Times* on March 1, 1990. March 1, 1990, it was published in the *Los Angeles Times* about this refinery. We went through this back then. The solution, as I said back then, it was not the closure of the refinery. The solution is not the closure of refinery now. I have served on two national panels investigating BP Deepwater Horizon and Fukushima. I know what safety culture or weak safety culture can do for complex psychological systems. I was here with my students last year.

These systems are low probability, high consequence. And I would urge CSB to look at the safety culture issue and consider that, Mr. Holmstrom, as a key issue like the Texas City, like the Tesoro, like the Chevron refinery. Thank you very much.

Chair Sutherland: Thank you. Is Jose Sandoval still here? Johnny Vallejo would be next. And Cliff Heiss.

Mr. Sandoval: How are you guys doing? Uh, my name is Jose Sandoval. Uh, basically, uh, I wanted to come up here and reiterate that I'm a local guy. I grew up in Torrance Memorial. I went to Normont(?) High and graduated. I went to college for process operations. You know, I have family that works in operations, and they told me it's a very dangerous business. But when I became a contractor, I was lucky enough to go to, uh, different, several refineries. And, of course, I had lunch out with different guys, be able to talk to people and find out which refineries are actually safer. Everybody

told me, hey, you know, it takes a long time to get signed up in Torrance, but they're safe.

I remember shopping over here, being little, never having incidents. Other refineries you go by, you smell odors. You have incidents. You fear driving by there. Luckily, I was able to finish my – my – my learnings and apply to refineries. I was lucky enough to pick ExxonMobil, the Torrance Refinery, and get a job there. And since Day 1, they have implemented safety. They teach you to change the way you think, and not to just react. To actually think before you react. Everything we do every single day, make sure you go home. I'm privileged to have that knowledge where, before, I didn't have that. I implement it. I take it home. I have two young daughters.

I have a wife. I'm very confident to drive to the refinery, drive by the refinery. Unfortunately, I can't afford to live near the refinery, but if I could, I would, because Torrance is expensive. But it's a very beautiful place to be. So if I would – I would buy a home. But, unfortunately, I couldn't. But I could say ExxonMobil is a very safe and well-functioning refinery. We did have that incident, and it's something that we're going to learn from. And this is what we're here for. We're here for that incident. And we want to make sure we want to not have that incident again. ExxonMobil, and my brothers and sisters that I work with, I have faith that that is what they believe.

We all want to go home every day. We all want to come to work. It is something we believe. And I just hope just to relay that to you guys. Thank you.

Johnny Vallejo: Uh, good evening. My name is Johnny Vallejo, mechanical superintendent, uh, contractor at ExxonMobil. I started in 1998, and I'm currently, uh, superintendent there. I just passed my project manager, uh, master's certificate. And I'm, uh – I'm living proof that working at this facility, um, that you can be safe. I have all of my fingers and toes. And, uh, I appreciate Exxon's, uh, ability to – to provide, uh, work for us. Thank you.

Chair Sutherland: After the next speaker, if Rick Cortina, Michelle Kinman, and Jeremy Lance, could come forward.

Cliff Heiss: Good evening. I'm Cliff Heiss. I have a couple of, uh, areas of, uh, investigation to suggest to you in the form of a question. The first one is from me, and the other one, the next one, is from a gentleman who had to leave early and who gave me his paperwork. My question is, pardon me, news reports have stated that there was a hydrocarbon leak in the, uh, ESP unit. Uh, it was there for nine years. Uh, did that leak have any effect on the explosion? An area of investigation. The second thing was from a gentleman by the name of Jim Tarr. He has two degrees in chemical engineering. He has 44 years' experience in the field.

And he, uh, would like you to undertake a project to define the amount of HF that would have been released had the – had the 80,000 pound piece of debris struck the tank that contained "tens of thousands of pounds" of, uh, HF. Focus on the worst case release scenario. He suggests that you gather meteorological data and other relevant – meteorological data relevant to the time of the explosion on February 18. And input the, uh, HF emissions rate, the meteorological data, and other relevant information into an appropriate air disbursement model, and calculate the offset HFAA concentrations that would have resulted from the tank's rupture.

Define the area downwind of the refinery within which lethal concentrations of HF would have occurred. And then the public could better understand the hazardous situation they face due to the use of hydrogen fluoride in the alkalization unit at the ExxonMobil refinery. Thank you.

Chair Sutherland: Is Mr. Cortina still present? If not, Ms. Kinman, you can approach the podium. Jeremy Lance, uh, and then Melanie Cohen will follow Mr. Lance.

Ms. Kinman: Good evening, my name is Michelle Kinman.

Chair Sutherland: I'm sorry, Ms. Kinman.

Mr. Cortina: Did you call Rick Cortina earlier?

Chair Sutherland: I did.

Mr. Cortina: Yeah, I was here.

Chair Sutherland: Are you Rick Cortina?

Mr. Cortina: Yes.

Chair Sutherland: Can you go after Ms. Kinman?

Mr. Cortina: Sure.

Chair Sutherland: Thank you.

Ms. Kinman: Thank you, sir. My name is Michelle Kinman, and I'm the clean energy advocate for the statewide, citizen-funded organization, Environment California. I have 17 years of experience in energy issues here and around the globe. But, more importantly for today, I'm also a proud Torrance homeowner and a parent. I'd like to thank our Members of Congress, Ted Lieu and Maxine Waters, for acting as swiftly and doggedly to uncover answers as to what happened here last February. The fact that my home [is] three miles away, [and] my husband, who was outside the morning of February 18, and so many others, were suddenly covered in refinery ash, is, in itself, unacceptable.

But, it's beyond unacceptable to continue operating the refinery at catastrophic risk to the workers, residents, and the environment. We need to move rapidly away from our reliance on fossil fuels, and not just here in Torrance, but throughout California. This is but one in a long line of dangerous accidents resulting from the extraction, transporting, and processing of fossil fuels. We need only to ask our friends in Porter Ranch. The science is clear that we need to keep petroleum in the ground. The governor has said that we need a comprehensive plan for doing so.

I urge city and state leaders to do all you can to create this plan and to ultimately close this facility and other facilities as we move rapidly towards a clean energy future, built on good paying jobs in the renewable energy industry. Already, over 54,000 Californians are employed in the solar industry full-time with good paying jobs. And that's just the start. We don't have to choose between our safety and a strong economy. Thank you.

Chair Sutherland: Mr. Cortina and then Jeremy Lance.

Mr. Cortina: Hi, my name is Rick Cortina. I'm, uh, a CAP member for the Torrance Refinery. And I do not work for the Torrance Refinery.

I'm on the State Fire Alarm Advisory Committee, LA City Fire Alarm. So many there's not even enough [time] to mention. I will say one thing. Being on the CAP, uh, Exxon has been nothing but more than [forthright], with me, anyway, and with our CAP members, anytime we've asked a question. As much as I'd like to address the rest, uh, I want to turn the rest of my time over to this gentleman so I can finish hearing what he had to say.

Mr. Fitt: I appreciate that offer. I'd like to finish my statement and talk about –

Chair Sutherland: Uh, before you, uh, finish, Mr. Fitt, um, if – if we – yeah, just pause the clock for a moment– we didn't talk about people and yielding their time or swapping out their slots. Um, but because I think there's a lot of interest, Mr. Fitt, to hear what you had to say, I think it's a kind gesture that Mr. Cortina would forfeit his time, which he clearly wanted on his own, um, to give it to you. So Mr. Cortina, I will cycle through everyone else, and if you're still here, then you can go at the end.

Mr. Cortina: Thank you. So he can continue?

Chair Sutherland: Yes.

Mr. Fitt: I appreciate the offer. The second point I wanted to talk about was barriers. They were used in the experiment. Uh, basically, it was a – a jet release with a barrier in front of it. What the scientists found was that, if they varied a distance for the barrier, they got different rain-out amounts. They used that concept. They went and tested it and then determined the closer the barrier is to the jet release, the higher the rain-out. And that happens because of the larger droplets. It's coalescing the material.

They took that concept, they put it into the – in combination with the other – the additive, the barriers, along with the – advanced inventory system, the advanced water mitigation system, detection, surveillance operations, enhanced inspections and – and it brought Torrance to be one of the safest HF units in the world. I've stepped foot on probably one-third of them. So, I can, uh – I feel comfortable making that statement. Thank you. And especially thank you to Rick for his time.

Chair Sutherland: Thank you. So, After Jerry Lance will be Melanie Cohen and then John Bailey.

Mr. Lance: Thank you. How's it going? The CSB, uh, I like you guys a lot. Uh, when I was first – I'm a health and safety representative for my company. The first day on the job, I watched all you guys' videos. I liked 'em. They're really cool. I learned a lot from 'em, too. But who I've learned more from has been ExxonMobil. And being a contractor, I think that says a lot. They have helped me grow within my own company, learning about health and safety, all right? And their safety programs. I grew up in Torrance. My kids go to Torrance schools. Uh, my family all go to Torrance schools. I still live in Torrance.

And I wouldn't live anywhere else. My, uh – my wife, when I'm leaving in the morning, she says good luck on the – good luck on the roads. Be safe driving there. She doesn't say: "Be safe in the refinery," because she knows that I am. And she knows that everyone in there is safe, and they're going to help me be safe, too. And then she says, you know, get milk, get eggs and all that other stuff. . .Um, but like, you know, I just – they've taught me so much. And I wouldn't be as safe as I am today if I wasn't working at Exxon. I – I get to bring it home, too. And I get to tell my kids, hey, hang onto the hand railing.

Three points of contact going up ten flights of stairs for our apartment. So, I just – I'm really grateful to them. You know, I – I don't work for them. I'm not getting anything out of this. I just really feel that I wouldn't be where I am without them in a safety culture. So thank you. Thanks, Exxon.

Melanie Cohen: Good evening. My name is Melanie Cohen. No, I don't live in Torrance. I live in the kill zone of Redondo Beach. And I'm here this evening to thank you very, very much for these hearings. And I'm also here to say thank you to everyone who is here this evening. I appreciate everything everyone has to say because everybody has an opinion. And that's a good thing. And I love the Torrance plant. I think it's a great place. And you will continue to work there, of that I am sure. But, of course, as I am a person, you are a person; you have families, I have families. I love the South Bay; you love the South Bay.

Yes, you guys have a great culture, it seems, based upon the employees that came here this evening, of safety. Except, the problem is, every one of these papers that I've seen here tonight have shown many, many instances of non-safe behavior, whether it's on purpose, or it's just the nature of your business. It's there. That's why I urge the following things: No. 1, when there is some kind of event, please, please, please—it can't be just Torrance who gets the – the information. It has to be someone like myself in Redondo Beach. And when you send out that information, it can't come out two hours later on an email that I signed up for. It needs to be in front of the public as soon as possible.

A siren that may be in – in conjunction with sirens in Redondo, that would be a good idea to have so we – we would know that what – what we would have to do. The other issue is you have a chance to look at this issue about the different fuel that you use. I recommend that, even though that's not your, um, uh, forte for the chemical safety, I recommend that you do look at this issue because, if it can make us all safer, that's all I'm interested in, is for people to live their lives, enjoy themselves and love their communities. Thank you.

Chair Sutherland: Is Mr. Bailey here, John Bailey? Paul **Beswick**? After Mr. Beswick will be Martha Madison.

Paul Beswick: Uh, first I want to apologize for getting a little excited. I thought you were going to be cutting off the public testimony at, uh, 10:00 because you mentioned something about that earlier; that's why I was upset the way I was. Um, my name is Paul Beswick. I'm actually a resident of Manhattan Beach, but I live less than a mile from the Chevron refinery in El Segundo. Uh, for people here who were concerned about, um, modified HF, when I first moved to Manhattan Beach 33 years ago, there was a, uh, alloy signal refrigerant plant where the new El Segundo Mall is that had 90-ton rail cars of HF at the plant.

Um, that's what I call a concern, um, not the modified HF, as in the 90-ton rail cars of HF, yeah. Um, my background: I have a bachelor's and master's in chemical engineering. I've been involved in the RMP/PSM CAL ARP area for over 20 years. I'd like to address the process of what's happening here. Uh, I know many of the people who are here today, including Don Holstrom, Paul Penn, Clyde Trombettas, worked together in this area for, uh,

as I said, quite a while. I don't see the solution being a more complex regulation. I've told EPA that. I've told Paul Penn that. The issue is not lack of regulation.

The issue is lack of proper enforcement. The – in the city of Torrance, there is one person who is responsible for inspecting all of the RMP CAL ARP facilities in the city of Torrance. In El Segundo, there was one person who was responsible for inspecting the, uh, Chevron Refinery in El Segundo. I think there is inadequate staffing for Torrance Fire Department, El Segundo Fire Department. And this happens over and over again. That is where the issue is—not increasing the complexity and rigidity of the regulation, but rather: Torrance, put the money into proper enforcement. Thank you.

Chair Sutherland: After Martha Madison will be **Parvez Abass**, and then Chung Lin.

Martha Madison: Excuse me. May I give my time to Tony **Churg**? I wasn't aware that I was signing up to speak. I just thought I was signing in for – signing up for the event. So she's – she's an eloquent speaker. And I would love to give my time to her, if it would be okay.

Chair Sutherland: Yes, Ms. Madison. Thank you. We will cross you off.

Martha Madison: Thank you. Thank you for being here.

Antoni Churg: Hi, I'm, uh, Antoni Churg. I'm a physical chemist. And I would like to, um, respond first, specifically, to some of the issues raised by, um, Investigator, uh, Denton. And then, um, uh, maybe some comments on – on, uh, Abblett's, uh, stuff on MHF. I have helped the Torrance Refinery Action Alliance, uh, with the calculations. And one of the things we're doing is reverse engineering reports. And, um, by the science – safety advisor. And, what I found is, these absolutely, absurdly, um, uh, simple, uh, deceptions that are in the specification of MHF; namely, the additive is given in units and weight percent.

It should be in mole percent. When you do the analysis in mole percent, you get everything. Uh, and you – you know exactly what the, uh, uh, volatility is decreased. Then, with regard to what Abblett said, he said that it was a C3/C4 issue that made the difference between choosing, uh, MHF versus, um, uh, sulfuric acid. That's wrong, too, because later on, he says that the, uh,

safety advisor said that H2SO4 sulfuric acid is almost as, uh, uh, or more dangerous than MHF. What they did in those tests with those jets is that they used refrigerant for the, um, HF. And they used the alkylation, uh, reactants for the, uh, H2SO4. They're comparing apples and oranges.

So I'm – I'm going to continue with the group. And we're going to continue doing the calculations, reverse engineering the problem. But I – I will make available to you anything that we find. But, um, I really think that – that this is some really fairly trivial stuff that could be, uh, solved.

Chair Sutherland: Thank you.

Mr. Abass: My name is, uh, Parvez Abass, and I'm an engineer at ExxonMobil Refinery. I've been here for almost – almost eight years now. Uh, as you all know, I – I come from Bhopal, and you might have heard about, uh, Union gas – Union Carbide gas tragedy there. And actually, I was in ninth grade, and I was there. And I've seen that MIC gas into my house. And I was, uh, actually, breathing that air for 15 minutes. So that single event dramatically changed my life and inspired me towards the safety and environmental engineering career. I've been a consultant for, uh, almost 22 years.

And I've seen a lot of industries. Oil and gas, machining and manufacturing, asphalt roofing, you name it, and I've seen it. But when I come to Torrance and started working here in, uh, 2008, you know, I found this one, this refinery, as the best in ethics, environmental compliance, safety programs, management and operating procedures, uh, to name a few. I'm very proud to talk about safety concerns at home with family and friends and communicate **[inaudible]** notions on family safety and environmental culture based on the premise that nobody gets hurt. The refineries are not the safest places to work for me.

[This] refinery is committed to protecting the environment and the health and safety of all that share it. I take pride to be a part of a team, which reflects genuine passion for a world-class safety culture. Thank you.

Chair Sutherland: Thank you. Is Chun Lin still present? If not, is Jesse Marquez present? Okay. After Jesse Marquez will be Sarah **Rascomb**.

Mr. Marquez: Good evening, thank you. My name is Jesse Marquez. I'm the founder and executive director of the Coalition for a Safe Environment. We're an environmental justice organization over 50 years old, and we specialize in refineries. I read every federal, state, regional, AQMD rule, law, regulation and program. Within 15 minutes of that explosion, I was called up and notified ExxonMobil had exploded. And in that same conversation, I was told it was the ESP that exploded. Within one hour, I knew why it exploded.

All you have to do, you don't need to be a PhD, petroleum engineer, even an employee.
You go to Google search, and you type in electrostatic precipitator explosions, and you see them right there. And the No. 1 cause, and it was a true statement from the general manager there, that it cannot blow up. Well, yes, that's true. It cannot blow up, unless a combustible vapor gas enters it, and then it gets ignited by electrostatic charges. So, the problem here, and let's get back to the basics— thank you for doing your job, once again, team, — – because it falls on negligence, 100 percent negligence. Why was there a leak? What caused that leak? Where was the detection equipment? Why didn't any employee report it? Why was corrosion allowed to build up on those blades?

That now enters criminal prosecution negligence because they delayed something that was a requirement. They postponed something that was a requirement. A supervisor told an operator, "I'm going to override your opinion and your recommendation" and force them to go ahead and do what he did, and the vapor. So, we have many issues here. There was a problem to maintain equipment. There are manufacturer specifications for every part on this plant, every piece of equipment, and every system. So something was not followed there.

Every part, everything has an expiration date; even a flat, metal bar needs to be replaced. Why? Metal fatigue can also come into the picture.

Chair Sutherland: Thank you. After Ms. Rascomb will be. . .Gary Quinton?

Sarah Rascomb: Sarah Rascomb with the Los Angeles Area Chamber of Commerce. The Allied Chamber has over 1,600 members representing over 650,000 employees throughout the region,

spread out over 35 industry sectors. ExxonMobil has been a valuable member of the Chamber, and employs over 1,000 individuals, local residents as well, at the Torrance Refinery. The work of their employees contributes to the processing of approximately 155,000 barrels of crude oil per day, producing 1.8 billions of gasoline per year. By the looks of the entrance, and, uh, the parking lot, most of us do use that gasoline by using cars.

That being said, Exxon also provides 10 percent of all gasoline sold in California, evidence that the production by the Torrance Refinery is essential to both consumers and a stable economy. Safety is a paramount concern. And this refinery is aware of what went wrong in February, and is continually working at ways to further improve operational safety. California is carrying on a conversation about the future of our energy resources, but, at the time being, our economy and quality of life remain dependent on the petroleum industry. This facility is key to our state's energy infrastructure. Thank you.

Chair Sutherland: Thank you. Mr. Gary Quinton, are you present? If not, is Art Gaskin present?

Female 2: What was the first name?

Chair Sutherland: Oh, Gary Quinton. . . .No longer present. Art Gaskin? No Art. Jake— is this Clapform? Okay. Is Jake present?

Jake Clapham: Yes, I am.

Chair Sutherland: Well, come on down.

Jake Clapham: Hello, my name is Jake Clapham. I apologize for handicapping you up there with my penmanship. Um, first, I'm a health and safety professional at the – at, uh, the ExxonMobil Refinery. My position is specific to industrial hygiene. First of all, as, uh, I would like to thank the members of the Board for all of their work in the last dozen years or so, and their contribution to the profession in general. I appreciate that personally. Uh, my comment specifically, uh, [is] addressed to the – to HF. Um, there have been a lot of comments tonight about the – the worst case scenario. Um, all of which has been portrayed without regard to the – to the many barriers that are in place.

Uh, and I appreciate the many comments, or the several comments, uh, insightful comments and questions from the Board, their interest in, uh, both the barriers in place, mitigations, and also the emergency response. Um, I'm here to tell you that there is a great deal more than our tremendous employee passion between the community and the HF that's at the refinery. Uh, for those members of the community with concerns, and who are looking for more information, I would urge you to – to look more deeply into the comments of, uh, Mr. Abblett, where he listed a number of mitigation systems, which – which may have sounded like a – a string of babble, but if you look closely, those are all independent mitigation systems. Also, the comments of the – the gentleman with the – the double comment. He – he was talking about barriers. He also listed a number of items, uh, that will be insightful for you. We have, in addition to that, a very talented group of engineers, and a tremendous and well-trained group of emergency response individuals, all of who have tools that will specifically reduce the risk of that worst case scenario occurring. And I appreciate, again, the work of the Board and your time.

Chair Sutherland: Thank you. Is Tom Newman present? Tom Newman? After Mr. Newman will be Penny Warsing and then Brad Crist.

Tom Newman: Yes, my name is Tom Newman. And I wasn't born here. Uh, I've been here for 20 years or so. Uh, I have nothing to do with the oil industry outside of being a consumer. However, I did, uh – was family friends with George Keller and Addie Keller way back when. And the last time I spoke with George Keller, 25 years ago, he was, uh, concerned about the NIMBY attitude, which I guess is prevalent here today. At that point, he was dealing with issues with San Ramon. And, for those of you who don't remember George Keller, he was the guy who put together Chevron.

Uh, I – I think we are being misdirected a little bit, um, when we consider the employees of the, uh, ExxonMobil firm as not being loyal, dedicated, and skilled employees. Granted, they are. I mean, let's not – let's not go down that path. I mean, they're good people. The issue, though, is the modified hydrogen fluoride. That's what really needs to be investigated. And, as Dr. Churg said earlier, you need to go back and look at the math; look at how they – how they, uh, did the chemistry, because therein may lie the problem. Thank you.

Chair Sutherland: Thank you. Is Penny Warsing? We won't rush you, Penny. –

Penny Warsing: Hello, my name is Penny Warsing. I am a resident and a very active member of the South Bay community for over 13 years. Um, I've also been an employee of ExxonMobil for over 25 years. I'm the Environmental Section Supervisor at the refinery, and I can tell you that I wouldn't come to work every day, and I wouldn't ask my employees to come to work every day, if we didn't think that it was safe. I, along with many of the employees, have been frustrated with ExxonMobil's lack of media interaction, particularly with, um, all of the incredibly skewed print material that has been, um, out lately.

Um, many of us were very excited to hear what Brian had to say today to help clear the air. And – and, perhaps, if we had been more aggressive with some of our media outreach, um, there may, may, have been less speculation about what we're "hiding." Um, tonight, we've heard a lot of claims about misinformation. Just please consider that this misinformation, this partial information, could take many forms, including, um, *Daily Breeze* articles, or even a very well-meaning community group. Thank you.

Chair Sutherland: Is Mr. Crist still present? Is Alfred Satler present? After Mr. Satler will be Greg Bordeaux. Is Mr. Bordeaux here? Is Ed Binzo Wilburg still present? Okay. Mr. Satler, you have the mic.

Mr. Satler: Good evening. And thank you all for being here five, going on six, hours. Um, I have to say, I'm very impressed with the CSB for – for, um, [that you] actually came here to Torrance. And again, I thank you very much for that. Um, I've been a big fan of CSB for years. Um, for anybody who hasn't looked at a CSB website, I urge you to do so. Um, there are a lot of good videos on that website, um, reenactments of past, uh, chemical accidents, and, uh, definitely things to learn from. And I've used some of those videos in safety meetings myself. So, I urge you to do so. Um, I – I have one small point. Um, debris, um, from – from this incident travelled as far as Carson, which I think is more than one mile from the plant. Um, and I – I received an email from a resident of Carson who said they found debris on their – in their yard.

So, I just want – you said the catalyst one – one mile. You know, I have to say, at least some stuff travelled farther than that. Um, and I'd like to say, you know, it looks to me like Sally Hayati and other

members of the TRAA deserve a lot of credit for a determined investigation of the – the story of MHF and reduction of the "M." Um, and I think that the – this should not be taken in a hostile manner by, um, people from Torrance – from the refinery. I think it should be looked at as a – as an attempt to make us all a lot safer. Um, and I – I do want to thank the – the staff members here for your careful investigation.

And thank you for walking us through the, um, steps and missteps that led to this incident and this near miss. And that's, my time is up. Thank you.

Chair Sutherland: Thank you. So I take it Mr. Bordeaux and Mr. Wilburg are not still present? Okay. Next is Elaine Wilson. Is Elaine Wilson present? Alicia Rivera? After, um, Ms. Rivera, Connie Sullivan, are you still present? And after Ms. Sullivan will be Geneva Look.

Ms. Rivera: Yes, good evening. Thank you very much for [staying] late to listen to our comments. My name is Alicia Rivera. I'm a community organizer with Communities for a Better Environment, CBE. And I focus my work in Wilmington. And I'm here to support the Torrance neighbors who had done a great job focusing attention with the ongoing safety hazard. CBE supported demand for a ban on the deadly chemical HF, which is not only used here in Torrance, but also at the **Valero** Refinery in Wilmington. The Steelworkers have also highlighted the dangers of this chemical for years.

We appreciate the Chemical Safety Board investigation, which also really helped CBE members in Northern California when Chevron Richmond exploded. There is only one thing where we disagree with your findings that were presented tonight. And that is where you say that the, uh, dust from the spent catalytic, uh, was not toxic. We believe that is not correct. In fact, the AQMD sample of soil showed levels that were highly elevated above ground concentration of at least three chemicals, including lanthanum, aluminum, and cerium. This material became airborne following the explosion and reached many residential areas offsite from the refinery.

According to **[Len Tech?]**, a company providing water and air purification systems for industrial facilities worldwide, including the petrochemical industry, breathing this chemical has the

potential to cause embolism and pulmonary fibrosis or even lung cancer, or to threaten the liver, especially if they accumulate in the body. In addition, the major flaring event after the explosion went on for a long time, very likely emitting a large amount of sulfur dioxide, which is a major lung irritant.

Uh, because there was a major release of materials, uh, that are known to have toxic qualities, the Chemical Safety Board, uh, needs to further investigate, and also collect community reports about their health during and after the release. Uh, we want inherently safer systems. We don't just want – want **[inaudible]** but completely eliminated.

Chair Sutherland: Ms. Rivera, your time is up. Thank you. Ms. Sullivan?

Connie Sullivan: Hi, I'm Connie Sullivan, and I'm a member of the Torrance Refinery Action Alliance. And, um, I do want to say, if someone from our group flipped somebody off, I apologize for that, and I'll talk to him about it. Um, also, I want to say, I'm a union member, and I certainly don't want to see anybody lose their jobs. I also have training in risk management. And I know that if you don't imagine a risk, you're not going to prevent it. For example, we saw that someone imagined that CO2 leaking into the electrostatic precipitator might be a problem, but forgot to imagine that hydrocarbon leaking into the electrostatic precipitator could cause a problem, and look what happened.

Um, Mr. Abblett, tonight, told us he can't imagine that a 40,000 [pound] piece of equipment falling on the alkylation unit could cause a problem. Well, I can. As a matter of fact, the worst HF release in this country happened because a, uh – a piece of equipment was dropped from a crane onto a tank with hydrofluoric acid in it. I can imagine that. I can also imagine a large earthquake. You all [are] from back east. But we're told almost every day to expect a large 8.0 earthquake on the San Andreas Fault. It's not a matter of if, but when.

And I can imagine that such an earthquake might disrupt pipes, and so forth, in the alkylation unit, in the water mitigation unit, and we could have a disaster. That's why I believe it's so important to change to a different and safer catalyst. Thank you very much.

Chair Sutherland: Thank you. After Geneva Look is Max –

Mr. Passero: Passerow.

Chair Sutherland: Thank you. Mr. Passerow.

Ms. Luck: Uh, good evening. My name is Geneva Look, and I'm a 32-year employee of the ExxonMobil facility. Currently, I am a field, uh, supervisor. I work with the operators, the contractors out in the field every single day. I'm in and out of the units with the operators. I've also had the opportunity to train many of these operators over the years. I have taught in the Process Technology Department over at Harbor College. One of the things that we have taught, um, and trained on, and work around, are our safety procedures. And we have many, many, of our safety procedures we have, um, that the employees are trained on, um, before they go work in the refineries.

The other thing I want to make sure that everybody fully understands: We go through a stringent process before we hire anybody in this refinery. And they go through a strict background check. So I want to make sure that the CSB understands fully that the employees here work very, very safely. The facility that we have is very safe. I'm in the turnaround group, where I'm up in that stuff every single day. And we make sure that everything is properly repaired, and that we start those units up safely. And the employees that we hire understand the safety procedures and how it – it affects them every single day.

And they have to memorize those safety procedures prior to going out. And they have to understand how to act on those safety procedures. I thank you all for being here. And I thank you for your time.

Chair Sutherland: Thank you. And then, uh, if Dave Cotlin is still present, you will be next.

Max Passerow: How are you doing? My name is Max Passerow. Um, first off, I'm a community member. I was born, uh, just down the road here at the, uh, Torrance Memorial Community Hospital. And, uh, a few months ago, my son was born at the same hospital. So I've grown up in this area. Uh, I went to school, uh, LAUSD. I live in San Pedro. I spent many summers playing at, uh, Torrance Beach, taking field trips to the Madrona Marsh. And, uh, you know, I've

just, in general, spent a lot of time in the local South Bay. So, as also being an employee at ExxonMobil, I have a vested interest in the safety, health, and the environment of, not only myself, but my co-workers and, uh, the surrounding community.

Um, currently, I, um – I run some of the, uh, big computers that operate, um, multiple parts of the refinery. And, I can tell you that, there's not a day that goes by that I don't walk in to work expecting that myself and the people that work outside in the field with me will leave in the – the exact same manner that they came in. So, um, along with working with these giant pieces of equipment and computers, I directly am in control of a lot of these safety systems that can, um, shut them down at the push of a button if, uh, is necessary. And there's not a doubt in my mind that I have all of the authority, uh, no matter what anyone says, to, uh – to, uh, handle things appropriately if, uh, it becomes required.

Uh, I also know that the people that work with me, um, are not afraid to let me know if they think something is unsafe. And we will stop and not do it. Uh, and I also just want to say that the, uh, CSB does not let this, uh, uh, investigation get hijacked by other people with ulterior motives, just basically shutting down all of the industry in California. Um, people like all of these luxuries that we have. And the reason that we have a lot of them, and get to enjoy our lives as we do, is because of the refineries and industries, including LPG, uh, Storage, in San Pedro.

Chair Sutherland: Thank you. So if, uh, Dave Cotlin is not available, is Antoni Churg available?

Ms. Churg: I spoke already, thank you.

Chair Sutherland: Oh, yes. Phil Barnes? And is Katherine Graff still present? Yes, okay. And is Craig Katten still present? Thank you.

Mr. Barnes: Hi, my name is Phil Barnes. Um, I am a father, I'm a husband, and I'm also an employee at ExxonMobil. Uh, things that I do there, I'm a first responder, so I am on the Fire Brigade. I am a hazmat-trained, state-certified technician. I'm also on the rescue team, and I'm a licensed EMT. During the day of the explosion, I was one of the first people into the FCC. During that time, I had no fear that I was not going to go home safe. If I did, I wouldn't be doing this job. I don't think anyone in this place would be doing this job if

they didn't think that they could go home safe, or the exact same way that they came in. Thank you.

Chair Sutherland: Thank you. After Ms. Graff, uh, will be Pedro **Paltoy**.

Ms. Graff: Hi, my name is Katherine Graff. And I'm a third generation, uh, Torrance Refinery employee. My father works at the refinery. My mother works at the refinery. My father's grandfather worked at the refinery. I've had brothers temporarily work as contractors at the refinery. Uh, a lot of people here may know my father. And they will know about him that his first priority is the safety of his family. I wanted to be a cop. I was pretty much, uh, through the process, and about to get hired on with LAPD, and my parents talked me into putting in an application with ExxonMobil because they thought that would be a safer option for me.

Um, I'm really happy that I did that. And there were a lot of fine points made tonight. So I don't have to speak too long. But one thing I will say, AQMD made a point saying that our management has a culture of run, run, run at all costs. Um, I don't think they said at all costs, but I heard a lot of that about cost and – and everything is about money and putting things under the carpet. Uh, that's not what it's about. Uh, working at the console, I have been constantly told: "Do what is safe; if you think it's unsafe, pull the plug; shut the unit down." I have never once told my employees that work for me to do anything unsafe.

If they felt unsafe, I knew ,with the support of my management and their management, that I was making the right call by supporting them. So, I just would like to thank you guys for hearing all of us out and taking the time. Thank you.

Chair Sutherland: Is Clint Todd here?

Mr. Todd: Yes.

Chair Sutherland: Okay. You'll be next.

Pedro: Hi, my name is Pedro, and I, um, am not from Torrance like a lot of these fine folks here. Uh, I moved over here, uh, in 2003 from the East Coast to join the Marine Corps. I served from 2003 to 2008. After the Marine Corps, I went to, uh, Berkeley where I studied chemical engineering, like some of you folks. And after I

got my degree, I hired on at ExxonMobil. And a few years ago, I bought a house in the kill zone that, um, they keep putting on the board. And I – I did that fully understanding the risk of HF, um, and studying it in school. And I really do fully understand that. Um, and the reason why I felt comfortable buying a house there is because I also fully understand the mitigations that we have in place.

And, um, I – I work with the personnel every day that are committed to the – the safety that a lot of people here have been talking about. Um, and so the only, uh, other comment I have to say was, um, I think you can hear it in the – you know, the [genuineness] of everyone's, uh, voices that, you know, we – we really are, you know, committed to safety and, um, um, you know, it's – it's unfortunate that the things that occurred on February 18 happened. And, uh, we're all truly sorry for that. And that's why we're all here today, um, you know, taking our time to fully understand and learn about it from you folks so that, you know, a thing like this doesn't happen again.

Um, and that's all I have to say. Thanks.

Chair Sutherland: Mr. Todd?

Mr. Todd: Uh, thank you for, uh – for – Members of the CSB, and for everybody in this room that's still here with us, for any of you that are, uh, fellow marathon runners, I think we can see Mile Marker 26, and we're almost there. We should all be commended for our perseverance and commitment. So, I appreciate that. Um, I appreciate the opportunity to share just a few brief comments. Um, my name is Clint Todd. I am a resident of Torrance. Like each one of us in the room, I do wear many hats. I'm a son of aging parents, a devoted husband of 34 years, a father of 5, grandfather of 2, a man of faith, a California taxpayer for 15 years, a graduate of the UC system Berkeley campus, and a passionate outdoor recreator.

And my last hat to mention is that I'm also a long-term employee of, uh, ExxonMobil—about 37 years. I'm very near retirement, uh, and I've only been involved here at Torrance for about three years. But I've worked in and around other ExxonMobil refineries in Europe, Asia, and the US. The few comments I'll share may sound a bit clichéish, but these thoughts I'm about to share— they

are sincere. They're well intentioned, and they are from the heart. At the most – first, at the most fundamental level, every individual here tonight desires the same thing. We are all like-minded. We support the charter of the CSB to protect workers, the public, and the environment.

Uh, furthermore, we probably all support the phrase mentioned in the, uh, letter from the CSB announcing this meeting, which states that we should reduce risks, um, to the greatest extent feasible. I'm sure we could have an interesting debate on what, uh – what feasibility – what that term means. Um, let's see. Where's my – where am I? I'm trying to cut it short here. Oh, second, who or what ExxonMobil is: Is it a heartless entity that seeks profits at the expense of everything else? If you truly feel that way, you are some combination of being naïve, ignorant, or deluded.

ExxonMobil is nothing more or less than – I'm out of room – out of time. But it's comprised of 75,000 employees who. . .

Chair Sutherland: Thank you, Mr. Todd.

Mr. Todd: . . .are only committed to do what's right and help all of us.

Jason Cyro: So you haven't called my name yet, but I should be the next on the list: Jason Cyro [phonetic]?

Chair Sutherland: You're really good. Okay.

Jason Cyro: Thanks. Um, so good evening. Uh, my name is Jason Cyro. I want to start with, uh, thanking – thanking you for holding this forum here in Torrance, um, so that everybody here can understand, um, how the investigation is progressing. Um, I've lived here in the area for most of the last 11 years. Um, and luckily, my wife and I were able to move to Torrance last year, um, and just live a couple of blocks south of here. Um, we really enjoy living here in Torrance. Uh, it gives us great access to all of the things we love to do. Um, in particular, I'm really, like Todd – or, uh, Clint, sorry—very active outdoor enthusiast.

[I spend] most of my weekends, local beaches, hills, uh, running, swimming, um, doing other stuff with my triathlon clubs, or my other weekends are, uh, hiking in the local mountains, um, with some clubs that I lead there, um, including the Sierra Club, um,

where I'm a wilderness travel instructor. And, uh, I'm a certified outings leader with them as well. Um, and so we take people outdoors to enjoy the – the pristine beauty, um, that our country offers, um, in the local mountains, as well as my favorite locations in the Sierra Nevada Mountains north of LA.

Much of this training, and the trips we organize, [are] aimed at assuring our students learn to appreciate and protect the environment following "leave no trace" principles, and making group safety paramount to all of our outings. I always say to our groups that the mountain people are going to—it's always optional; returning back home to our families is mandatory for every trip. Much of my appreciation for safety comes from the various roles I've had at the Torrance Refinery, where I've worked for most of the last 15 years, um, and more recently, as an engineering supervisor, and prior to that as an engineer.

Um, I've worked pretty much in every unit throughout the refinery, including the ESP, um, area and the HF alky. Um, and I can tell you, like everybody else is saying, that in every day, everything we're working on, um, is focused on safety and how do we make sure everyone that we work with goes home safely. So, thank you, guys. Thanks to the investigation team. Um, you guys did a great job while we were out there interviewing with you. Thanks.

Chair Sutherland: Thank you. Uh, Mitch Shapiro, if he's present? Mitch Shapiro? Gilbert. . .It's an O, Ora –

Mr. Orabueno: Orabueno.

Chair Sutherland: Thank you. Yes. Orabueno. Are you here, or is somebody answering for you?

Mr. Orabueno: His son-in-law is answering for him. He's not here.

Chair Sutherland: Okay. Uh, Patty Senical?

Ms. Senical: Thank you. Madam Chair, Members of the Board. My name is Patty Senical. I'm the Director for Western States Petroleum Association for Southern California. ExxonMobil is a member of our trade association, as well as the other major oil companies, oil and gas. Quickly, our industry takes all accidents very seriously. And our members and their employees are diligent to provide our

region and state with vital energy supplies in the safest manner possible. And you heard a lot of that personal testimony tonight. Safety is a top priority. Safety is a requirement for everyone who works in a refinery environment, as they have families to go to at night, including me.

When I go in the refinery, into the conference room, having to listen to safety videos and what to do, and they instruct you on how to evacuate, it's very thorough. Uh, the important thing for our industry is to learn from this incident and to incorporate these lessons into our culture of learning. WSPA has been very engaged with the governor's Interagency Taskforce on Refinery Safety. WSPA is participating with the CAL PSM and with the CAL ARP regulation development, which has been collaborative, very complex, and very robust. WSPA will continue to engage with the California Department of Industrial Relations, and other agencies, to implement recommendations to the interagency taskforce.

WSPA is a member and participates on the DIR advisory committee of stakeholders, working on updating, uh, language for the Process Safety Management regulations, which are the backbone of California's safety program. WSPA members will continue to strive for improvements in a culture of learning to eliminate workplace accidents for the well-being of the workers, the contractors, and the communities that we operate in. Thank you for this hearing. Thank you for staying late. And we look forward to working with your agency, and all the agencies, on implementing harmonization, clarity, and delivery of desired results. Thank you very much.

Chair Sutherland: Thank you. Uh, it looks like we have only a few more that have signed up. Uh, Kim Nibarger and Mike—I'm going to spell your name: Mike Huynh. Mike Huynh, are you still here? And Kim Nibarger, are you here? Okay. Um, those are the comments from those who signed up prior to the meeting. Our process now is to ask those who were watching by webcast if they wanted to submit any comments to meeting@csb.gov. We would offer to take those, but I think, in the interest of time, uh, I will let those who are watching on webcast send us your statements. Um, we will certainly add it to the final record.

And we will read everything that we receive, and will share it broadly among the, uh, CSB investigations team, the Board, and

others. I will now open the floor to anyone who did not sign the sign-up sheet who would like to make final comments. Yes? To make this easier, and instead of hand-raising, because people may do that simultaneously, I will ask that you just queue up in front of the microphone.

Richard: Hi, I'm Richard. I'm a small businessman in Torrance, and I have no doubt that, uh, ExxonMobil is a great company. And I've met some of the employees. They're great people. But I have more questions, that's all. And I'm familiar with hydrofluoric acid. And I know hydrofluoric acid is extremely corrosive against metal and corrosive against porcelain and corrosive against glass. Uh, about the only thing you really can store it in is certain plastics. So the question I have is what – what is it stored in in the tanks? Is it, uh – what kind of tanks do they use? And, second of all, what caused the leak on October 23?

What was the cause of that hydrofluoric leak? Those are my questions, more than a comment. Thank you.

Chair Sutherland: Thank you.

Christine Sanchez: Good evening. My name is Christine Sanchez. I'm not an employee of, um, ExxonMobil. I'm not a member of TRAA. But I am a 28 year resident of – of Torrance. And I happen to live right on the cusp. It hasn't been made clear to me of the red, so-called "dead zone." So, I'm still not clear exactly—am I just out of it, because it looks like a hair point on the map? Um, but my thoughts are this: Heck of a job to the investigative team, given the fact that they haven't received 49 percent of the information that they've requested. I think it must be very frustrating. But I was impressed. Some of the words that I heard, and I'm going to kind of copy just some thoughts, [on] um, corrosion.

I agree with the previous speaker. Corrosion bothers me. I'm hearing language, and I appreciate all of the employees that came out. There's no question in my mind that they're sincere when they talk about their commitment to safety. But I would also agree with another speaker who said the numbers and the incidents that have taken place at the refinery are not consistent with the commitment. So, I don't think it's the employees. My concern is coming more, perhaps, at some senior management – maybe senior management that was there prior to the new manager. I will tell

you, in the 28 years, when I first got here, I was experiencing black smoke on the perimeter of my carpet.

And carpet cleaners would tell me it was coming from the refinery. I am one of the few individuals who will not drive on Crenshaw Boulevard because I don't want specks coming over on my windshield. So I'll drive out of my way. But given that, I have found that, typically, a year has not gone by in the 28 years that we haven't had not 1, not 2, but several incidents. We have had some deaths. Not more recently. But this last year, I think, really caused some frustration because, after the February incident –

Chair Sutherland: Your time is up.

Ms. Sanchez: There were three more.

Chair Sutherland: Thank you.

Edward Hart: My name is Edward Hart. I am an alky operator at the Torrance Refinery. And I just wanted to say that we like Torrance. I don't live here, but my wife and I thought about moving here long before I worked for Torrance Refinery. So thank you, guys, for being here. Thanks for all the findings and stuff and putting it up. Um, I just want to say quickly that I believe modified hydrogen fluoride does work, and I'll tell you why. I have firsthand experience. Contrary to belief, we do do maintenance in the alky. And we have to get equipment ready for maintenance. And sometimes, modified hydrogen fluoride is probably a little bit harder to get ready than the stuff that just vaporizes.

So, I just want to let you all know that. I do have, from what I've seen, I have some firsthand experience. So that's it. Thank you.

Chair Sutherland: Thank you. I know that there are others, you know, in the flow-over room. I hope you have come in, or that if you wanted to make a comment, that you are on the way. But, is there anyone else in the room who would like to make a final comment? Okay. Well, I would like to say, certainly, on behalf of the entire CSB, we really appreciate your participation and attendance, and for all of the comments that were made tonight, uh, from a variety of different perspectives. Uh, we really, um, were very, very excited about having both the preliminary findings and the PSM panel. And it turned out to be a very insightful and thoughtful evening.

So I – I thank you all for that. And for going well past 10:00. I want to thank the team again for their dedication. The team will use, uh, the information heard here tonight, and any comments that are submitted to public@csb.gov, uh, subsequent to the meeting to help in its efforts to develop a final report with safety recommendations that can then be presented to the Board for a formal presentation and a vote at a later date. I want to thank the elected officials who spoke earlier today and shared their perspectives, as well, or sent someone on their behalf.

I'd like to thank members of the Torrance Refinery Action Alliance, the members, uh, of ExxonMobil, and also the General Manager who was one of our speakers tonight, and the members of our panel to discuss Process Safety Management. All of these things, uh, will contribute to us understanding important safety issues and how to move forward. I want to also thank the Board Members, uh, for their comments and questions here today, which I thought were equally probing, so, I thank you for that.

All of us share a strong interest in trying to prevent these tragedies, and in gaining as much information as possible, so that our final work product can help prevent similar incidents, or the same types of incidents in the future. So, we'll be working together now with the staff to see what the important recommendations are going to be. And, as we gather more information about a timeline or a subsequent meeting, we will be sure to let everyone in the community know, uh, when we expect to return with a final report. With that, the meeting is adjourned.

**[End of Audio]**

**Duration: 213 minutes**