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PRODUCTION OVER PROTECTIONS: A REVIEW OF PROCESS SAFETY MANAGEMENT IN THE OIL AND GAS INDUSTRY

HEARING

BEFORE THE

SUBCOMMITTEE ON EMPLOYMENT AND WORKPLACE SAFETY

OF THE

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

ON

EXAMINING PRODUCTION OVER PROTECTIONS, FOCUSING ON A REVIEW OF PROCESS SAFETY MANAGEMENT IN THE OIL AND GAS INDUSTRY

JUNE 10, 2010

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C O N T E N T S

STATEMENTS

THURSDAY, JUNE 10, 2010

	Page
Murray, Hon. Patty, a U.S. Senator from the State of Washington, opening statement	1
Isakson, Hon. Johnny, a U.S. Senator from the State of Georgia, opening statement	4
Bennet, Hon. Michael F., a U.S. Senator from the State of Colorado	5
Hagan, Hon. Kay R., a U.S. Senator from the State of North Carolina	6
Franken, Al, a U.S. Senator from the State of Minnesota	6
Barab, Jordan, Deputy Assistant Secretary of Labor for Occupational Safety and Health, Washington, DC	7
Prepared statement	9
Casey, Hon. Robert P., Jr., a U.S. Senator from the State of Pennsylvania	23
Nibarger, Kim, Health and Safety Specialist, United Steelworkers, Pittsburgh, PA	27
Prepared statement	29
Sawyer, Randall, Director, Hazardous Materials Programs, Contra Costa County, Martinez, CA	33
Prepared statement	34
Drevna, Charles, President, National Petrochemical & Refiners Association, Washington, DC	44
Prepared statement	46

ADDITIONAL MATERIAL

Statements, articles, publications, letters, etc.:	
Response to questions of Senator Isakson by Charles T. Drevna	61
American Petroleum Institute, API, letter	63

PRODUCTION OVER PROTECTIONS: A REVIEW OF PROCESS SAFETY MANAGEMENT IN THE OIL AND GAS INDUSTRY

THURSDAY, JUNE 10, 2010

U.S. SENATE,
SUBCOMMITTEE ON EMPLOYMENT AND WORKPLACE SAFETY,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m. in Room SD–430, Dirksen Senate Office Building, Hon. Patricia L. Murray, Chairman of the subcommittee, presiding.

Present: Senators Murray, Casey, Hagan, Franken, Bennet, and Isakson.

OPENING STATEMENT OF SENATOR MURRAY

Senator MURRAY. This subcommittee will come to order.

First of all, I would like to welcome all of our witnesses and guests to this hearing on keeping workers safe in the oil and gas industry. Thank you all for coming here today.

Before I begin, I do want to mention a witness who should be here, but is not. I did invite representatives from BP to be here today to help us understand what has been going wrong at their company that has led to so many accidents, and what lessons they have learned from the disasters at their company. But, unfortunately, they did refuse to be here. And I just have to say that, honestly, I find it fairly outrageous that, even after an accident that killed 11 workers, BP is not putting a high enough priority on worker safety to send a representative to a hearing specifically focused on protecting workers in their industry. So, I want to be clear; I am not going to stop working to get answers from BP. But, I am extremely disappointed that they would not be here today.

Like so many Americans, I am horrified and outraged at the continued devastation that we see in the Gulf Coast. There's been a lot of talk about the economic and the environmental impact, and I want to make sure we don't forget about the oil and gas industry workers, who deserve to be protected: the 11 workers who were killed at the Deepwater Horizon; the 15 workers who died, and more than 170 injured, at the BP Texas City refinery disaster in 2005; the 7 workers who were killed at the tragic fire at the Tesoro refinery in my home State, in Anacortes, WA, earlier this year; and the hundreds more who've been injured or killed at refineries, on rigs, and in other oil and gas facilities over the past several years.

These workers and their families deserve to understand what went wrong. And every single worker deserves to feel confident that, while they are working hard and doing their jobs, their employers are doing everything possible to keep them safe.

Let's be clear. Despite what anyone tries to say, this is not a safe industry. In the last 2 months alone, there have been 13 fires, 19 deaths, and 25 injuries in the oil and gas industry. That's just in the last 2 months.

In fact, in 2010 alone, there's been an average of one fire per week at our refineries. And I should say, those are just the fires that have been reported. Refineries have no legal obligation to report every incident.

And on Monday, two more explosions rocked the industry. Seven crew members in Morgantown, WV, were injured when a natural gas well exploded while they were drilling through an abandoned coal mine filled with methane gas. And a natural gas pipeline in Johnson County, TX, exploded, killing two more workers. To me, this doesn't just seem like simply a string of bad luck. It appears to be a disregard for safety regulations and precautions across the entire industry. And I'm very concerned that it is the result of oil and gas companies that put profits and production over workers and safety.

Just this week, a ProPublica article appeared in the *Washington Post* that highlighted a report, issued by BP in 2001, reviewing safety concerns at their Prudhoe Bay drilling fields.

And, without objection, I would like to submit this article in the *Washington Post* for the record.

[Editor's Note: Due to the high cost of printing previously published materials are not reprinted in the hearing record. To obtain the above referenced article please go to: http://www.washingtonpost.com/wp.]

Senator MURRAY. In their review of operational integrity concerns at Greater Prudhoe Bay, BP's own workers noted,

> "Preventative maintenance, including scheduled maintenance required by regulation, has not been completed as scheduled for all fire and gas equipment,"

and that,

> "Many workers believe their ability to safely shut down production has been diminished by staff reductions and the deterioration of the valves used to isolate production."

And last, and perhaps most shocking, the report stated,

> "Many of the employee concerns discussed in this report are not new, and have been the subject of significant study and discussion for a considerable period."

This is simply unacceptable. And we've seen other reports and studies over the years that have laid out extensive recommendations for improving worker safety.

In response to the Texas City tragedy, BP commissioned an independent panel to conduct a thorough review of the company's corporate safety culture, safety management systems, and corporate safety oversight at five U.S. refineries. The panel illustrated several clear and specific suggestions to address the major safety hazards that were found at all five of BP's U.S. refineries.

In October 2009, OSHA fined BP $87.4 million for the company's failure to correct potential hazards faced by employees. That is the largest fine issued in OSHA's history.

And as if things weren't bad enough, I've read reports that some of the same oil and gas companies that experienced fatal disasters at their worksites received safety awards within the same year of their accidents. In fact, the workers at BP Texas City were celebrating safety accomplishments at the very moment the explosion happened that killed them.

It was reported that the same day that the Deepwater Horizon exploded, a group of BP executives were on board to celebrate the crew's safety achievements. That is truly tragic, and it is unacceptable, and it needs to change.

To be clear, BP is obviously not the only company with a poor record of safety. It seems to me that the oil and gas industry, as a whole, has a hard time learning from their mistakes and making sure that our workers are protected. Why is this? We need to ask. Is it the regulations that are already on the books? Are they being ignored? Or are the regulations currently in place just not tough enough to do the job? We've got to figure that out before more lives and their families are destroyed. And we need to make sure everyone knows that business as usual in this industry will no longer be tolerated.

As John Bresland, chairman of the Chemical Safety Board, recently told the *Seattle Times*, "If the aviation industry had the same number of types of incidents as the refinery industry, I don't think people would be flying too much." I have to agree with Mr. Bresland.

So, today we're going to hear from witnesses who are going to explain to this subcommittee why these incidents continue to happen, why there continue to be shortcomings in the oil and gas industry when it comes to worker protections, and what we need to do to make sure that this industry improves.

I will have some questions about the need for improved process safety management, and I'm very interested in hearing examples of local efforts that have successfully addressed process safety hazards in the oil and gas industry.

But, before I turn to my Ranking Member, I want to briefly mention two incidents from Washington State that make this hearing particularly meaningful to families in my home State.

The first one is recent. I briefly mentioned, earlier, an explosion at the Tesoro refinery in Anacortes, WA, that killed seven workers. It devastated a community, and it left a lot of people still searching for answers. We owe it to those workers, to their families, and the entire community to make sure that a tragedy like this never happens again in my State or anywhere else. Our State has a lot of men and women who go to work every day in the oil and gas industry, and they deserve to be protected.

The other incident I want to mention happened a while ago, but it is still as relevant as ever. In fact, exactly 11 years ago today, June 10, 1999, a pipeline exploded in Bellingham, WA, killing three young Washingtonians and devastating the entire community. Like the workers who lost their lives on the Deepwater Hori-

zon oil rig and in Anacortes, I know these three deaths can and should have been prevented.

So, then, with the help of the entire Bellingham community, I took the lessons we learned and fought hard to pass legislation in 2002 that has dramatically improved the pipeline safety system across our entire country.

What happened 11 years ago in Bellingham was a tragedy. But, it was also a reminder that we cannot just assume that someone else is taking care of things. We cannot slip back to where we were before. We have to stay vigilant and continue working to improve safety wherever we can, which is why I believe it is so fitting that this hearing on worker safety in the oil and gas industry is taking place on the 11th anniversary of that tragedy.

So, once again, I'm looking forward to hearing from our witnesses about the important issue in front of us.

And before I introduce the panel, I want to first recognize Senator Isakson for his opening statement.

STATEMENT OF SENATOR ISAKSON

Senator ISAKSON. Well, thank you, Madam Chairman. I appreciate your calling the hearing today.

I regret that it's necessary to call the hearing, and associate myself with your remarks with regard to the tragedy and our sympathy for the families and the wish that we all have to have the accountability be placed wherever it needs to be to see to it this is minimized or never, ever happens again.

Unfortunately, the Deepwater Horizon explosion, and the tragic loss of 11 lives and injuries of 25 people, is not the only petroleum-based disaster we have had. As you mentioned, in your own home State, the Tesoro fire claimed 7 lives, and the BP explosion at Texas City operations claimed 15 lives in 2005.

In fact, we have a death rate of 3.7 per 100,000 workers nationwide; and many workers in very dangerous professions. But, unfortunately, in oil and gas exploration, it's 74.8 deaths per 100,000, or 20 times as many. That means it's important for us to focus on those things that we can do to help ensure that we have redundant systems of security on all operations to minimize the occurrence of such an explosion.

I have supported offshore drilling, and continue to do so. I don't want this to be what Three Mile Island was to nuclear energy. I don't want this to become the same for petroleum energy. But, that does not mean we should tolerate or accept a loss of life or less than the maximum amount of security necessary to ensure and prevent those from happening again.

I look forward to working with OSHA, and I hope OSHA will be sure to keep the families informed as the progress of information comes forth from the investigations that will follow on the Gulf Coast disaster.

I learned from the sugar refinery in Georgia, at Port Wentworth, that happened 2 years ago, how critical it is for these families to know exactly what the process of the investigation is, and exactly what OSHA may find and the Chemical Safety Board may find.

I encourage our witnesses and the Administrator, who, I understand today is in the Gulf, working with employees of OSHA, to see

to it we do everything to find out what went wrong. But, I encourage that information to be available as soon as possible to those who lost loved ones in this tragic injury.

Once again, I appreciate very much the Chairman calling this hearing.

I look forward to hearing the testimony of our guests today.

Thank you.

Senator MURRAY. Thank you very much, Senator Isakson.

Senator Bennet.

STATEMENT OF SENATOR BENNET

Senator BENNET. Thank you, Madam Chairman. And thank you for holding this hearing.

The issue of worker safety and preventing tragedies on the job is at the forefront of all of our minds after the recent Gulf and coal mine tragedies. I will say it's on the forefront of my mind because last night I bumped into the spouses of some of the people that had been on the rig in Florida, who already are here, advocating on behalf of these safety issues. I think it's just extraordinary. They said to me that, whatever we do, we shouldn't forget the people that were killed in this explosion. It was a painful discussion for them to be having. And I appreciate the fact that they're already here, making sure that we're informed about this work.

The explosion on the Deepwater Horizon rig in the Gulf on April 20 killed 11 workers and injured 17. Two days after the explosion, the rig sank. This tragedy for the families of the victims became the largest environmental disaster in our Nation's history. The oil leak remains uncontained and has cost us innocent human life, crushing economic consequences, and unprecedented environmental damage to one of America's most precious and defining ecosystems.

The dangerous circumstances that led to this explosion put workers' lives at risk. And this is simply unacceptable.

I've also been deeply troubled by news reports that corners were cut in the drilling operations leading up to the April 20 blast. Allegations from recent interviews with Transocean employees, the owners of the destroyed rig, suggest the stifling of safety concerns of workers.

I hope today's discussion gauges whether such practices are commonplace, and what corrective protections Congress should consider. This tragedy is a stark reminder that energy development, without proper safety and environmental precautions, can be a very dangerous business.

To be sure, traditional resources provide an important contribution to our Nation's energy portfolio, as they do in my State. However, the tragedy unfolding in the Gulf should remind us that oil and gas development that comes at the expense of American lives is not drilling that I, or anyone on this committee or in this Congress, should support.

Madam Chairman, thank you for holding this hearing.

Senator MURRAY. Thanks very much, Senator Bennet.

Senator Hagan.

STATEMENT OF SENATOR HAGAN

Senator HAGAN. Thank you, Madam Chairman. And thank you for holding this very important hearing.

And I want to thank all of the witnesses who are here today to testify.

In light of recent events, it is clear that we need to address and reform workplace safety management in the oil and gas industry.

This week, the *Washington Post* reported on years of repeated problems and violations by BP. In 2001, a report found that equipment needed for emergency valve shutdown and gas and fire detectors did not function properly, and were neglected. In 2004, another report found that BP was cutting corners to save money by using aging and corroded equipment. In 2006, a BP employee reported an unsafe work environment, and the employee was subsequently terminated. In 2008, a portion of a gas line blew apart after concerns were raised about segments of the gas line system. Now we learn that the gas alarms and other shutoff systems that could have cut off power to the Deepwater Horizon failed.

These are just a few examples of BP's reported problems and safety violations. I think that one of the most important points that should be made here today is that these lives that were lost—and my thoughts and prayers certainly go out to the families of those 11 men who died—but, their lives were lost, and the environmental devastation—were perhaps preventable.

I look forward to learning more from our witnesses about enhanced safety measures to prevent workplace injuries, illnesses, and certainly deaths. We need to do everything we can to prevent this kind of disaster from ever happening again. And I look forward to hearing from our witnesses about this topic.

Senator MURRAY. Thank you very much.

Senator Franken, do you care to make an opening remark?

STATEMENT OF SENATOR FRANKEN

Senator FRANKEN. Thank you, Madam Chairman. And thank you for holding this important hearing.

I hope that today's hearing can serve as a real crossroads for the oil and gas industry. I hope that we can inspire real change in their approach to workplace safety, inspire them to finally start making human life paramount, and explore ways the Senate can more effectively incentivize better compliance.

Minnesota has about 1,500 workers in petroleum refineries and on pipelines. These jobs come with serious hazards. Three workers have lost their lives in recent years, and many more have suffered grave injuries. Each of these instances is a tragedy, in large part because they were preventable.

Workplaces in the United States of America in 2010 should not be inherently dangerous. We should be able to offer each and every American a safe workplace to work hard and earn a living. The recent accidents in Washington and in the Gulf have caused both grief and outrage across the country. It was especially frustrating when we later learned that BP has a long and offensive list of egregious violations.

Why were they permitted to continue business as usual? Where did they fall short? And where did we, as a government, fall short? I hope that we'll be able to tackle some of these questions today.

I want to thank all of today's witnesses for being here.

And again, I want to thank you, Madam Chairman, for holding this very important hearing.

Senator MURRAY. Thank you, to all the Senators.

We're going to turn to our witnesses. But, again, I do want the committee members to know that the committee did invite BP to participate. They did decline. I find that very regrettable. I think it is important that we hear from them. We will continue to pursue that, but I hope it is not a comment on how serious they take the issue of workplace safety, by declining to be here.

With that, I want to introduce our first panel. And joining us today is Deputy Assistant Secretary of Labor for Occupational Safety and Health, Mr. Jordan Barab.

And if you could please give us your opening testimony. And your full statement will be submitted for the record.

STATEMENT OF JORDAN BARAB, DEPUTY ASSISTANT SECRETARY OF LABOR FOR OCCUPATIONAL SAFETY AND HEALTH, WASHINGTON, DC

Mr. BARAB. Thank you, Senator.

Chairman Murray, Ranking Member Isakson, and members of the subcommittee, I want to thank you for inviting me here this morning

Assistant Secretary David Michaels sends his regrets, but Secretary Solis asked him to accompany her down to the Gulf to investigate worker safety and health concerns down there with the cleanup workers.

An April 20 explosion of the Deepwater Horizon offshore oil drilling platform killed 11 workers and injured 17 others. This disaster occurred on the heels of a recent explosion at the Tesoro refinery that left seven more workers dead, and the 2005 fire and explosion at BP's Texas City refinery that killed 15 workers and injured more than 170.

In the past 4 months alone, at least 58 workers have died from explosions, fires, and collapses at refineries, coal mines, and oil refinery rigs, as well as a natural-gas-fired explosion at a construction site in Connecticut. Obviously, the status quo is not working.

Secretary Hilda Solis's vision of the Department of Labor is: good jobs for everyone. Clearly, good jobs are safe jobs, and we must do more to ensure that all of our Nation's workers, including those in the energy industries, can go home safely when their workday is done.

In 2007, OSHA initiated a National Emphasis Program, with the goal of inspecting almost all of the Nation's oil refineries. We adopted the saturation program, because conventional methods of assessing workplace safety, such as injury and illness rates, were not adequate indicators of the risk of fires, explosions, and other rare but catastrophic accidents, nor do they account for the fact that in many refineries much of the most dangerous work is contracted out, and injuries and fatalities among the contract workers do not show up on the refineries' operators' rates.

The results of the NEP are far more deeply troubling. Not only are we finding a significant lack of compliance during our inspections, but, time and again, our inspectors are finding the same violations in multiple refineries, including those with common ownership, and sometimes even the same refinery.

These and other incidents involving close calls, serious injuries, and fatalities are a clear indication that essential safety lessons are not being learned. For example, because BP Texas City had failed to abate many of the problems that caused the explosion that killed 15 workers, late last year OSHA proposed additional penalties of $87 million on that refinery. Only a few months after that, OSHA found similar violations at a BP Husky refinery in Toledo, OH, for which we proposed $3 million in penalties.

The failure to learn from earlier mishaps has exacted an alarming toll of human lives and suffering. Refineries, chemical plants, and other facilities that routinely handle large quantities of highly hazardous chemicals are not like conventional workplaces. The consequences of a single system failure anywhere in the facility can be catastrophic.

For that reason, OSHA issued its Process Safety Management standard nearly 20 years ago. That standard, embodying a comprehensive, systematic management approach to process safety, was one of OSHA's earliest attempts to create the kind of plan/prevent/protect regimen the Department is now working on to implement in a much broader way.

That standard, along with others, requires employers to compile process safety information and make hazard information and training available to employees and contractors, to develop and communicate written process hazard analyses that identify potential system failures, and to address and remediate risks identified by process hazard analyses in routine inspections or significant incidents.

Yet, OSHA inspectors are still finding the same problems in too many facilities. Clearly, much more work has to be done to ensure an effective chemical process safety. OSHA's identified three important concepts that guide that work:

No. 1, effective process safety management systems are critical for success in preventing catastrophic events. This means establishing a set of practices that define the organizational culture of these companies. It's also vitally important that workers can feel that they can report safety and health concerns without repercussion.

No. 2, the oil and gas industry must learn from its mistakes. Almost all of the recent catastrophic incidents in refineries were repeats of earlier mistakes, from which lessons could have been learned.

No. 3, conventional injury and illness rates are not adequate indicators of the risk of fires, explosions, or other catastrophic events, and companies need to develop better indicators to assess the risks in their workplaces.

We have made it very clear to the petroleum refinery industry that we are sick and tired of hearing them brag about their excellent safety records while children are burying their fathers and mothers.

Moving forward, OSHA will continue to promote a strong enforcement presence, along with concerted effort to work with industry, labor, and others. We'll also continue to collaborate with other government agencies to address worker safety and health problems in this industry.

Finally, we encourage Congress to pass the Protecting America's Workers Act, which would significantly improve OSHA's ability to protect workers, particularly those in the oil and gas industry.

In closing, I'd like to express my condolences to the family members whose loved ones have been killed on the job, especially to the 11 workers killed in the Deepwater Horizon explosion. I want to assure you that OSHA is actively cooperating with the Unified Command to help identify the hazards that oil spill workers are facing.

Chair Murray, I want to thank you again, for this opportunity to testify today. And I want to applaud you for your advocacy for America's oil and gas industry workers. OSHA is committed to addressing the problem so that more workers do not continue to die in preventable incidents.

Thank you.

[The prepared statement of Mr. Barab follows:]

PREPARED STATEMENT OF JORDAN BARAB

Chair Murray, Ranking Member Isakson, and members of the subcommittee, thank you for inviting me to join you this morning for this necessary conversation about worker safety in our Nation's energy production industries. This issue has most recently been brought to the public's attention in the most tragic way possible, with deaths of 11 workers, and injuries to 17 others as the result of the April 20th explosion on the *Deepwater Horizon* offshore oil drilling platform. The *Deepwater Horizon* disaster occurred even as OSHA continues to deal with the ramifications of the 2005 fire and explosion at BP's Texas City refinery that killed 15 workers and injured more than 170 others, and to help our Washington State Plan partners investigate the April explosion at a Tesoro refinery that left 7 more workers dead.

What have we learned from these tragic events? Certainly we have learned that in our Nation's energy producing industry, the status quo is not working. In the past 4 months alone, at least 58 workers have died in explosions, fires and collapses at refineries, coal mines, an oil drilling rig, and a natural-gas-fired power plant construction site. Not all of these tragedies are within OSHA's jurisdiction; the *Deepwater Horizon* was an offshore drilling facility, technically a "vessel" not subject to OSHA requirements, while mine safety is within the purview of OSHA's sister agency, the Mine Safety and Health Administration (MSHA). Nevertheless, the toll of worker deaths and injuries on the job is sounding an alarm about a major problem throughout the energy industries—a problem that OSHA must help address.

Secretary Hilda Solis' vision for the Department of Labor is "good jobs for everyone." Good jobs are safe jobs and we must do more to ensure that all of our Nation's workers, including those in the energy industries can go home safely when their work is done.

OSHA'S EXPERIENCE WITH REFINERIES ILLUSTRATES WIDESPREAD PROBLEMS

In the wake of the Texas City explosion, OSHA initiated a National Emphasis Program (NEP) with the goal of inspecting the process safety management programs of almost all of the Nation's oil refineries. We adopted this saturation program partly because conventional methods of assessing workplace safety, such as injury and illness rates, are not adequate indicators of the risk of fires, explosions, or other catastrophic accidents, nor do they account for the fact that at many refineries, much of the most dangerous work is contracted out and injuries to the contract workers do not show up in the refinery operators' injury rates.

I am sorry to report that the results of this NEP are deeply troubling. Not only are we finding a significant lack of compliance during our inspections, but time and again, our inspectors are finding the same violations in multiple refineries, including those with common ownership, and sometimes even in different units in the same refinery. This is a clear indication that essential safety lessons are not being communicated within the industry, and often not even within a single corporation

or facility. The old adage that those who do not learn from the past are doomed to repeat it is as true in the refinery industry as it is elsewhere. So we are particularly disturbed to find even refineries that have already suffered serious incidents or received major OSHA citations making the same mistakes again.

For example, because BP Texas City had failed to abate many of the problems that it agreed to address after 15 workers were killed in the 2005 explosion, and also failed to address a number of related hazards, late last year OSHA proposed additional penalties of $87 million at that refinery. Only a few months after that, OSHA found similar violations at the BP-Husky refinery in Toledo, OH, for which we proposed an additional $3 million in penalties for egregious willful violations. That refinery had also been inspected a few years earlier, and numerous violations identified. Although BP fixed the specific violations at the Toledo facility that OSHA had identified in the first inspection, we found the exact same problems in other units in the plant.

This failure to learn from earlier mishaps has exacted an alarming toll in human lives and suffering. In the last 5 years alone, OSHA has counted over 20 serious incidents, many resulting in deaths and injuries in refineries across the country. The Tesoro Anacortes explosion in Washington State that killed seven workers last April was one of these.

What do all of these incidents have in common? None resulted from unique technical causes. Each one repeated a lesson that should already have been learned by the industry. For example, last year, OSHA completed an investigation of a naphtha piping failure and release at the Delek Refinery in Tyler, TX, in which the resulting explosion and fire seriously injured three workers and killed two other workers. One of these two workers was killed in the explosion, while the other struggled for 13 days in the hospital before dying from severe burns. But the saddest part of this story is that the naphtha pipe that exploded had already ruptured once before within the past few years.

This cycle of workers being hurt or killed because their employers failed to implement well-known safety measures points out major deficiencies in chemical process safety management in the Nation's refineries and, quite possibly, to systemic safety and health problems in the entire petrochemical industry.

CHEMICAL PROCESS SAFETY MANAGEMENT

Refineries, chemical plants, and other facilities that routinely handle large quantities of highly hazardous chemicals are not like conventional workplaces; the consequences of a single system failure anywhere in the system can be catastrophic. Safety professionals have long been aware that reliance on a safety approach that only addresses problems after they manifest themselves as obvious hazards is wholly inadequate to ensure safety in such workplaces.

For that reason, OSHA, in the wake of a disastrous chemical release in Bhopal, India and several other significant chemical accidents, issued its Process Safety Management of Highly Hazardous Chemicals standard nearly 20 years ago. That standard, embodying a comprehensive, systematic management approach to process safety, was one of OSHA's earliest attempts to create the kind of Plan/Prevent/Protect regimen that the Department is now working to implement in a much broader way. As an early effort, the standard has many strengths, but it is far from perfect. As I will describe below, we are seeing similar violations in too many of the refineries we inspect.

The standard, among other things, requires employers to compile process safety information and make hazard information and training available to employees and contractors; to develop and communicate written process hazard analyses (PHAs) that identify potential system failures; and to address and remediate risks identified by PHAs as well as risks identified in other ways, such as routine inspections or investigation of significant incidents. Employers must take extra steps to maintain the mechanical integrity of critical process components such as pressure vessels and relief systems. It is a key process safety management requirement that employers must timely address and resolve all identified safety issues, and must communicate the resulting safety information and recommendations to all affected personnel, which includes management, employees and contractors.

Consistently throughout the course of the Refinery NEP, we have found that more than *70 percent* of the violations we are finding involve failures to comply with the same four essential requirements:

Process Safety Information: Frequent process safety information violations include failure to document compliance with Recognized and Generally Accepted Good Engineering Practices, (or RAGAGEP, which consists primarily of industry technical guidance on safe engineering, operating, or maintenance activities); failure to keep

process safety information up to date; and failure to document the design of emergency pressure relief systems.

Process Hazards Analysis: We are finding many failures to conduct complete process hazards analyses. Often, there are significant shortcomings in attention to human factors and facility siting, and in many cases employers have failed to address Process Hazard Analysis (PHA) findings and recommendations in a timely manner, or, even to address them at all.

Operating Procedures: Operating procedures citations are for failure to establish and follow procedures for key operating phases, such as start-ups and emergency shutdowns, and for using inaccurate or out-of-date procedures.

Mechanical Integrity: This is a particular concern given the aging of refineries in the United States. Violations found by OSHA typically include failure to perform inspections and tests, and failure to correct deficiencies in a timely manner. In the Delek Refinery case mentioned above, for example, OSHA discovered multiple substandard pipes being operated, and the naphtha pipe whose explosion killed two workers and hospitalized three others had already ruptured once within the past few years.

I have been deeply frustrated by these results. Over a year ago, we sent a letter to every petroleum refinery manager in the country, informing them of these frequently cited hazards. Yet, a year later, our inspectors are still finding the same problems in too many facilities. Clearly, much more work must be done to ensure effective chemical process safety. OSHA has identified three important concepts to guide that work.

Concept Number One: Effective process safety management systems and workplace safety culture are critical for success in preventing catastrophic events.

In addition to effective process safety management systems, *organizational culture* is also a critical component to preventing workplace injuries, illnesses, and deaths. To paraphrase Professor Andrew Hopkins of the Australian National University and author of "Failure to Learn: The BP Texas City Refinery Disaster", workplace culture is not just an educational program that gets everyone to be more risk aware and think "safety first." It means establishing a set of practices that define the organization and influence the individuals who make up the organization. It's not how people think, it's what companies do.

And it may seem obvious, but it bears emphasizing: *Organizational safety culture must start at the top*. It is vitally important for corporate leadership to create an environment within the workplace where workers feel they can report safety and health concerns without repercussions. Since OSHA inspectors cannot visit more than a fraction of the Nation's workplaces, we rely on the eyes and ears of workers to help identify workplace hazards. To this end, OSHA must protect whistle blowers from retaliation or discrimination. The need for effective whistle blower protection is especially important in process safety management, because PSM systems rely upon effective communication of hazard information to and from workers involved in these hazardous operations. We applaud the subcommittee's work on the Protecting America's Workers Act to strengthen and expand protections for worker voice in the workplace.

Concept Number Two: The oil and gas industry must learn from its mistakes.

As discussed earlier, inspections under OSHA's Refinery NEP have found that over *70 percent* of violations are of the same four PSM standard provisions. Almost all of the catastrophic incidents that have killed so many workers were caused by failures that industry executives and facility managers knew how to prevent. They were repeats of earlier mishaps, from which lessons should have been learned.

Industry must do a better job of institutionalizing systems for learning from mistakes, so it does not continue to repeat the same mistakes at the expense of workers' lives. Reform in the management systems of companies that own, operate, or provide services to petrochemical operations is needed, and is needed now.

Concept Number Three: Conventional injury and illness rates are not adequate indicators of the risk of fires, explosions, or other catastrophic accidents, and companies need to develop better leading indicators to assess risks in their workplaces.

To ensure strong PSM systems, we need to do a better job of identifying useful leading indicators of potential catastrophic hazards. The warning that "past performance is no guarantee of future success" applies with particular force to the low-frequency, high-impact events that process safety programs are intended to guard against.

One of the most important challenges in trying to measure performance is determining how and what we measure. Companies have good tools for measuring and managing personal, or "hard hat" safety, and the refining and chemical sectors have generally done well in this area. Standard, OSHA-mandated injury and illness recording on the OSHA 300 log measures conventional hazards such as, for example, those from falls, broken bones and amputations, and yields rates for mishaps resulting in days away from work, restricted work or job transfer (the "DART rate"). Unfortunately, as we have also discovered, having good numbers on the OSHA 300 injury logs does not correlate with having an effective chemical process safety program. The classic example of this is BP-Texas City, which had very good injury and illness numbers for its own employees prior to the 2005 explosion. That tragedy, of course, revealed serious problems with process safety and workplace culture at the facility. Focusing on low DART rates alone will not protect workers or employers from disaster.

Please do not misunderstand me; we need to keep reporting and tracking the illness and injury numbers—DART rates are useful—but we must not let those numbers lull us into a false sense of security. Looking *only* at these numbers does not warn us about pending doom from cutting corners on process safety. And to the extent we continue to factor DART rates into our targeting mechanism, we need to make sure that they are accurate. That is why we are paying special attention to incentive and discipline programs that discourage workers from reporting injuries and illnesses.

CONCLUSION

So where do we go from here? How do we ensure that safety conditions in the Nation's refineries improve? OSHA will continue its efforts to intervene on behalf of workers in the Nation's refinery and petrochemicals industries. These efforts will include both a strong and credible enforcement presence, and a concerted effort to enlist the cooperation of industry, labor, and other stakeholders. This cooperation is crucial to maximizing our impact because OSHA cannot inspect every refinery every year.

You can also expect to see OSHA collaborating more with the National Institute for Occupational Safety and Health (NIOSH), Environmental Protection Agency, and other agencies to address the worker health and safety problems in the refinery and petrochemical industry—and in other industries as well. Together, we can develop a more effective system for targeting problem hazards and problem worksites, and addressing the problems that we have identified. I also met recently with the National Petrochemical and Refiners Association (NPRA), the American Petroleum Institute (API), and the United Steelworkers to reemphasize OSHA's concerns. And, in connection with hazards to which workers outside our jurisdiction are exposed, OSHA is actively collaborating with other agencies to assist in promoting worker safety.

Finally, we need to pass the Protecting America's Workers Act (PAWA), which would significantly increase OSHA's ability to protect workers, and specifically workers in refineries and chemical plants. The Act would make meaningful and substantial changes to the Occupational Safety and Health Act that would increase OSHA's civil and criminal penalties for safety and health violations, making us much more able to issue significant and meaningful penalties to large oil companies before a disaster occurs.

And because safe process safety depends heavily on lessons learned from close calls and near misses, workers need to feel that they are protected when reporting these events and exercising other health and safety rights. The enhanced whistle blower protections that are included in PAWA would go far toward ensuring that workers are protected for speaking out. Another way PAWA could strengthen workers' rights would be to clarify that the whistle blower provisions of the Occupational Safety and Health Act, contained in section 11(c), prohibit retaliation for protected activity in connection with occupational safety and health hazards, similar to those aboard the *Deepwater Horizon*, that are regulated by other Federal agencies.

Giving OSHA the ability to require abatement of hazardous conditions before contests are decided would also significantly enhance the safety of refineries. Ultimately, stronger OSHA enforcement and a modern Occupational Safety and Health Act will save lives.

Chair Murray, thank you again for the opportunity to testify today. I applaud your efforts to shed light on the safety and health crisis in America's oil and gas industry. OSHA is committed to addressing this problem so that more workers do not needlessly die. As stated earlier, we also support Congress passing the Pro-

tecting America's Workers Act to give OSHA the tools needed to improve and expand its PSM enforcement and more effectively deter safety and health violations.

In closing, I would also like to express my condolences to all the friends and family members whose loved ones have been killed on the job, especially to those of the 11 workers killed in the *Deepwater Horizon* explosion. While OSHA's coverage of safety conditions on offshore oil platforms is limited, we are nevertheless very concerned about the hazards that these workers face. We are also actively collaborating with the Unified Command to help identify the hazards that oil spill cleanup workers are facing, and to share our expertise on how to protect those workers. I am happy to answer your questions.

Senator MURRAY. Thank you very much for your testimony.

Let me start by asking about these large, multisite employers like BP. What can OSHA do right now to make sure that executives and managers fix those serious safety violations companywide, especially after OSHA finds those violations at one location?

Mr. BARAB. We have a variety of strategies we're pursuing. One is, we are—not just for refineries, but for all companies, especially those with multiple facilities—we've developed a new program, our Severe Violators Enforcement Program, where we're looking at all the different facilities that belong to a company where problems have been identified or workers have died or been seriously injured.

In terms of the refinery industry, we are—as I said, we initiated a National Emphasis Program, where we're literally inspecting almost every refinery in the country, including all of BP's, both within our jurisdiction and—the State plans, such as Washington, are also inspecting BP's facilities in their States. Unfortunately, as I mentioned, we're finding similar problems in other BP facilities.

Senator MURRAY. What are some of the limitations you face in dealing with corporate-wide problems?

Mr. BARAB. We've had some problems, which we're trying to deal with, where we have corporations in—for example, under Federal jurisdiction and similar—and branches of that same corporation among the State-plan States. For example, we can't—if a State plan finds a similar violation in their State that we found in the Federal State, they can't call that a repeat violation, because it happened in their State plan, which means the penalty is not quite as high as it would be if it was under Federal jurisdiction.

Senator MURRAY. Say that for us once more, because I think it's really important to understand.

Mr. BARAB. OK. In the State-plan States, there are 21 State-plans that run their own State programs including Washington, North Carolina, Minnesota. These States basically do their own inspections. When they run across a citation for an issue that we've also found in one of our Federal investigations, they can't cite that as a repeat.

Now, we can do that. If we find something in one facility and find something in another facility, we can site that as a repeat.

Senator MURRAY. But, a State can't.

Mr. BARAB. Right. Right. If it's in——

Senator MURRAY. So, it wouldn't be——

Mr. BARAB. They're two different jurisdictions, right.

Senator MURRAY. OK.

What new powers would you recommend OSHA to have to force some of these companies to take these problems seriously throughout their entire facility, not just at the one?

Mr. BARAB. Well, one thing obviously is, we need higher penalties. Now, there are rare situations, such as BP, where you have a really egregious situation, where we can levy high fines. But, under normal circumstances, we can't. I think the average penalty for all of our refinery citations under NEP is about $160,000, which is not real high for a major petrochemical company.

I would like to point out something else, though, which is very important, and actually is addressed in the Protecting America's Workers Act. We cannot force a company, whether it's a refinery or any other company, to abate a hazard while our citation is being contested. And these contests can often go on for years. And I know that was one of the explanations——

Senator MURRAY. So, is it to the company's advantage to contest that, because——

Mr. BARAB. Exactly. Exactly. And I know this was an issue—this has been an issue recently raised in your State, with the previous Anacortes inspection citations—that the State decided to settle that for a very low amount of money, because they really wanted to get that fixed. They wanted the company to fix the problems there. The only way to do that was to settle it quickly, instead of having the contest linger on and on and not have those problems corrected.

Senator MURRAY. So, it forces settlements, as well.

Mr. BARAB. Right.

Senator MURRAY. And do workers continue to go to work if there is a safety violation, and that violation is being contested, and it hasn't been repaired or fixed or changed?

Mr. BARAB. Yes, yes. Because, again, we can't, by law, force them to fix a problem. Unless it's an imminent danger, we can't force them to fix the problems that we've identified in our citations, while there is a contest going on.

Senator MURRAY. So, is it safe to say that workers are going to work in unsafe conditions, simply because something's being contested and somebody's deciding, somewhere?

Mr. BARAB. Yes.

Senator MURRAY. OK. You mentioned, a minute ago, the NEP program. That was actually established after the BP Texas City refinery accident, in 2005, where there were 15 deaths and 170 injuries. And it was really intent on really targeting some of these petroleum refineries and focusing on this. After that program was established, the work in Washington State, at the Tesoro plant in Anacortes, they were inspected. They were cited for 17 serious violations in April 2009. And then the tragic accident happened on April 2, 2010. Seven workers died.

I wanted to ask you, Do these inspections happen at every oil refinery in every State, including States with State-run OSHA programs?

Mr. BARAB. I'd say, in general, yes. Our NEPs have not, until—we just changed our policy—but, generally, or very often our NEPs did not require State participation. They invited State participation, voluntary participation.

Senator MURRAY. Do they now require it?

Mr. BARAB. We've just changed that policy. We're now requiring States to participate in all national emphasis programs.

Senator MURRAY. So, it's no longer discretionary; you're requiring them to——

Mr. BARAB. Well, for the ones, moving forward. Now, the ones that are already in operation, it's still optional.

Now, for the refinery NEP, it turns out that all the States, I believe, with the exception of Alaska, have State-plan States that have refineries in them, with the exception of Alaska, have either decided to participate in the NEP or have an equivalent program—more-or-less equivalent program to our NEP.

Senator MURRAY. And does that require them to inspect the entire facility?

Mr. BARAB. No, we do not inspect the entire facility; neither we, nor they do. These are enormous facilities. These inspections are extremely resource-intensive. What we do, and what the States do, as well, is, we'll go in and we'll do a preliminary overview of the facility and, based on a number of different factors, decide to inspect one or two or three of the units in each facility, and based, again, on a number of different criteria, including how hazardous they seem to be, whether there've been any preexisting incidents, whether the workers there have informed us of any problems there. And we will do our inspections there. We don't really have the capacity to do a wall-to-wall inspection——

Senator MURRAY. You don't.

Mr. BARAB [continuing]. Of every refinery.

Senator MURRAY. And so, real quickly—my time is out—do you know if the Naphtha unit, where it was believed the fire started in the Anacortes Tesoro refinery, was inspected during the inspection, while enforcing the NEP in April 2009?

Mr. BARAB. From our information, yes, it was part of the inspection that they did at that refinery. Now, whether they inspected the exact thing that caused the problem, the explosion there, we're not sure, because that investigation hasn't been done yet.

Senator MURRAY. OK. Because, it's my understanding that it was not inspected.

Mr. BARAB. From what we hear, it was part of the inspection.

Senator MURRAY. OK. Thank you.

Senator Isakson.

Senator ISAKSON. Thank you for attending, today. I appreciate your work.

First of all, you have no jurisdiction outside of 3 miles on offshore drilling. Is that right?

Mr. BARAB. Basically, yes. There are some small exceptions.

Senator ISAKSON. MMS has that responsibility?

Mr. BARAB. MMS and the Coast Guard, yes.

Senator ISAKSON. Do you know whether MMS and the Coast Guard ever consulted with you all, or whether you all consulted with them, with regard to safety requirements on deepwater rigs?

Mr. BARAB. I'm pretty sure we did not.

Senator ISAKSON. OK. But, you do have jurisdiction inside of 3 miles. Is that correct?

Mr. BARAB. Not really. Technically, we do have jurisdiction, but there's a clause in the Occupational Safety and Health Act, paragraph 4(b)(1), that gives agencies that have authority over regulating certain industries the ability to also—they essentially pre-

empt us. And the MMS has asserted jurisdiction over health and safety off of the offshore rigs. So, we're essentially preempted from those, as well.

Senator ISAKSON. So, your responsibility starts at the beach.

Mr. BARAB. Basically, yes.

Senator ISAKSON. Well, in this particular incidence, that is an important issue, because that's where a lot of the cleanup's taking place.

I understand OSHA specifically singled out the person BP had put in charge of safety for criticism, and strongly suggested that he be replaced. Has he been replaced?

Mr. BARAB. We weren't trying to identify any individual. Our problem was a more systemic problem. There was no one in place—there was one person we were dealing with, but BP had no one in place, really, that had the authority to cover health and safety on the whole Gulf Coast.

We were basically dealing with individuals.

Senator ISAKSON. In terms of the cleanup.

Mr. BARAB. In terms of the cleanup.

Senator ISAKSON. Do they have a person in charge of it now?

Mr. BARAB. Yes, they do.

Senator ISAKSON. OK. Have you issued any—do you know if there have been any citations issued on the cleanup?

Mr. BARAB. No, there haven't been.

Senator ISAKSON. There have not. OK. Do you think there should be some sort of coordination between MMS and OSHA with regard to safety? MMS has other issues, other than safety, obviously, in dealing with offshore drilling. Do you think there's any—do you think it would be good or important for OSHA to have a safety role within MMS?

Mr. BARAB. Well, I think any—or any government agency that deals with similar issues, there should be a lot more coordination than there has been. And we are trying to do that now. For example, on the cleanup, we're working with a number of different agencies on addressing the cleanup.

We're also trying to work—in terms of addressing issues in refineries—we're trying to work much more closely with EPA, which has important information. So, I would certainly think that would be a good idea.

Senator ISAKSON. Well, the reason I point it out—oftentimes, when you have a tragedy take place, we look back at what we should have done and don't look forward to what we have to do. I think the Chairman and I both feel like we'd love to be part of an effort that sees that this never happens again. So, as we try and deal with the byproducts on the disaster—the tragic loss of life, the injuries, the damage to the environment and the ecology—we also need to see what it is we need to put in place as it relates to deepwater drilling and safety so that, to the maximum extent possible, the tragic loss of life goes to zero, as well as injury, while we still have a safe system of extracting injury.

So, I hope the agency—sometimes, and we're bad about it in the Senate, you take an issue, and you talk about what has happened, but you don't talk about what needs to happen. Then something else happens, and public attention goes away, and you miss some

opportunities to make some fundamental changes that will make a difference.

I would encourage the agency to think—as you try and deal with safety violations in the cleanup in the Gulf, which I know is your responsibility—or on the beaches and the estuaries—also, as you're doing that, use it as a learning experience to help us know what it is we need to put in place, either in a regulatory regimen or a legislative regimen, that can help see to it that this never happens again.

Mr. BARAB. Yes. Thank you.

Let me clarify one thing, also, about your reference to the beaches. Again, we don't have jurisdiction over the rigs within 3 miles, because we've been preempted. In terms of the cleanup, though, we do have jurisdiction over these vessels of opportunity—the boats that are going out. And we've been on those boats, monitoring the air. So, we do have that——

Senator ISAKSON. Good.

Mr. BARAB [continuing]. Our jurisdiction, in terms of cleanup workers, does not stop at the beach.

Senator ISAKSON. Good.

Again, thank you for your testimony today.

Senator MURRAY. Senator Hagan.

Senator HAGAN. Thank you, Madam Chairman.

Mr. Barab, in your testimony, I noticed that the oversight of the oil and gas industry is highly fragmented. And in addition to OSHA—and some of this has come up within the Department of Labor—the oil and gas industry is also regulated, in part, by several other agencies, including the Coast Guard, within the Department of Homeland Security, and the Minerals Management Service within the Department of the Interior. So, from a format question having to do with employees, when workplace safety issues is raised, who should the employee turn to? How do the agencies determine who takes the lead on a claim? And then, who processes the claims? And then, how do these different agencies actually coordinate with one another?

Mr. BARAB. Well, again, the agency that has authority over health and safety of workers is the agency that receives the complaints from workers, and should be addressing, also, the health and safety problems at that facility. So, in this case, in the case of the Deepwater Horizon, that would have been the Mineral Management Service, although there's some shared jurisdiction, also, with the Coast Guard there, as well.

Obviously, for things under our jurisdiction, we receive the complaints, and we address the problems at those facilities.

And we are trying—this is a general administration push to reduce the siloing, and actually have much more interaction between different agencies. And I think we've been successful at that. Obviously, there's a ways to go to increase the interactions between the agencies.

Senator HAGAN. So, you say you've taken these silos apart and you're able to work together.

Mr. BARAB. Well——

Senator HAGAN. What have you done?

Mr. BARAB [continuing]. We're trying to do that. It's not as easy said as done.

Senator HAGAN. What have you accomplished so far?

Mr. BARAB. Well, actually, with that Mineral Management Services, I'm not sure that we've had much contact up until now. We have been—again, coming back to refineries, we are trying to figure out a better way to target dangerous refineries so that we're not inspecting the ones that don't have any problems, and we are going to the ones that do have problems. One of the ways we're trying to do that is to get information from EPA. EPA has a whole system where they also look at refinery safety—more from the public standpoint, but they collect a lot more information, in terms of releases and leaks, than we do. So, we're trying to work very closely with them to get some of that information that will indicate where we need to go and inspect.

Senator HAGAN. So, do the employees of these different areas know which agency to actually turn to with a complaint?

Mr. BARAB. I hope so. One of the major pushes that we've done under this administration, within OSHA, is just to make sure that workers under our jurisdiction know who we are, how to get in touch with us—we put a particularly special focus on reaching immigrant workers and other hard-to-reach workers who don't have unions, may work for very small companies. We've got all kinds of little cards and public service announcements, making sure that they know that we exist, that we are there to look at their health and safety, and that they can call us if they have a problem.

Senator HAGAN. Do you know about the Minerals and Management Service?

Mr. BARAB. I don't. I'm sorry.

Senator HAGAN. Also in your testimony, you noted that in the past 4 months, alone, at least 58 workers have died in explosions, fires, and collapses at refineries, coal mines, an oil drilling rig, and a natural gas-fired power plant construction site. And obviously this is certainly an alarming statistic.

What are OSHA's processes for establishing standards for workplace safety in the oil and gas industry, and how often do you review them?

Mr. BARAB. Well, the standard-setting process is probably a subject for another hearing. It's not easy to set standards; it's not easy to update standards, unfortunately. And that is a focus of this administration, particularly Dr. Michaels, in trying to speed that process up.

We feel our Process Safety Management standard is an excellent standard. There are certainly issues with it that have come up through court interpretations, other issues that have been raised, for example, by the Chemical Safety Board report, where it could stand some improvement.

One area that we are particularly lacking, I think, is if you go into oil- and gas-well production on land. We don't have a specific standard for that. They're not covered by our Process Safety Management standard. So, we use a number of other standards, including our general duty clause, which kind of covers everything that's not covered by a specific standard, to enforce safety and health con-

ditions on those sites. But, that is one area that probably could use some work, in terms of better rules and regulations.

Senator HAGAN. Do you look at other standards that are around the world on these refineries?

Mr. BARAB. Yes, we do. We look at other standards around the world. We also look at some of the States. Some of the States have different standards than we do, and sometimes more effective standards than we do. I think you're going to hear, for example, from Contra Costa County. But, both that county and the State of California have different Process Safety Management regulations, slightly different than we do, and there are certainly things we can learn from that.

Senator HAGAN. OK. I also noticed a recurring theme in the testimony, and that has to do with the notion of a workplace culture or a culture of safety. And how important is it for employers to establish a culture of safety at the workplace? And what can we do to encourage employers not just to deal with specific safety concerns when they arise, but to certainly establish an overall culture of safety so that the small issues don't turn out to be the big problems?

Mr. BARAB. Right. Yes, the issue of workplace safety culture is an interesting one. I think that was one of the definite failures that we pointed out, that the Chemical Safety Board pointed out, that the Baker panel pointed out at BP, for example.

But, the companies need to understand—and some are better than others—that workplace safety culture is not just exhorting everybody to think "safety first." Workplace safety culture is really a combination of all the processes and rules and practices that go on in an organization. And that's what we're really trying to push, both through our Process Safety Management standard, in terms of trying to use that really to push the whole concept of an overall culture forward, but also in terms of any kind of compliance assistance we're doing, speeches we're doing, working with other organizations, such as the Chemical Safety Board, such as EPA, to try to make sure that these companies understand the value of a real workplace culture.

Senator HAGAN. Thank you, Madam Chairman.

Senator MURRAY. Senator Bennet.

Senator BENNET. Thank you, Madam Chairman.

And thank you for your testimony today. We deeply appreciate it.

I realize that OSHA has no formal oversight role with regard to offshore drilling. But, one of the things that troubles me the most about the Transocean situation are the allegations that safety concerns from workers were ignored or brushed under the rug. And I wonder if you could share with the committee how such allegations are ideally investigated and dealt with in the onshore oil and gas context. And what work needs to be done to make sure that, when workers do see a dangerous situation and raise concerns, that they're able to do it free from intimidation and in a way that actually gets to the regulators' attention?

Mr. BARAB. Yes. Thank you for that question. It's an extremely important subject, on the whole idea of workers being free to com-

plain about their health and safety problems and to exercise their rights.

We have a very limited number of inspectors, and one thing we've found over the many years is that OSHA does not work unless workers participate. And if workers don't feel safe to participate, they're not going to do that.

Unfortunately, the whistle blower part, paragraph 11(c) of the Occupational Safety and Health Act, is very old. It's as old as the act itself; almost 40 years old. And if you look at all the whistle blower laws that have been passed since then, ours is probably about the weakest. That's another part of the Protecting America's Workers Act that would be significantly improved, should it be passed.

But, especially in refineries it's important, because obviously in refineries, as I mentioned in my testimony, you want to learn from your mistakes; you need to learn from the close calls and the near misses. Unless workers feel free to report up through management about those close calls that other people may not have seen, there's not going to be any learning going on. So, it's extremely important, particularly in refineries, and anywhere where you're dealing with process management problems, for workers to feel protected, to feel safe to actually exercise their health and safety rights.

Senator BENNET. On a spectrum, how would you evaluate where we are right now, in terms of people feeling that way?

Senator BENNET. It's hard to imagine how the system would actually even work unless that could happen.

And, by the way, even for those companies that are very well intentioned and really want to do the right thing, if they're not hearing from the people that are closest to the problem, that's a real—it would seem to me—a real issue.

Mr. BARAB. Yes. And we are, very unhappy with the state of whistle blower protection under our law. I just testified in the House a few weeks ago, and somebody testified there, saying that he basically had a good claim. We found in his favor. And, because of the intricacies of our law, we couldn't really do anything to force the employer to actually make him whole again.

And, as I said there and I'll say now, I'm outraged that, at this point, in the year 2010, 40 years after the Occupational Safety and Health Act was passed, workers still have to be afraid to exercise their rights under the law.

Senator BENNET. Slightly different but related point on the question of how we—as we think about OSHA's regulations—how we improve stakeholder engagement in the development and implementation of those regulations—how are employers and employees currently engaged in those discussions? Are there ways that we can better empower workers in those discussions? And what are we doing—to go back to Senator Hagan's question—to do what we can in the development of these regulations to build a culture of compliance and a culture that we can all be proud of?

Mr. BARAB. Right. Well, as I said, the law doesn't really work unless workers are involved.

One of the initiatives we're taking—and Dr. Michaels announced this during our last regulatory agenda—is an injury and illness prevention program that every employer would have to have. That

would not only cover hazards that are covered by standards, but also hazards that the employer recognizes that aren't necessarily covered by a specific standard.

One of the key components in that would be worker participation. You need to have worker participation anytime you're looking at health and safety hazards, because the workers on the front lines are really the main experts there. So, they need to have a vehicle for participation. And, as I said, they need to feel safe in that.

Part of workplace culture is a culture where workers do not have to fear their participation in the health and safety programs in those companies, where they can feel safe to complain about health and safety problems to their supervisor, to upper management, and to OSHA, without being retaliated against.

Senator BENNET. Thank you, Madam Chairman.

Thank you.

Senator MURRAY. Senator Franken.

Senator FRANKEN. Thank you, Mr. Barab.

Let's just follow up on that, first. Because, you're saying the law doesn't work unless workers are involved. And yet, you seem to be suggesting that you're not happy with the state of whistle-blower protection. What happens to workers in these refineries who sound warnings? Do they get fired?

Mr. BARAB. Well, I can't speak to any specific case in the refineries, but, in general, we've seen a lot of workers in general industry, yes, being fired or discriminated against for exercising their health and safety rights.

Senator FRANKEN. OK. Well, I'm a cosponsor and strong supporter of the Protecting America's Workers Act. And it has whistle blower protections in it. And I think these are absolutely vital, and that we get this done as soon as possible, and protect people, so they can come forward. You'd think it would be in the industry's interest to have their workers come forward and take part in this.

It's been mentioned that the statistics about workplace injuries do not reflect contract workers. I want to ask you about this. I understand that it's the case that a refinery can contract out its most dangerous work. What is the justification for excluding these contractors in the statistics about workplace injuries? And what could be done to change the way data is collected so that these numbers more accurately reflect the injuries and deaths that actually occur?

Mr. BARAB. Yes. Generally, if you look at the BLS statistics, injury, illness, and fatality statistics are kept by what was SIC codes and now are NAIC's codes—North American Industrial Classification codes—and those run by industry. So, when you're in a refinery, the refinery part of that—the refinery owner will report injuries and illnesses for that refinery's employees. If the refinery hires a contractor—and in many refineries, a very large number, sometimes a majority, of workers on a refinery will be contractors—they don't go into the refinery contractor—the refinery code; they'll go into some kind of contractor code, which is not associated with refineries. So, when BLS looks at the statistics—injury, illness, fatality statistics for the refining industry, it won't take into account all of the injuries, illnesses, and fatalities that happened with the contractors.

And a good example of that was BP; all 15 workers killed in that refinery were contractors. So, BP's fatality rate looked the exact same the day before the explosion as it did the day after the explosion.

Now, that has implications for us, because, to a certain extent, we also target our inspections. We're going to change that, but we've been targeting our inspections based on these injury and illness statistics for the refining industry. And if you just look at the narrow refining industry code, and you just look at the personal health and safety—slips, trips, and falls—they look pretty good. It won't take into account, obviously, the injuries and illnesses that then happen to the contractors.

One thing we're working on, and trying to see if we can change this through regulation, is requiring a site log for refineries and, for that matter—it's not just refineries—steel mills, chemical plants—where, instead of just getting the log—employers are required to keep these logs—instead of just getting the log, for the refinery owner, that contains the refinery's employees, we get their log for the entire site, which means we get the injuries, illnesses, and fatalities for everyone actually working on that site—the refinery owner, as well as the contractors.

Senator FRANKEN. Well, that seems to make perfect sense, and seems to me crazy that we haven't done that sooner, because if they can point to their safety record, and if the BP Texas plant can say, "No one—none of our workers have been killed" even though 15 people were killed there.

Mr. BARAB. Exactly.

Senator FRANKEN. So, those statistics, then, are not next to useless, they're actually useless. So, we have a system where we're relying on absolutely useless statistics.

Mr. BARAB. Yes, I wouldn't call them completely useless, but they certainly aren't as useful as they could be, yes. Absolutely.

Senator FRANKEN. Well, I think it's pretty useless when 15 people were killed, but they can write down that no one was killed.

Mr. BARAB. Right.

Senator FRANKEN. Another issue I've found very frustrating is the problem of contesting all safety conditions. We heard about it in the full committee, just a couple weeks ago, about how Massey mines had received hundreds of citations, but, because they were contesting them, they're not required to correct the dangerous conditions. This provides an incentive for them to contest everything, doesn't it?

Mr. BARAB. It does. It does. The contest rate is not nearly as high as it is in the mine safety area. But, certainly it's high enough, and it happens enough that it is a major problem, again, for making sure that——

Senator FRANKEN. As the Chair mentioned, it gives you incentive to settle.

Mr. BARAB. Exactly. Exactly.

Senator FRANKEN. OK. Well, how can we fix the law to eliminate the perverse situation?

Mr. BARAB. Well, the Protecting America's Workers Act actually would provide OSHA with the ability to force companies to abate hazards even while they're being contested.

Senator FRANKEN. Good. Thank you.

Thank you, Madam Chair.

Senator MURRAY. Thank you, Senator Franken.

And I just would mention the issue with the contractors being cited separately is probably why we saw the report that Deepwater Horizon had a group of BP executives on board celebrating the crew's safety achievements on the day when the tragic accident occurred. And we've seen that in other places, as well.

Senator Casey.

STATEMENT OF SENATOR CASEY

Senator CASEY. Thank you, Madam Chair.

And, sir, thank you for your testimony and your commitment. I know it's not easy to serve in government agencies at a difficult time, and we're grateful for your work.

I wanted to, first of all, set forth a predicate for my question and then ask you, maybe, to wear two hats, not just the hat that you wear every day as Assistant Secretary for Occupational Safety and Health, but also to give some advice. I want to localize it to Pennsylvania, and shift the focus or emphasis on a particular problem we're having in our State.

We have a tremendous opportunity in our State that comes from Marcellus Shale and the gas that comes from that, an energy source, and the economic benefits from that.

I have real concerns about how fast it's moving, and I have a bill that speaks directly to the hydraulic fracturing concerns that I have. There's also worker safety issues, as well.

I realize you don't have jurisdiction that directly applies to this, but I'd ask you this. In the context of a recent experience, just within the last week, we had a blowout—I want to be precise, it wasn't an explosion—no one died and no one was injured, but, it was a blowout that potentially, I should say, caused at least some environmental damage. But, what arose in the aftermath of that was a whole series of problems: expertise having to be brought in from Texas to Pennsylvania, hours waiting for them to get there—so, you don't have local expertise; access to the site; potential environmental compromise and contamination. So, a whole series of questions for local officials, State officials, and maybe Federal.

I just want to ask you about—you made reference earlier to—in areas where you might not have direct jurisdiction—general—what you called, I think, a general duty clause. I wanted to ask you about that, if it applies at all.

But, I guess I really wanted to focus on—can you give us some guidance or advice on a couple things: First of all, if there is no Federal jurisdiction in the context—in that context of a hydraulic fracturing situation, is there statutory changes we could make to help?

And third, in the Department of Labor, are there services you can provide to a State that may not involve oversight, but you may be able to help with training or expertise or other services?

I know that's a lot in—you've got 2 minutes and 11 seconds.

Mr. BARAB. Yes, let me clarify. First of all, I didn't mean to say that we don't have jurisdiction over these rigs on land; we do have

jurisdiction over them. What we don't have is a specific standard that applies to that industry——

Senator CASEY. OK.

Mr. BARAB [continuing]. What we call a "vertical standard." Now, we have a number of standards that may apply to the different operations within those operations. We also have our general duty clause. Where we don't have a specific standard, we can still use that. And there are, again, some regulatory holes there, because we don't have a specific regulation.

Probably one of the biggest problems we have, in terms of enforcement in these rigs, is that some of them are very small companies. There is a rider on our legislation that says that we basically can't—unless there's a fatality or a catastrophe—we can't go in and inspect those, if they're under 10. And it's very upsetting for us, because, as you know, the fatality rate in these kind of rigs in these operations are very high. We're not able to go in there and really do the kind of preventive work that we'd like to do.

So, that's a problem. And the fact that we don't have a specific standard is somewhat of a problem, which isn't to say that we can't get in there and do the education and enforcement.

Senator CASEY. I just want to stop you for a second—that particular problem would need to be—if it were cured—does it have to be statutory? Or can you do it by way of regulation?

Mr. BARAB [continuing]. The 10 and under?

Senator CASEY. Right.

Mr. BARAB. Yes, that's a rider that's been a rider for a long time on our appropriations bill.

Senator CASEY. OK. I guess I'm asking for advice, as well as information, about services—is there anything the Department of Labor can do to provide help as it relates to training at the site or training at sites like that?

One of the fundamental problems we had was, you had emergency workers getting there, having difficulty getting there because of the location of it, but then not having the training that could provide some help while they're waiting for the plane to land from Texas with real expertise. So, I don't know if you have any suggestions——

Mr. BARAB. We have a number of standards that deal with emergency response situations like that, that they are supposed to be complying with. We also have a very vigorous compliance assistance program, where we have fact sheets and manuals and things that we are more than willing to get out to anyone who needs them.

We also have a, unfortunately, fairly small program of worker training grants, called our Harwood Training Grant Program, that we use to mostly give to nonprofits, which could be industry associations, labor unions, and people like that, that deal with these industries. So, there are a variety of different ways, in addition to enforcement, that we address these problems.

Senator CASEY. Thanks very much. I'll probably be sending you some follow ups on this. Thank you.

Mr. BARAB. OK, good.

Senator MURRAY. Mr. Barab, I just have one other question, broadly. The voluntary protection program that's in place, which I

understand the need to do that, but I wanted to ask you—Are all the participants in that exempt from all planned or programmed inspections during the refinery and EP inspections?

Mr. BARAB. Yes.

Senator MURRAY. They are.

Is it true that Federal OSHA doesn't inspect VPP member sites? And why would companies enrolled in this program be exempt?

Mr. BARAB. When companies are in the process of enrolling, there is a thorough inspection of the facility. After that, however, every, I believe, 2 or 3 years, the companies come up for renewal. And then, in this case, there are a number of questionnaires and questions that they have to answer about their process safety management system. But, at this point, we do not go back in and inspect.

Now, we are taking another look at that.

Senator MURRAY. So, isn't that just a real incentive for people to get into this program? Because, in an industry that obviously has got some egregious safety records and some dangerous situations, to get in the program, never inspected?

Mr. BARAB. Well, exemptions are certainly an incentive for getting in the program. However, at least when they get into the program, we have a fairly rigorous program of making sure that they are safe. Now, what happens, 2, 3, 4, 5 years down the line, they give us a lot of information, but we actually don't go back in and inspect—unless there's a fatality or a catastrophe or we get a worker complaint; we can go back in. But, they're not part of the NEP, as it stands right now.

Now, we are looking at that situation again. And we are going to at least go into a few of the VPP sites in the future. Our problem right now is resource issues. We are still strapped tight, trying to finish up the refinery NEP right now. We just don't have the resources to do that. But, that's a concern of ours, because there have been incidents in the VPP plants.

Senator MURRAY. Well, if you could get back to me, for the record, not answer right now, how many inspectors you do have and what the cost would be in order to provide the inspections that you believe are necessary.

Mr. BARAB. OK.

Senator MURRAY. Senator Isakson.

Senator ISAKSON. Thank you, Madam Chairman.

Two points I want to try and correct the record on. And if I'm incorrect, I want you to correct my incorrectness.

When Senator Franken was asking the question about whistle blowers, is it not, in fact, true it's against the law to fire or punish a whistle blower?

Mr. BARAB. It is against the law, yes.

Senator ISAKSON. OK. So, that's punishable now, in answer to the gentleman's question. We haven't been asleep at the switch on that.

And the other one, with regard to the MSHA comments on immediate correction—under MSHA's authority, they do have the authority to immediately mandate compliance, and they also have authority to shut down a mine. Now, the contesting of MSHA can

only be the amount of the fine, not the correction. Is that not correct?

Mr. BARAB. I'm not an expert on the mine safety law.

Senator ISAKSON. Well, then I'll depend on my answer until somebody corrects me.

Mr. BARAB. OK.

Senator ISAKSON. But, I think that's correct, because the Chairman and I did the MINER Act a few years ago and—when we had the tragic thing at Sago—and MSHA does have the ability to immediately mandate compliance. The company can't contest the compliance. They can contest the fine, but that happens later.

Thank you.

Mr. BARAB. OK.

Senator MURRAY. If there are no more questions——

Senator FRANKEN. Well, let me just follow up on Senator Isakson's question, because he's saying that it's against the law for someone to fire a whistle blower. But, in your testimony, you seem to think there's some problem here. Is there some space between the law and reality that we should know about?

Mr. BARAB. Yes. You obviously have to—the worker who feels he or she has been discriminated against obviously has to prove that case. There are a number of criteria that they have to use to prove that case. There are a number of deadlines. There are a number of appeal procedures.

The problem with the Occupational Safety and Health Act, 11(c), is that the burden of proof for the employee is extremely high. The deadlines are very short. For example, you only have, I believe, 30 days to actually file a complaint, whereas you may not even know that it exists at that time. They have very, very limited appeal rights if the decision goes against you; very limited rights to get the evidence from the employer, also.

There have been a number of other whistle blower laws that have been passed since 1970 that provide workers with many more rights, in terms of lowering the burden of proof, giving them more time to file complaints, giving them more ability to appeal the complaints, than we have right now under the Occupational Safety and Health Act.

Senator FRANKEN. So, just reporting from your own experience that there is a sense of intimidation that does affect whistle blowers, that it makes people think twice about becoming whistle blowers—and this is just your judgment of your experience—and that would have an impact on worker safety. Am I right in drawing those conclusions?

Mr. BARAB. Yes, absolutely. I've had a long career in this field on a variety of different jobs—labor unions, different government agencies. It's kind of a constant, that the workers are naturally intimidated, unless they feel safe, or even encouraged, hopefully, to report problems.

Senator FRANKEN. So, it seems to me that what's important here isn't that there is a law. The importance is the reality of how strong the law is and what the repercussions of that are. And it seems that the repercussions of that are less-safe refineries and the kinds of tragedies that we've seen.

Mr. BARAB. Yes.

Senator FRANKEN. Thank you.

Senator MURRAY. And I would just add to Senator Franken's comments, too, just watching news reports of some of the workers who testified, or who are talking to the news media, are very concerned that when the attention moves away from this issue, as we always tend to do here, that their jobs are at risk. So, whether real or perceived, that is a concern for workers speaking out. So, it's something we have to comprehend as we go through this.

Mr. BARAB. Yes. And most work—we've been talking about the big accidents here, the big explosions at BP, there have been a number of other ones—Senator Hagan, you had your West Pharmaceuticals and—these are the ones that make the big headlines. The fact is, 5,000 workers die in this country every year. Most of them die one at a time, there's no publicity—maybe a very short article. So, it's not like there are all kinds of national attention that's going to protect them; they're just out there by themselves. And these are the ones that are killed; we're not even talking about the ones that are injured or the ones that just barely escape.

Senator MURRAY. OK. Well, Mr. Barab, we really appreciate your testimony today.

I would ask that you would remain at the table, in case we have any more questions for you when we hear from other panelists.

With that, I would like our second panel to join us here at the table, and welcome them all, thank them for coming today to testify for us. And if you would move forward and sit at the front, here, I will introduce you as you are moving forward.

We have, Kim Nibarger who is the health and safety specialist for the United Steelworkers in Pittsburgh, PA. Mr. Nibarger happened to be also on the scene of the two fatal accidents in refining industries in my home State of Washington; Randall Sawyer, who is the director of the Hazardous Materials Program for Contra Costa County, in California, that has been mentioned up here; and Charles Drevna, who is the president of the National Petrochemical & Refiners Association.

As with the first panel, I would like to ask all of you to keep your opening remarks to 5 minutes. And your full testimony will become part of our record.

So, Mr. Nibarger, we will begin with you.

STATEMENT OF KIM NIBARGER, HEALTH AND SAFETY SPECIALIST, UNITED STEELWORKERS, PITTSBURGH, PA

Mr. NIBARGER. Madam Chair, members of the committee, thank you for the opportunity to appear before you this morning.

The United Steelworkers represents about 850,000 members in the United States and Canada employed in virtually every industrial segment of the workforce. Among oil refineries, the USW represents about 30,000 workers employed at more than 20 companies in the United States.

I had just arrived at my parents' home in Anacortes, WA, in the early morning of April 2 this year, when I heard an explosion and knew immediately that something bad had happened at one of the local refineries. This was of particular concern to me, as I was an operator at the now Shell refinery in November 1998 when we had a releasant fire that killed six of my coworkers. Little did I know

that the sound I had just heard was signaling an even more deadly accident.

Since the seven fatalities at the Tesoro refinery, there have been fires and explosions reported at 12 U.S. refineries, as well the fire and explosion of the Deepwater Horizon drilling rig. There have been 29 fires and explosions reported in refineries so far this year. In the majority of these, no one was hurt, but that was primarily a matter of luck. Meanwhile, these refinery accidents have caused nine fatalities and sent at least five workers to the hospital.

The details of these accidents are frightening and instructive, but it would take far too much time to recount them all this morning. Instead, I want to concentrate on fixing the problem. Lessons not learned are failures we must never forget. The high number of fatalities at Tesoro was a result of too many people being where they didn't need to be. One of the findings of the U.S. Chemical Safety Board BP Texas City accident was that there were unnecessary people in the area during a startup. Startup is an especially hazardous time in a refinery. There are several other accidents where this was true, yet we continue to have people in an area that they don't need to be, at a time they don't need to be there.

As the result of another CSB recommendation from BP Texas City, we have seen trailers, for the most part, moved out of predicted blast zones, only to be replaced by tents, which are allowed by a newly-written API-recommended practice.

Tougher standards. The oil industry is basically self-regulated. Through a consortium of oil companies known as the American Petroleum Institute, recommended practices are written and adopted—they're voluntary—to control safety in the oil industry.

I think a prudent individual understands that when you write the rules to govern yourself, you typically are pretty lenient. It's like the fox guarding the henhouse.

OSHA needs to exert more control over the standards for health and safety in the oil industry. The Process Safety Management standard must be updated and made stronger. A new measurement of process safety performance needs to be developed by OSHA for this industry. The traditional OSHA 300 injury log, which tracks personal injuries, like slips, trips, and falls, is not an indicator of process safety.

In order to accomplish these objectives, OSHA needs to have their funding increased. By using leading process safety indicators, such as activation of pressure relief systems, you are looking at what in the process was out of the operating parameter to cause or allow an excursion. This gives you the opportunity to go back and correct a system failure.

Rigorous regulation. The Protecting America's Workers Act, legislation that is currently before Congress, must be passed. We hear many complaints about OSHA not doing enough, but one of the biggest problems was the limit to what OSHA can currently do and the limited response required of the company to OSHA citations.

OSHA has instituted a National Emphasis Program for oil refineries. The national program has completed 55 inspections, but only 14 of those have been settled. The other inspection citations have all been contested by the company issued the penalty. This means that the company is not required to take any action to abate the

hazardous situations identified that has a potential to harm workers in a community. In most cases, a contest period results in citations being negotiated away and fines reduced. Where is the incentive to fix items, or even follow the rules, when it costs so little, or requires no action on the company's part, if they do not follow the rules?

To sum up, we are not seeing new causes of accidents in the refining sector. The causes of accidents are the same, time and time again. We need an increased commitment to mechanical integrity, assuring that we're inspecting the right equipment in their correct locations at the proper times.

It's like changing oil in a car. When you have a new automobile, you're cautious about changing the oil at 3,000 miles. When you have a 10-year-old car, you don't change the oil at 10,000 miles. It's more critical, as the automobile ages, that proper maintenance schedules are maintained. This is not the situation we are experiencing in the refining sector. These plants are getting older; and yet, over the years, the oil change—in this case, the turnarounds—are being pushed out further and further. Not the most reliable way to treat an old car.

Until there are controls in place to make it less profitable to disobey the standard, these actions will continue. Only when the consequences of allowing workers to be injured or killed on the job are severe enough will companies take serious action to change their safety culture.

Thank you for giving me the opportunity to testify this morning.

[The prepared statement of Mr. Nibarger follows:]

PREPARED STATEMENT OF KIM NIBARGER

Madame Chair and members of the committee, thank you for the opportunity to appear before you this morning. My name is Kim Nibarger. I am a member of the United Steelworkers (USW), and a Health and Safety Specialist for our International Union's Health, Safety and Environment Department in Pittsburgh.

The USW represents about 850,000 members in the United States and Canada employed in virtually every industrial segment of the workforce—steel of course, but also, paper, mining, aluminum and other nonferrous metals, chemicals, plastics, tires and rubber, glass, health care, and petrochemicals. Among oil refineries, the USW represents about 30,000 workers employed at more than 20 companies in the United States.

It was nearly 3 years ago that I was last here, speaking on supposed Lessons Learned from the horrific accident at BP, Texas City. I spent a majority of my time speaking on lessons not learned or as a colleague of mine has said, "failures we must never forget."

I had just arrived at my parent's home in Anacortes, WA in the early morning of April second this year when I heard an explosion and knew immediately that something bad had happened at one of the local refineries. This was of particular concern to me as I was an operator at the now Shell refinery in November 1998, when we had a release and fire that killed six of my coworkers. Little did I know that the sound I had just heard would signal an even more deadly accident.

The seven fatalities at the Tesoro refinery in Anacortes, WA is the latest multi-fatality accident in the refining industry. But since then there have been fires and explosions reported at 12 U.S. refineries as well as the fire and explosion of the *Deepwater Horizon* drilling rig. There have been 29 fires and explosions reported in refineries so far this year. In the majority of these no one was hurt but that was primarily a matter of luck. Personnel were not in the area at the time or were able to get to a fuel isolation point quickly, for example. Meanwhile these refinery accidents have caused nine fatalities and sent at least five workers to the hospital.

The details of these accidents are frightening and instructive but it would take far too much time to recount them all this morning. Instead, I want to concentrate on fixing the problem.

LESSONS NOT LEARNED, OR AS I SAID, FAILURES WE MUST NEVER FORGET

The high number of fatalities at Tesoro was the result of too many people being where they didn't need to be. One of the findings of the BP Texas City accident was that there were unnecessary people in the area during a start-up. Start-up is an especially hazardous time in an oil refinery. There are several other accidents where this was true, yet we continue to have people in an area that they don't need to be at a time they don't need to be there.

This is just one example of recurring actions that have led to accidents, injuries and fatalities. We still see releases and fires from the continued use of atmospheric vents on process units. Operating procedures are not being reviewed and updated to assure that the correct steps to follow are in place. The management of change (MOC) process (required to be performed for any change not in kind) is not forceful enough to identify what may go wrong when a change is made; they revolve more around justifying making the change.

As a result of another U.S. Chemical Safety Board (CSB) recommendation from BP Texas City, we have seen trailers for the most part moved out of predicted blast zones only to be replaced by tents which are allowed by a newly written API Recommended Practice.

TOUGHER STANDARDS

The oil industry is basically self-regulated. Through a consortium of oil companies, known as the American Petroleum Institute (API) recommended practices are written and adopted that are voluntary to control safety in the oil industry. They argue that this gives them the flexibility to upgrade to new technology without having to rewrite the rules, but rarely does the industry upgrade to current recognized and generally accepted good engineering practices (RAGAGEP) as required.

I think a prudent individual understands that when you write the rules to govern yourself, you typically are pretty lenient. It is like the fox guarding the hen house; it might not stop a few chickens from disappearing.

Process safety management (PSM) is a standard in the Code of Federal Regulations (CFR) found in 29 CFR 1910.119, which is covered in a little over 3 pages. The standard was developed with the intent of preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals. It addresses 14 elements and is termed a performance-based standard because the employer writes their own plan on how to achieve the objective defined.

OSHA needs to exert more control over the standards for health and safety in the oil industry. The process safety management standard must be updated and made stronger. A new measurement of process safety performance needs to be developed by OSHA for this industry. The traditional OSHA 300 injury log which tracks personal injuries like slips, trips and falls is not an indicator of process safety.

My refinery, like so many others including BP Texas City, had a very low personal injury number just prior to killing six workers. The expanded use of contractors in the facilities is also skewing the numbers; BP Texas City did not see their injury rate number go up after the 15 fatalities because the workers killed were contractors and do not show up on the host company accident and injury log.

By using leading process safety indicators such as activation of pressure relief systems or safety interlock systems, you are looking at what in the process was out of the operating parameter to cause or allow the excursion. This gives the opportunity to go back and correct the system failure that allowed the excursion to take place. This is one way refineries could better track their potential for a serious accident.

There are supposed leading indicator programs in place now but they lack the rigor and discipline necessary to give an accurate picture of process safety. They also do not require public reporting which the USW feels could help drive the industry to a higher standard. When the public is aware of how you operate they can help pressure you to be better.

The USW was involved in an initiative with the API recommended by the CSB to develop leading indicators for process safety. The CSB asked API and the USW to work together in a consensus process but the API instituted a formal voting process where on almost every issue a dozen or more oil companies just outvoted the union. The USW finally withdrew when it became obvious that the standard would not go further in identifying or improving reporting.

The USW also tried to address this issue during national contract negotiations with the industry in 2009. They refused to make any comprehensive improvements in health and safety language. After the Tesoro Anacortes tragedy, the USW again approached the companies to request to bargain on health and safety language to

try and put a stop to the seemingly never ending process safety incidents in the refineries. We are awaiting their answer.

RIGOROUS REGULATION

The Protecting America's Workers Act (PAWA) legislation that is currently before Congress must be passed. We hear many complaints about OSHA not doing enough but one of the biggest problems is the limit to what OSHA can currently do and the limited response required of a company to OSHA citations.

OSHA has instituted a National Emphasis Program (NEP) for oil refineries. The national program has completed 55 inspections, but only 14 of those have been settled. The other inspection citations have all been contested by the company issued the penalty. This means that the company is not required to take any action to abate the hazardous situations identified that have the potential to harm workers and the community.

The first 20 NEP inspections resulted in 456 citations being issued, of which 344 were for PSM violations. The elements most cited to date have been mechanical integrity, process safety information, operating procedures and process hazard analysis.

In most cases the contest period results in citations being negotiated away and fines reduced. OSHA does this with the union's reluctant blessing because it is the only way to get the most serious hazards fixed. But there is a serious downside. Where is the incentive to fix items or even follow the rules when it costs so little or requires no action on the company's part if they do not follow the rules?

SAFER ALTERNATIVES

Most refiners have substituted a safer alternative for chlorine used in water treatment, which can affect not only the workers in the plant but also the surrounding community due to the nature of the product. There is also a concern on the part of the union about the reluctance of industry to explore safer alternatives to an even more dangerous chemical, hydrogen fluoride (HF) used in the alkylation process.

USW has a project in place to bring attention to the public about the hazardous consequences to the surrounding communities, up to 25 miles according to some risk management plans (RMP), from a release of this chemical.

This one process—alkylation using HF—may be the single most dangerous process in all of American industry. A major release of HF in a populated area could injure or kill thousands. There are safer alternatives in solid acid catalyst, but there have been limited commercial pilots conducted and there does not appear to be much engagement by the refining community to try and advance this safer process. HF is the cheapest alternative for a catalyst in alkylation. It appears that this is a profit-driven decision, and if there is a major release, it will have the same effect on refiners as the failure of the *Deepwater Horizon* is having on offshore drilling; all companies will be affected

DRIVE TO THE BOTTOM

Solomon numbers, something every refinery worker knows. An arbitrary set of guidelines around number of employees, maintenance costs and other operating factors related to the cost of a barrel of oil processed. The goal is being in that first quartile. Problem is that the first quartile is always moving. Consequently the other numbers, like employees and dollars spent on maintenance is moving too, down, to try and compete with the "benchmark."

This has driven employers to reduce workforces and reduce money spent on repairs and upkeep to dangerously low numbers.

More automation added to the process is used as an excuse to reduce the number of personnel operating a process unit. Problem being that many RMP's submitted by the companies rely on operator intervention as the means to control a worst case release scenario. Today, those operating personnel are simply not there and the ones remaining have too much area to cover, requiring them to be in more places than they can possibly be.

The Environmental Protection Agency (EPA) is beginning an investigative process at the Nation's refiners that will hopefully expose this dangerous practice in identifying companies who no longer meet the requirements of their RMP and have not taken steps to remediate the situation. The USW looks forward to this review with the goal of making the plants we represent safer not only for our members but also the communities that house their friends and families.

FATIGUE

The issue of fatigued workers has come up in a number of refinery accidents as well as other industries; most notable lately is the airline industry. There is a simple solution to the fatigue issue in refineries, staff all open shifts.

Units have rosters which designate a certain number of people required to man the unit. This includes coverage for vacation periods. Over the years hourly operators have taken on more responsibility related to training, procedure writing, turnaround planning and new construction projects.

While we feel that this work is important and requires a worker that can bring first-hand knowledge, too often when these people are pulled out of the rotation their jobs are filled with overtime, not by replacing the person in the roster. This leads to more overtime as the replacement workers are now in a rotation and open shifts, often time in the schedule plus the vacation periods are all covered with overtime from the rest of the unit operators.

This leads to excessive days of work in a row. The CSB cited fatigue from long consecutive workdays, 12 hour shifts for 29 consecutive days, as one probable contributor in the BP Texas City accident. In addition to the already long 12-hour shifts at most sites, this can also mean 16 and 18 hour days to cover that open shift. This is not acceptable. Hiring of a few more operators to fully staff units would not only drastically reduce the fatigue concern, it would benefit the economy by putting some more people into good family wage jobs.

To sum up; we are not seeing new causes of accidents in the refining sector. The causes of accidents are the same time and time again.

An increased commitment to mechanical integrity is needed, assuring that we are inspecting the right equipment in the correct locations at the proper times.

It is like changing oil in a car. When you have a new automobile, you are cautious about changing the oil at 3,000 miles, when you have a 10-year-old automobile, you don't change oil at 10,000 miles; it is more critical as the automobile ages that proper maintenance schedules are maintained. This is the situation we are experiencing in the refining sector.

These plants are getting older and yet over the years the "oil change" in this case, unit turnarounds, are being pushed out further and further; in some cases from 2 to 3 years to 3 to 5 years. Not the most reliable way to treat "an old car."

Refining hydrocarbons is an inherently dangerous operation. Imagine filling a coffee can about half full of gasoline, putting the lid on and setting it on the barbecue to cook. Multiply that by 10 million. This is essentially what is going on in an oil refinery. That is why there are required safeguards to monitor the pressure, temperature and flow. That is why it is critical to assure the equipment is in good operating condition. This process can be operated in a safe manner, but it requires a commitment on the part of the employer to know for certain that they are doing all they can to maintain the equipment and equip the operators to be able to do the job that is required.

The results of the OSHA NEP inspections have supported the claims the Steelworkers have been making for a number of years and more vocally since the 2005 BP Texas City fatalities. The companies have not embraced process safety. They have put systems in place to document actions that are argued as compliance.

Being able to generate a computer spreadsheet with electronic signatures for training is not the same as providing training to assure the employee understands and adheres to the current operating procedure. One of the most cited compliance violations in the NEP is around the issue of operating procedures; so if the employees are being trained on out-of-date procedures, where is the benefit to anyone?

The intent and spirit behind the standard is not being filled.

Until there are controls in place to make it less profitable to disobey the standard, these actions will continue.

Fines need to be increased and citations affirmed when issued so that penalties are not reduced to so low a level it is cost-effective to not comply. And when an accident occurs from a violation of a standard and a worker or community member is seriously injured or killed there needs to be jail time for the managers who allowed a disregard of the standards. This is no different from a driver who injures or kills someone in a car accident; neither intentionally intended to hurt someone, but their careless actions caused or allowed it to happen.

Only when the consequences of allowing workers to be injured or killed on the job are severe enough will companies take serious action to change their safety culture.

Senator MURRAY. Thank you very much, Mr. Nibarger.

Mr. Sawyer.

STATEMENT OF RANDALL SAWYER, DIRECTOR, HAZARDOUS MATERIALS PROGRAMS, CONTRA COSTA COUNTY, MARTINEZ, CA

Mr. SAWYER. Chairman Murray, Ranking Member Isakson, and honorable members of the subcommittee, thank you for inviting me to participate in today's hearing.

My name is Randy Sawyer, and I'm the Contra Costa Health Services Hazardous Materials Program director.

Contra Costa County is a safer place to work and live because of the actions taken by the citizens of the county, the county's board of supervisors, the United Steelworkers' local unions, the Hazardous Materials Program staff, and the regulated industry.

The safety culture of the petroleum refineries and the chemical facilities have dramatically improved over the last 15 years. Contra Costa County is located on the San Francisco Bay Estuary and is the home to four petroleum refineries and several small-to-medium chemical facilities.

In the 1990s, there were many chemical accidents and releases, some of which caused the death and injury of workers and impacted communities, causing the pubic to seek medical attention. As a result, two major actions were taken to address the accidents and the concerns raised by the community and the county's board of supervisors. First was installation of the most integrated community warning system in the country, and second was the implementation of the most encompassing accident release prevention program in the country.

The Community Warning System was designed and built by the nonprofit Contra Costa County Community Awareness and Emergency Response Group. The Community Warning System is still considered state-of-the-art. The project was funded by industry and turned over to the county in June 2001.

Also, an industrial safety ordinance was adopted by the county and the city of Richmond. The industrial safety ordinance requirements go beyond those required by the U.S. EPA risk management and Federal OSHA Process Safety Management Programs. These regulations are the most stringent in the country.

The industrial safety ordinance requires regulated sources to consider inherently safer alternatives, perform root-cause analysis as part of their accident investigation programs, perform human-factors analysis, and perform a safety culture assessment at least once every 5 years.

The Contra Costa Health Services Hazardous Materials Program engineers have industrial experience and perform in depth audits of the regulated sources at least once every 3 years. These audits may take five engineers 4 weeks to perform, and may be the most thorough audits in the country.

The Community Warning System's ongoing maintenance, training, and upgrades are paid for by fees from larger regulated sources that handle hazardous materials. The fees are based on the amount of hazardous materials that are handled at the different regulated sources.

When the industrial safety ordinance was passed, fees were based on the potential hazards the chemicals regulated source han-

dles, the complexity of the regulated source, and the recent history of accidents that occurred at the regulated source.

The results of these actions is a change in the way industry does business. In Contra Costa County, instead of just putting safeguards in place, they're looking at how to avoid hazards altogether. As a result, in the last 11 years there has not been one accidental release from a regulated source that has had a major impact on the surrounding community or caused serious injury or death of a regulated source's worker. There have been incidents of a less serious nature during this time. However, there has not been a major chemical accident release in the last 2 years.

The Community Warning System and the industrial safety ordinance have made a dramatic, positive impact on refinery and chemical facility safety in Contra Costa County. This has made a safer work environment for the employees of the petroleum refineries and the chemical plants, and a safer community for our citizens to live.

Thank you, Chairman Murray.

[The prepared statement of Mr. Sawyer follows:]

PREPARED STATEMENT OF RANDALL L. SAWYER

Chairman Murray, Ranking Member Isakson, and Honorable Members of the committee, thank you for inviting me to participate in today's hearing. My name is Randy Sawyer.

Contra Costa County is located on the San Francisco Bay estuary. Contra Costa County is the home to four petroleum refineries and many small to medium chemical facilities. Many accidental releases from these facilities impacted the employees of these facilities and the surrounding communities during the 1990s. There was an average of one accident a year that resulted in a release or fire that caused the death of workers or had a major impact to the community. Members of the community, labor unions and the county's Board of Supervisors looked for solutions to this problem. Two major changes to how the county and industry operated occurred during this time. First was installation of the most integrated warning system in the country and the second was implementation of the most encompassing accidental release prevention program in the country.

HISTORY

Major Chemical Accidents and Releases

Below is a listing of major accidents and releases that occurred in the county during the 1990s.

- May 1992 lube spent acid was released and ignited and one worker died and another was seriously injured.
- August 1993 four to eight tons of sulfur trioxide was released that reacted with the water in the air to produce a sulfuric acid cloud and more than 20,000 people sought medical attention.
- September 1994 there was a release that occurred over 16 days that impacted the workers at the refinery and the surrounding community where more than 1,200 people sought medical attention at a special clinic established as a result of this release.
- June 1995 there was a crude unit fire where the refinery established alternative housing at a motel during and after the fire for more than 100 families.
- April 1996 there was a major release and fire at a catalytic gas unit that caused millions of dollars of damage at the facility.
- May 1996 there was an accidental release of hot coke[1] that ignited and caused millions of dollars of damage at the facility.

[1] Coke is a petroleum byproduct of some refineries. Coke is similar to coal. A delayed coker is one type of equipment that is used to produce this coke. The coke is formed in a delayed coker at high temperatures and then cooled. When the coke is cooled it is then dropped from the coker to a containment area below the delayed coker. This accident occurred when the coke was dropped before it was cooled properly, which caused a major fire.

• January 1997 there was a runaway reaction at a hydrocracker unit, which caused increased temperatures and pressures and the outlet piping from the hydrocracker failed, killing one worker and injuring 46 contractor employees.

• February 1999 there was a flash fire at a crude unit where four employees died and one was seriously injured.

• March 1996 a 6-inch valve failed at a gasoline process unit and a gas release occurred that exploded and ignited, causing millions of dollars of damage to the facility and smoke impacting the surrounding community.

There was also an accident that occurred at a non-chemical or petroleum refinery in which there was a dust explosion, resulting in the death of a worker and major damage at the facility. Since the 2000 accident, a year after the Industrial Safety Ordinance became law, there has not been an accident of this impact at a fixed facility.

COMMUNITY WARNING SYSTEM

The county looked at how to alert and notify the surrounding community around an industrial site if there was a release or fire from the site that could impact the area. The original concept was to develop local Traveler Information System radio stations, which could broadcast local emergency information; a telephone emergency notification system, which would call people with land lines downwind of a release; work with a local radio station to broadcast emergency information within Contra Costa County; and consider adding sirens in the industrial area of the county. After the 1993 release of sulfur trioxide, when more than 20,000 people sought medical attention, a committee was formed including eight community members, four industrial representatives, and three representatives from law enforcement, fire and health services to determine the best means to alert and notify the community during an incident. The committee visited industrial sites in Texas and Louisiana and met with warning system consultants to determine the best means to alert and notify the community as quickly and thoroughly as possible. The committee developed a report that looked at an "All Hazard" warning system, which they submitted to the county's Board of Supervisors in December 1993. The county accepted the report and created a Community Notification Advisory Board.

The Community Notification Advisory Board worked with the Contra Costa County Community Awareness and Emergency Response (CAER) Group to design and find funding for the final project. The Community Notification Advisory Board developed a means for funding to be paid for from the industries that handled acutely hazardous materials. A project manager was hired to oversee the project to completion. The final system includes activation computer terminals at the four refineries and two chemical facilities. The system can be activated with a push button from these six industrial sites that will sound sirens in the surrounding community, notify emergency response agencies, alert the surrounding community by broadcasting over the National Weather Service, activate the Emergency Alert System, send messages to the media using the California Emergency Digital Information System and call the community within 1,000 yards of the boundary of the community. The telephone area is modified when the wind direction is known and people who have registered their cell phones are called. The county has four locations where the system can activate different scenarios throughout the county. The four locations include the Contra Costa Health Services Hazardous Materials Programs, the Office of the Sheriff's Dispatch Center, the Office of the Sheriff's Community Warning System Offices, and the Contra Costa County Fire Protection District Dispatch Center. There are also terminals that can receive information at four other city Police Departments Dispatch Centers, the California Highway Patrol Bay Area Dispatch Center, the Bay Area Air Quality Management District's offices, and the San Ramon Valley Fire Protection District Dispatch Center. The Contra Costa Health Services Hazardous Materials Programs can also activate the Community Warning System from their hazardous materials response vehicles. This system was paid for by industry and given to the county in June 2001. There are three other notification levels that were developed and are detailed in the county's Hazardous Materials Incident Notification Policy that can be found at the following web address: *http://www.cchealth.org/groups/hazmat/pdf/incident_notification_policy.pdf*. The Notification Policy describes the Community Warning System and when and at what level to notify the Contra Costa Health Services Hazardous Materials Programs.

ACCIDENT PREVENTION PROGRAMS

California passed one of the first accidental release prevention programs in the United Sates in 1986, which was called the Risk Management and Prevention Program. Contra Costa County started implementing this program in 1989. This pro-

gram was a predecessor to the Federal Risk Management, OSHA's Process Safety Management, and the California Accidental Release Prevention Programs. If a facility handled some of the more toxic chemicals, which were called acutely hazardous materials, above a threshold they were required to develop and implement a Risk Management and Prevention Plan. In Contra Costa County, there was a 46 percent decrease in the highest amount of acutely hazardous materials that was handled between 1990 and 1994 to the amount of acutely hazardous materials that were handled at the end of 1994 if sulfuric acid was not included. There were three chemical engineers with industrial experience who worked implementing this program in 1992 when Contra Costa County began auditing the regulated businesses for compliance with the law.

On January 1, 1997 California adopted the U.S. EPA's Risk Management Program and made it more stringent by adopting some of the requirements of the Risk Management and Prevention Program. The regulated communities that were required to submit a Risk Management Plan to the U.S. EPA by June 1999 were also required to submit a Risk Management Plan to the local Unified Program Agency. There were additional California-only regulated sources that were required to submit Risk Management Plans 3 years after the local Unified Program Agency requested them.

Because of the accidents that occurred in Contra Costa County during the 1990s, the community and the county Board of Supervisors wanted a more stringent accidental release prevention program than either the U.S. EPA or the Federal OSHA accidental release prevention programs. The county originally adopted what was called the "Good Neighbor" ordinance. This ordinance had some major faults and some of the petroleum refineries filed a lawsuit to stop its implementation. While the lawsuit was going through the court system, industry, the Paper, Allied Chemical, and Energy Labor Union, and the county worked at finding an alternative to the "Good Neighbor" ordinance.

INDUSTRIAL SAFETY ORDINANCE

In December 1998, the county passed the Industrial Safety Ordinance for facilities in the unincorporated areas of the county that became effective on January 15, 1999. Two years later, the city of Richmond adopted this ordinance for facilities in that city.

The Board of Supervisors passed the Industrial Safety Ordinance because of accidents that occurred at the oil refineries and chemical plants in Contra Costa County. The ordinance applies to oil refineries and chemical plants with specified North American Industry Classification System (NAICS) codes that were required to submit a Risk Management Plan to the U.S. EPA and are program level 3 stationary sources as defined by the California Accidental Release Prevention (CalARP) Program. The ordinance specifies the following:

- Stationary sources had 1 year to submit a Safety Plan to Contra Costa Health Services stating how the stationary source is complying with the ordinance, except the Human Factors portion.
- Contra Costa Health Services develop a Human Factors Guidance Document (completed January 15, 2000).
- Stationary sources had 1 year to comply with the requirements of the Human Factor Guidance Document that was developed by Contra Costa Health Services.
- For major chemical accidents or releases, the stationary sources are required to perform a root cause analysis as part of their incident investigations.
- Contra Costa Health Services may perform its own incident investigation, including a root cause analysis.
- All of the processes at the stationary source are covered as program level 3 processes as defined by the California Accidental Release Prevention Program.
- The stationary sources are required to consider Inherently Safer Systems for new processes or facilities or for mitigations resulting from a process hazard analysis.
- Contra Costa Health Services will review all of the submitted Safety Plans and audit/inspect all of the stationary source's Safety Programs within 1 year of the receipt of the Safety Plans (completed January 15, 2001) and every 3 years after the initial audit/inspection.
- Contra Costa Health Services will give an annual performance review and evaluation report to the Board of Supervisors.

The 2006 amendments to the Industrial Safety Ordinance requires or expands the following:

1. Expands the Human Factors to include maintenance and all of Health and Safety.

2. Requires the stationary sources to perform safety culture assessments 1 year after the Hazardous Materials Programs develops guidance on performing a Safety Culture Assessment (Safety Culture Assessment Guidance was completed November 9, 2009).

3. Perform Security Vulnerability Analysis.

The seven stationary sources now covered by the county's Industrial Safety Ordinance are:

1. Air Products at the Shell Martinez Refining Company.
2. Air Products at the Tesoro Golden Eagle Refinery.
3. Shell Martinez Refining Company.
4. General Chemical West in Bay Point.
5. ConocoPhillips Rodeo Refinery.
6. Tesoro Golden Eagle Refinery.
7. Air Liquidé Large Industries.

The city of Richmond industrial safety ordinance are identical to the county's industrial safety ordinance except the city of Richmond has not adopted the 2006 amendments. Two stationary sources are covered by the city of Richmond's industrial safety ordinance:

1. Chevron Richmond Refinery.
2. General Chemical West in Richmond.

HUMAN FACTORS GUIDANCE

Regulated Sources are required to develop comprehensive human factors programs to include operations, Health & Safety, and maintenance departments. Comprehensive human factors programs must develop methods for evaluating and resolving active failures and latent conditions initiated within the following four dimensions or at the interfaces between the dimensions:

- Individuals (e.g., motivation, emotional states).
- The activity or task being conducted, including the procedures for the activity or task (e.g., routine, non-routine, written, practice, formal, informal).
- The physical environment (e.g., equipment) or workplace.
- Management or organization (e.g., poor communication, reward and discipline system).

The goal of the guidance document is to develop the requirements from the Industrial Safety Ordinance to ensure that sources will evaluate and resolve failures and conditions initiated within the previous four dimensions. Stationary sources must identify potential unsafe acts or active failures occurring in hazardous circumstances. They must also assess the adequacy of their existing safeguards and incorporate improvements if necessary. Both of these requirements can be fulfilled by conducting traditional and possibly procedural Process Hazard Analyses. When incidents and accidents do occur, sources must perform incident investigations to identify the active failures and existing latent conditions that contributed to the incident. The latent conditions[2] identified during the incident investigation must be incorporated into a program developed to manage and control latent conditions. Other programs must also be developed and implemented to manage and control latent conditions including a Management of Change[3] procedure to review staffing changes, a program for developing high quality procedures, and a program for developing a sound management system. Minimization of latent conditions should result in fewer unsafe acts or active failures or at least reduced risk from the unsafe acts and active failures that do occur.

MANAGEMENT OF ORGANIZATIONAL CHANGE

The Human Factors section of the Industrial Safety Ordinance requires stationary sources to conduct a Management of Change prior to staffing changes for changes in permanent staffing levels/reorganization in operations or emergency response. Employees and their representatives shall be consulted in the Management of Change. The intent of this chapter is to identify those requirements that stationary sources must incorporate into their existing Management of Change procedure to satisfy these requirements. Stationary sources may elect to develop a separate Management of Change procedure for staffing changes. Primarily, the guidance docu-

[2] Latent conditions are underlying conditions which can lead to an accident when some action combines with the underlying condition.

[3] Management of Change is a term that is used in the U.S. EPA Risk Management and Federal OSHA's Process Safety Management Programs referring to how a facility manages change in their processes safely and ensuring that affected personnel are trained on the change.

ment details requirements for identifying the technical basis for the organizational change and assessing the impact of the organizational change on safety and health. The requirements of this specified in the guidance document apply to:

- Reduction in the number of positions or number of personnel within those positions in operations, including engineers and supervisors with direct responsibilities in operations; positions with emergency response duties; and positions with safety responsibilities.
- Substantive increase in the duties in operations, including engineers and supervisors with direct responsibilities in operations; positions with emergency response duties; and positions with safety responsibilities (e.g., addition of equipment or instrumentation which significantly adds to the complexity of the system).
- Changes in the responsibilities of positions in operations, including engineers and supervisors with direct responsibilities in operations; positions with emergency response duties; and positions with safety responsibilities.

Each stationary source must develop criteria or guidance to assist appropriate personnel in determining "when" a Management of Change for an organizational change should be initiated.

ROOT CAUSE ANALYSIS

The primary purpose of an incident investigation is to prevent reoccurrence through the identification and correction of the causal factors of the incident. The process of determining the causal factors seeks to answer the basic questions about an incident:

- What happened?
- How did it happen?
- Why did it happen?

A root cause analysis is a systematic process that determines the causal factors, i.e., the events and conditions that are necessary to produce or contribute to an incident. The analysis develops what happened and how it happened, and then focuses on finding the underlying causes for why an incident happened by determining the causal factors of an incident. There are three types of causal factors:

- Direct cause;
- Contributing causes; and
- Root causes.

The direct cause of an incident is the immediate events or conditions that caused the incident. The direct cause addresses what happened. Contributing causes address how and why an incident happened. Contributing causes are causal factors that are events or conditions that collectively with other causes increase the likelihood of an incident but that individually did not cause the incident. The identification of root causes answers the question of why an incident happened. Root causes are the causal factors that if corrected, would prevent recurrence of the incident. Root causes can include system deficiencies, management failures, inadequate competencies, performance errors, omissions, non-adherence to procedures and inadequate organizational communication. Root causes are generally, but not always, attributable to an action or lack of action by a particular group or individual in the line organization. Root causes can be found at more than one level of an organization from management down through the first-line supervisors and to the worker.

As stated above, root causes may be found at the worker level. However, Contra Costa Health Services agrees with the guideline set forth in the Department of Energy Accident Investigation Workbook that a root cause of an accident can be found at the worker level if, and only if, the following conditions are found to exist:

- Management systems were in place and functioning, and provided management with feedback on system implementation and performance.
- Management took appropriate actions based on the feedback.
- Management, including supervision, could not reasonably have been expected to take additional actions based on their responsibilities and authorities.

INHERENTLY SAFER SYSTEMS

The intent of the Inherently Safer Systems requirements is that each stationary source, using good engineering practices and sound engineering judgment will incorporate the highest level of reliable hazard reduction to the greatest extent feasible, to prevent Major Chemical Accidents and Releases.[4]

[4] County Ordinance Code Section 450–8014(h) Major Chemical Accident or Release means an incident that meets the definition of a Level 3 or Level 2 incident in the Community Warning

"Inherently Safer Systems (ISS) means Inherently Safer Design Strategies as discussed in the 2008 Center for Chemical Process Safety Publication "Inherently Safer Chemical Processes" and means feasible alternative equipment, processes, materials, lay-outs, and procedures meant to eliminate, minimize, or reduce the risk of a Major Chemical Accident or Release by modifying a process rather than adding external layers of protection. Examples include, but are not limited to, substitution of materials with lower vapor pressure, lower flammability, or lower toxicity; isolation of hazardous processes; and use of processes which operate at lower temperatures and/or pressures."[5] "For all covered processes, the stationary source shall consider the use of inherently safer systems in the development and analysis of mitigation items resulting from a process hazard analysis and in the design and review of new processes and facilities."[6] The term inherently safer implies that the process is safer because of its very nature and not because equipment has been added to make it safer.[7]

2008 Center for Chemical Process Safety Publication *Inherently Safer Chemical Processes* has defined four categories for risk reduction:

- Inherent—Eliminating the hazard by using materials and process conditions which are nonhazardous; e.g., substituting water for a flammable solvent.
- Passive—Minimizing the hazard by process and equipment design features that reduce either the frequency or consequence of the hazard without the active functioning of any device; e.g., the use of equipment rated for higher pressure.
- Active—Using controls, safety interlocks and emergency shutdown systems to detect and correct process deviations; e.g., a pump that is shut off by a high-level switch in the downstream tank when the tank is 90 percent full. These systems are commonly referred to as engineering controls.
- Procedural—Using operating procedures, administrative checks, emergency response and other management approaches to prevent incidents or to minimize the effects of an incident; e.g., hot-work procedures and permits. These approaches are commonly referred to as administrative controls.

"Risk control strategies in the first two categories, inherent and passive, are more reliable because they depend on the physical and chemical properties of the system rather than the successful operation of instruments, devices, procedures, and people." The inherent and passive categories should be implemented when feasible for new processes and facilities and used during the review of Inherently Safer Systems for existing processes if these processes could cause incidents that could result in a Major Chemical Accident or Release. The final two categories do require the successful operation of instruments, devices, procedures, and people. The concepts that are discussed in the CCPS book, *Inherently Safer Chemical Processes, A Life Cycle Approach*, for looking at active and procedural applications of risk reduction, should be used in developing recommendations and mitigations from process hazard analyses along with the inherent and passive categories. This is good risk reduction. These concepts should also be used in the review and application of human factors in the process hazard analysis of new and existing processes.

Approaches to consider Inherently Safer Systems include the following[8]:

- Minimization—Use smaller quantities of hazardous substances (also called Intensification).
- Substitute—Replace a material with a less hazardous substance.
- Moderate—Use less hazardous conditions, a less hazardous form of a material, or facilities that minimize the impact of release of hazardous material or energy (also called Attenuation or Limitation of Effects).

System incident level classification system defined in the Hazardous Materials Incident Notification Policy, as determined by Contra Costa Health Services; or results in the release of a regulated substance and meets one or more of the following criteria:

- Results in one or more fatalities.
- Results in greater than 24 hours of hospital treatment of three or more persons.
- Causes on- and/or off-site property damage (including cleanup and restoration activities) initially estimated at $500,000 or more. On-site estimates shall be performed by the regulated stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by Health Service.
- Results in a vapor cloud of flammables and/or combustibles that are more than 5,000 pounds.

[5] County Ordinance Code Chapter 450–8, §450–8.014(g).
[6] County Ordinance Code Section 450–8.016(D)(3).
[7] Process Plants: A Handbook for Safer Design, 1998, Trevor Kletz.
[8] CCPS, *Inherently Safer Chemical Processes, A Life Cycle Approach*, 1996.

• Simplify—Design facilities that eliminate unnecessary complexity and make operating errors less likely, and that are forgiving of errors that are made (also called Error Tolerance).

The county's guidance on the review of Inherently Safer Systems is broken down into seven separate sections. The first section addresses new covered processes; the second section addresses existing processes; the third section addresses mitigations resulting from Process Hazard Analysis (PHA); the fourth section defines feasibility; the fifth section addresses recommendations from process hazard analyses; the sixth section addresses Inherently Safer System Reports; and the seventh section contains definitions. The ISS analyses must be performed for situations where a major chemical accident or release could reasonably occur.[9]

SAFETY CULTURE ASSESSMENT

Merriam-Webster defines "culture" as "the set of shared attitudes, values, goals and practices that characterizes an institution or organization." Safety culture is a measure of the importance that individuals and organizations exhibit towards working safely. It is the summation of attitudes and actions workers do at 2 a.m. on a Monday morning when no one is watching. An organization can influence employees to embrace positive shared safety values with consistent policies and practices and by leading through example.

History is filled with tragic life-altering and life-ending events that can be traced back to phrases like, "we've been doing it this way for years" or "this way is good enough." This guidance document was prepared to help stationary sources identify pervasive attitudes or beliefs regarding risk tolerance in the work place. There is a correlation between improving safety culture and decreasing the number and severity of accidents.

Although stationary sources subject to Contra Costa County's or the city of Richmond's Industrial Safety Ordinances already frequently evaluate situations for "hidden" problems or latent conditions, safety culture is subtler and even more difficult to assess. A Safety Culture Assessment will enable a facility to understand where they are in terms of risk acceptance. Additional benefits of performing a Safety Culture Assessment include:

• Identify positive as well as negative aspects of the onsite health and safety program.
• Assist in identifying opportunities for improving health and safety.
• Another tool to improve facility personnel's awareness and participation in health and safety.
• Identify perception gaps between managers, supervisors, and the workforce.
• Assist to demonstrate management's commitment to safety by performing the assessment and visibly addressing the results.

Every company has a culture. Sometimes certain aspects of safety culture are more evident (e.g., using the proper personal protective equipment) and sometimes it is more of an undercurrent of how things are done (e.g., recommended hearing protection is absent when the "boss" is not around). There will always be some element of risk in the workplace and in the work that is performed, but being cavalier about safety could lead to major problems beyond serious personal injury. Large facilities may have different cultures across departments, process units or even between shifts in the same process unit. Finding whether these differences exist is one of the challenges of the assessment. In general, the larger and more broad the population being assessed, the less evident these differences in perception may appear. For example, 10 similar perceptions from one workgroup may not be noticeable in a facility-wide survey of hundreds; whereas these same 10 perceptions out of a total work group size of 30 would stand out. Depending on the size of the facility, the following work groups should be assessed: management, supervisors, operators, maintenance, engineering, health and safety personnel and resident and applicable transient contractors. To better understand potential differences in behavior and develop improvement strategies, facilities should consider identifying sub-work groups for the assessment between processing areas, shifts, crews, maintenance crafts or levels of management.

Performing an initial Safety Culture Assessment will give a company a baseline from which they can compare future assessments. Any Safety Culture Assessment

[9] Process Hazard Analysis methods determine the risk of a deviation or potential incident. The risk determination is based on a combination of the hazard (severity) of the potential incident and likelihood (probability) of an incident occurring. If the potential hazard (severity) of consequence of a deviation meets the definition of a Major Chemical Accident or Release of an ISS Analysis should be done for those that could reasonably occur.

represents only a snapshot in time. Since the safety culture of a company will change over time, only by performing multiple assessments can a company discover if the steps that were taken to improve safety are actually improving. If not, the company may need to adjust and focus future improvement topics.

The primary goal of a Safety Culture Assessment is to assess individual and group values towards safety and risk tolerance. An ultimate goal for each facility should be to assess values toward safety and risk tolerance associated with each work group. One objective of the Safety Culture Assessment is to gauge the commitment and effectiveness of an organization's health and safety management program by evaluating attitudes, perceptions, competencies and patterns of behavior. Once these issues are known, a facility can direct the design, execution, evaluation and continuous improvement in the work environment to affect changes to safety-related behaviors and attitudes that ultimately minimize accidents.

More information on Contra Costa County's Safety Ordinance, including the Industrial Safety Ordinance Guidance Document can be found at the following Web page: *http://www.cchealth.org/groups/hazmat/industrial_safety_ordinance.php*.

AUDITING REGULATED STATIONARY SOURCES

Contra Costa Health Services has six engineers with industrial experience dedicated to the California Accidental Release Prevention Program and the Industrial Safety Ordinance. When an audit occurs at a petroleum refinery, it can take five engineers 4 weeks to complete the audit. The audit includes a review of the policies and procedures establishing the prevention elements that are required, review of the documents ensuring that the policies and procedures are being implemented as designed, interviewing operators and maintenance personnel to see if what is on paper is what is occurring in the plants, and to perform field evaluations. The purpose of the audits is to ensure that the programs in place meet the requirements of the California Accidental Release Prevention Program and the Industrial Safety Ordinance.

The audit includes 430 questions, the findings from the audit team, determination if the facility is in compliance with the requirement, actions to come into compliance, if out of compliance, proposed remedy, and a schedule to meet compliance. The proposed remedies and schedule are developed by the regulated stationary source and reviewed by the lead auditor. The regulated stationary source has 90 days to come up with a plan of action that is agreed upon by the auditing team. Follow-up on the actions being taken by the regulated source is reviewed during the next audit or during unannounced inspections. Below is an example of one of the questions with the proposed remedies from the regulated source.

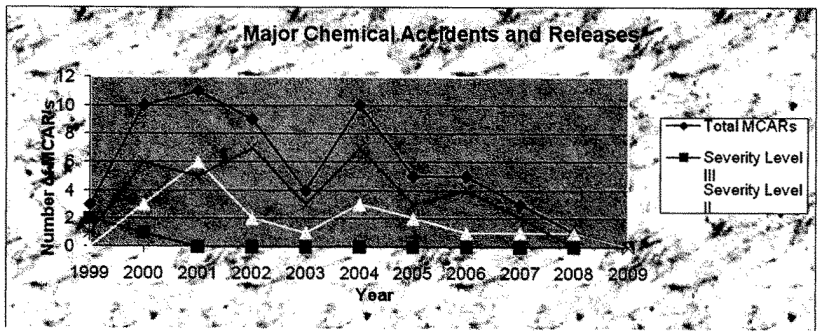
Number	Question ID#	Question	Findings	Answer	Actions	Proposed Remedy	Due Date	CCHS Comments
3	A12-08	Do the Process Hazard Analyses (PHA) address the identification of any previous incident, which had a likely potential for catastrophic consequences? [T19 CCR §2760.2(c)(2) & Section 450-8.016(d)(1)]	The PHA revalidation methodology includes a review of previous incidents. Tab 4 or 5 in the PHA binder is the listing of Chevron Incident investigation summary report reviewed by the PHA team. Per interview with personnel that participated in PHAs, incidents were reviewed and the likelihood of the event was adjusted to reflect incidents reviewed. The incidents discussed included Chevron events and incidents in other refineries/plants. These additional incidents discussed are not included in the PHA binder. CCHS reviewed TKC - (2/7/2008), there is an incident findings learning to "solicit the team members to identify specialty or unique equipment whose failure could result in a loss of containment. This will be documented as either 'No specialty equipment discovered' or 'Specialty equipment discovered.' The PHA database has been updated to include this as a standard deviation.' Based on CCHS review of PHAs, the PHA data have not been modified to capture this learning/requirement.	P	Ensure the PHA database is modified accordingly when changes to the PHA process occur.	Chevron will include at least the list of incidents reviewed during PHA's and will include the review and analysis of specialty equipment (if any are identified) as a core deviation in each PHA.	12/15/08	None

RESULTS

As mentioned earlier there has been no Major Chemical Accident or Release Severity Level 3 that has occurred at a regulated stationary source since 1999. Contra Costa Health Services staff has analyzed the Major Chemical Accidents or Releases (MCAR) that have occurred since the implementation of the Industrial Safety Ordinance. The analysis includes the number of MCARs and the severity of the MCARs. Three different levels of severity were assigned:

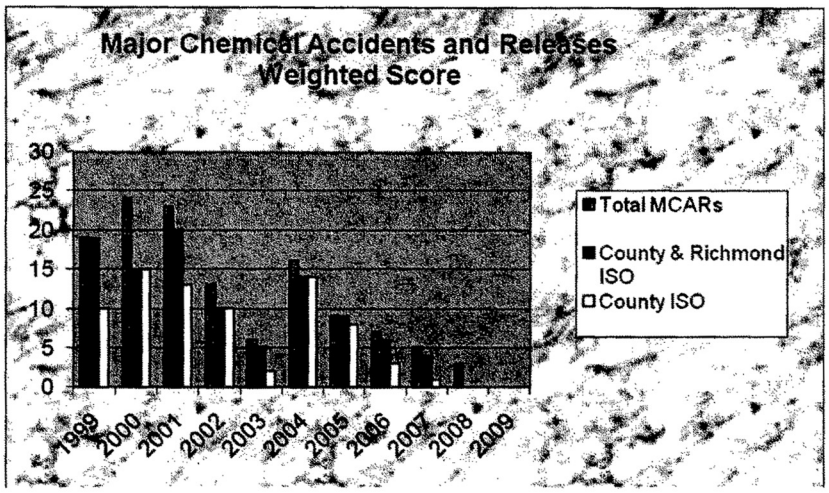
- Severity Level III—A fatality, serious injuries, or major onsite and/or offsite damage occurred.[10]
- Severity Level II—An impact to the community occurred, or if the situation was slightly different the accident may have been considered major, or there is a recurring type of incident at that facility.
- Severity Level I—A release where there was no or minor injuries, the release had no or slight impact to the community, or there was no or minor onsite damage.

Below is a chart showing the number of MCARs from January 1999 through December 31, 2009 for all stationary sources in Contra Costa County, the MCARs that have occurred at the county's Industrial Safety Ordinance stationary sources, and a chart showing the MCARs that have occurred at the county and the city of Richmond's Industrial Safety Ordinance stationary sources. The charts also show the number of Severity I, II, and III MCARs for this period. **NOTE: The charts do not include any transportation MCARs that have occurred.**



A weighted score has been developed giving more weight to the higher severity incidents and a lower weight to the less severe incidents. The purpose is to develop a metric of the overall process safety of facilities in the county, the facilities that are covered by the county and the city of Richmond Industrial Safety Ordinances, and the facilities that are covered by the county's Industrial Safety Ordinance. A Severity Level III incident is given 9 points, Severity Level II 3 points, and Severity Level I 1 point. Below is a graph of this weighted scoring.

[10] All the accidents that were listed during the 1990s were a Severity Level III MCAR.



FEES

The maintenance, operations, training, and the continuous improvement of the Community Warning System is paid for by fees from regulated businesses that handle more than 500,000 pounds of hazardous materials. The fee is proportional to the cubic root of the amount of hazardous materials handled by the regulated business.

The Industrial Safety Ordinance is paid for by fees based on the potential hazard that the facility poses. The potential hazard is assessed taking into consideration the following factors:

- The toxicity or flammability of the chemical.
- The quantity of the chemical stored in the largest vessel.
- The distance the largest vessel is from the fence-line of the regulated business.
- The volatility of the chemical.

An equation is used to determine the chemical potential hazard factor using the above four factors. Each chemical potential hazard factor is calculated and then all of the chemical potential hazard factors are added together to get an overall factor for the chemicals handled by the regulated business. This factor is then multiplied by a factor based on the complexity of the regulated business and a factor based on the recent accidental history of the regulated business to give the regulated business potential hazard factor. The percentage of the regulated business potential hazard factor to the sum of all the regulated businesses potential hazard factors is multiplied by the total overall expenses to implement the Industrial Safety Ordinance to determine the fee for that regulated business.

CONCLUSIONS

The major chemical accidents and releases that occurred during the 1990s and the outcry from the community caused the county Board of Supervisors to adopt the Industrial Safety Ordinance and industry to pay for the Community Warning System. Today, there is a marked change in the way the petroleum refineries and chemicals operate. What was acceptable in the 1990s is not acceptable today. The industry is now held to a higher standard than anywhere else in the country through the county's Industrial Safety Ordinance and the way that alert and notifications were required to be performed through the Community Warning System. The thorough auditing and the follow-up by the Accidental Release Prevention Program Engineers ensure that the high standard is being met by the regulated sources. The result is the number and severity of accidents that have occurred within the county have declined to almost nothing.

Senator MURRAY. Mr. Drevna.

STATEMENT OF CHARLES DREVNA, PRESIDENT, NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION, WASHINGTON, DC

Mr. DREVNA. Good morning, Chairman Murray, Ranking Member Isakson, and Senator Franken.

I'm Charlie Drevna. I'm president of NPRA, the National Petrochemical & Refiners Association, and I thank you for giving me the opportunity to appear before you this morning.

NPRA represents more than 450 businesses, including virtually all petroleum refiners and petrochemical manufacturers.

To paraphrase an advertising slogan, our members don't produce the crude oil; they make the crude oil better by turning it into useful products.

Like all Americans, we are deeply saddened at the tragic loss of life and terrible environmental damage caused by the leak from the Deepwater Horizon disaster in the Gulf of Mexico. Naturally, our thoughts and prayers go out to those who died, and the families, and to everyone suffering.

But, the issue of safety involving drilling rigs is not something I can speak to. It's outside the scope of the refining and petrochemical manufacturing activities that we, at NPRA, represent. Rather, I'm here to talk about safety in facilities operated by NPRA members.

Let me begin by saying that absolutely nothing—and I underscore the point—absolutely nothing is more important to us than workplace safety. That's because nothing is more precious than the good health and lives of our valued employees and contractors. We have zero tolerance for injuries and fatalities. Besides being the right thing to do, promoting safety makes good business sense. It's far more expensive to deal with the aftermath of workplace incidents than to prevent them.

Last month, NPRA held a national safety conference. Our guest speaker was Jordan Barab, as the previous witness is. He acknowledged the good work our members are doing, but he also said, "We must do a lot more." And we wholeheartedly agree.

We believe the best way to do more to enhance workplace safety is to work in cooperation, not confrontation, with all stakeholders—OSHA, Chemical Safety Board, labor unions, contractors, and Congress. Improving safety shouldn't be a battle between adversaries or something negotiated by opposing sides in labor contracts. It should be a campaign of allies. We will not use OSHA and the medium as forums to negotiate contracts with labor unions, however. We all want safe workplaces, but we won't create them by issuing dueling press releases or using inflammatory rhetoric or denouncing each other on TV. These theatrics just make achieving our common goal harder. We need actions to speak louder than words.

In my written testimony, I listed a series of actions that NPRA members have taken in the past 5 years to reduce workplace hazards. Because of these actions, the industry has protected employees and contractors better than we have before. It doesn't say that we're done. We'll never be done. But, we're better than we were.

I would like to point out here right now that NPRA has been collecting occupational illness and injury rates for the last 10 years, for both permanent and contract employees. And the graph in my

testimony indicates such, and it also indicates that the combined rate for contractors and employees is less than the single rate for just permanent employees.

But, again, we are continually attempting to improve personnel and process safety. Personnel safety is involved with protecting the safety, health, and welfare of the people who work in refineries and petrochemical plants. Process safety is equally important. It involves making sure that a facility operates properly. That means maintaining the equipment in a way that will avoid chemical releases and other incidents that could harm people, the facility itself, or the surrounding area.

We're working closely with OSHA. Many members of NPRA are enthusiastic participants in OSHA's Voluntary Protection Program known as VPP. VPP promotes and recognizes effective workplace safety and health management. Labor, management, and OSHA established a cooperative relationship at sites that have implemented these strong safety and health systems.

We agree with OSHA on many things. OSHA tells us inspectors need to focus on facilities and companies with the most serious problems, and not try to find every minor violation at every facility. We endorse this commonsense approach. We need OSHA to extend a helping hand to our members to assist them in complying with regulations and creating safer workplaces.

However, we do believe that OSHA should use its enforcement arm against operators of refineries and petrochemical plants that commit serious violations and aren't taking steps to comply with safety regulations. If there is a bad actor out there, government should act against them. But, it's not accurate to paint everyone in the refining and petrochemical industry with a broad brush, condemning all because of the actions of a very few. It's not accurate to say there's a systemic safety problem at refineries and petrochemical plants around the Nation.

To bring all sides together, we're planning a workshop, focusing on refinery safety. We'll conduct this, with participation from OSHA and labor and other stakeholders, this fall. I invite the members of the committee and their staffs to attend.

Safety is the job of everyone in the refining and petrochemical manufacturing, from corporate CEOs, to managers, to the workers that keep the refineries and plants running. Our members are instilling this belief in everyone at their facilities so that they can build a strong culture of safety that focuses on both personnel and safety process. This is a culture where each person is adequately trained, follows proper procedures, reports problems promptly, and takes all necessary precautions.

Working together as stakeholders, to share the knowledge and learn from each other, NPRA and our members are committed to creating this culture of safety and the safest workplaces possible. We invite you to join us.

Thank you for your time.

[The prepared statement of Mr. Drevna follows:]

PREPARED STATEMENT OF CHARLIE DREVNA

I. INTRODUCTION

Good morning, Chairman Murray, Ranking Member Isakson, and members of the subcommittee. I'm Charlie Drevna, and I serve as president of NPRA, the National Petrochemical & Refiners Association. I appreciate the opportunity to testify at today's subcommittee hearing dealing with process safety management in the oil and gas industry.

I know that in the public mind, the oil industry is a collection of giant companies that do everything—explore and drill for oil, turn it into fuel and other useful products, and own gasoline stations where you fill up your car or truck. But that's not the reality. While some companies both get the oil out of the ground and refine it, many more operate only refineries or petrochemical plants. And nearly 95 percent of gasoline and diesel fuel is sold today by independent owners and operators of service stations and convenience stores that buy fuel from refineries or other distributors.

NPRA represents more than 450 businesses, including virtually all U.S. refiners and petrochemical manufacturers, their suppliers and vendors. Our member businesses provide the transportation fuels that keep Americans moving on the ground and in the air—safely, reliably and cost-effectively. Our members also supply families with a wide variety of products used daily in their homes and at work, including fuels, lubricants, and chemicals that serve as building blocks for everything from plastics to clothing, life-saving medicines and computers.

NPRA represents what we call "downstream" activities—we don't focus on getting oil out of the ground or offshore, we focus on turning it into useful products. Or to paraphrase an advertising slogan: We don't produce the oil, we make the oil you buy better. The oil that comes directly out of the wellhead is useless until it's refined into a fuel or a petrochemical, and that's the important work our members do.

While some NPRA members also explore and drill for oil and natural gas, we don't represent that part of the business—what we call "upstream." So even though—like all Americans—we're following news reports and are saddened at the tragic loss of life and terrible environmental damage caused by the leak from the *Deepwater Horizon* in the Gulf of Mexico, it's not something I can speak to because it's outside the scope of the activities NPRA represents. Our thoughts and prayers go out to those who have died and to the many people who are suffering in the Gulf. These fine people are our friends and neighbors too, given the refining and petrochemical industries' significant presence in the region. We hope the leak can be stopped as quickly as possible, and that cleanup activities and safety improvements can proceed swiftly and effectively.

II. SAFETY IS PARAMOUNT

I'm here today to talk about safety in petroleum refineries and petrochemical manufacturing plants operated by NPRA members. Let me begin by saying as clearly and emphatically as I can that nothing—absolutely nothing—is more important to us all than workplace safety. Nothing is more precious than the good health and the lives of our employees and contractors. They are the institutional knowledge of our industry and these men and women are not just statistics or assets to us. They are our co-workers, friends and neighbors. Their children go to the same schools as the children of management, their families go to the same churches, they belong to some of the same clubs and sports teams.

Despite media characterizations and the belief of some that our industry values "production over protections," the financial and business costs of workplace incidents are so heavy that it makes good business sense to keep our facilities as safe and reliable as possible. There is simply no situation where lax safety procedures will create any sort of benefit.

Just last month, NPRA held a 2-day National Safety Conference in San Antonio and approximately 400 safety specialists from our member refineries, petrochemical plants and contractors attended. Safety is not a new issue for us. We've been holding these national conferences annually since 1991, and regional conferences were held in prior years. This year's conference was very informative and helped everyone there learn important lessons from past incidents and best practices on how to improve safety at their facilities.

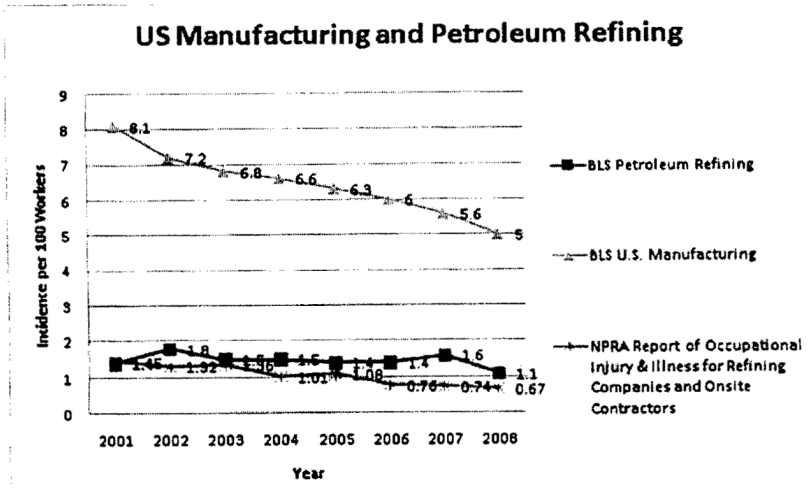
Because we take the subject of safety so seriously, we invited Jordan Barab, the Deputy Assistant Secretary of Labor for Occupational Safety and Health, to speak to our safety conference this year. Mr. Barab acknowledged the work our members are doing in safety, saying: "OSHA recognizes that you are America's quiet heroes

and deserve our thanks." But he also made clear that more must be done. Our response: We agree wholeheartedly with both assessments. And we believe that the best way to improve safety in our industry is to work in cooperation—rather than confrontation—with all stakeholders: OSHA, the Chemical Safety Board, labor unions, contractors and Congress. We all seek the same goal—safe workplaces, where every worker goes home safe and sound every day. Issuing dueling press releases, denouncing each other for the TV cameras and in expensive ads, and using inflammatory rhetoric to score political points won't accomplish our common goals and, if anything, will only serve to make the task even harder. Instead of applying our energy to escalate the rhetoric of charge and countercharge involving safety, we must join forces to improve the reality of safety.

This is why we are planning a workshop focusing on refinery safety that we'll conduct with significant input from OSHA and labor this fall. The workshop is the outgrowth of a meeting that American Petroleum Institute (API) President and CEO Jack Gerard and I had with Assistant Secretary of Labor for OSHA Dr. David Michaels and many of his senior staff. This workshop will give all stakeholders in our industries an opportunity to build on our safety conference and share knowledge with each other to make refineries and petrochemical plants safer. It's important to understand that while anti-trust laws prevent competing companies from sharing a great deal of business information, there are no restrictions on sharing information about safety. NPRA and our safety conferences are important vehicles that help our members learn about things that go wrong and things that go right in each other's facilities, so they can all engage in continuous improvement of their safety efforts. Our members don't compete with each other on safety—they stand together.

There is no denying the fact that there are inherent risks involved in the refining and petrochemical manufacturing process. Petroleum is an explosive and flammable substance, and converting it into useful fuels and chemicals requires extremely volatile materials to be subjected to high pressure and high temperatures, using complex processes and equipment. Despite this, our rate of workplace-related incidents is historically extremely low, and we protect our workers through process and personnel safety programs better than almost any other manufacturing industry in the United States.

The chart below illustrates our record in personnel safety. Personnel safety involves making sure people working in refineries and petrochemical plants follow proper operating and safety procedures, such as being alert to everything going on around them to avoid hazards, wearing proper safety equipment, and using proper lifting techniques to avoid injuries. Process safety, which is required under OSHA regulations, is just as important. It involves making sure that a facility operates properly and handles hazardous substances in a manner that will avoid chemical releases and other incidents that could harm people or cause damage to equipment, the facility itself, or the surrounding area. Industry realizes that process safety incidents have the potential to cause significant injuries and fatalities. For this reason. we have developed a standard for measuring the health of a process safety management program. ANSI API RP 754. NPRA will formally begin collecting applicable 2010 data in January 2011.



I want to emphasize that while safety has been improving in the industry, we want to ensure we stay on this path, which is why we feel the status quo—however positive the numbers may indicate—is never acceptable. We take all incidents seriously and conduct conferences and workshops like those previously mentioned to ensure our industry is continuously focusing on and improving safety.

III. IMPROVEMENTS MADE

To paraphrase another advertising slogan, this is not your father's refining and petrochemical industry. There has been significant progress over the years as facilities continually enhance their safety programs and procedures; the result is fewer and fewer people being injured at refineries and petrochemical plants. NPRA and API have worked together on several new industry-recommended practices that will enhance workplace safety. There are approximately 30 safety and fire protection standards and recommended practices maintained by API that refining companies voluntarily comply with in order to promote a safe working environment. In addition to refining industry standards, companies also comply with standards established by: the American National Standards Institute (ANSI); American Society of Mechanical Engineers; the Instrumentation, Systems, and Automation Society; and the National Fire Protection Association. Many of these standards are considered recognized and generally available good engineering practices and are enforced by OSHA's Process Safety Management Standard. NPRA has adopted the requirements of the ANSI-approved API Recommended Practice 754, Process Safety Performance Indicators for the Petroleum and Petrochemical Industries. We will begin collecting process safety event data and report them publicly on an annual basis as required by the standard.

Let me give you just a few examples of safety progress we've made in the past 5 years, since the tragedy that usually comes up when refinery safety is discussed—the explosions and fire that killed 15 workers and injured many more at the BP refinery in Texas City. Our members have worked hard to learn from that terrible incident to improve safety at their facilities. In the past 5 years:

• There have been improvements in facility siting of permanent and temporary structures at refineries to locate them in safe places, as the improved facility siting standards are being implemented. More buildings are now blast-resistant. Exclusion zones are enforced to keep all non-essential workers away from certain locations during start-ups, shut-downs and disruptions—the most hazardous times. Operating procedures, worker training and safety instrumentation at refineries have all been reevaluated and improved to ensure workplace safety. Worker fatigue standards are being implemented to ensure that workers are alert on the job. Training and monitoring are focused on both leading and lagging indicators. Leading indicators are warning signs of problems that may arise in the future. Lagging indicators are lessons to be learned from things that went wrong in the past, to prevent a repetition of past problems. *All* events are counted and investigated, no matter the size.

• There is a constant emphasis on the equal balance of both personnel and process safety. The objective of process safety is to identify problem areas and correct them before they lead to safety incidents. Our members realize that preventive steps make sense because they reduce workplace-related incidents and improve the reliability of the facility. Individual companies did not wait for an industry standard on process safety metrics. They have already developed and implemented site-specific and company-specific process safety metrics that get regularly reviewed and shared with management, including company officers and directors. There is now an increased focus on common process safety metrics, specifically leading metrics. This includes standardization of metrics that will allow industry to benchmark and set performance goals. These metrics will significantly impact the methods used to measure process safety performance, with the expectation that they will advance improvements in process safety. Our members realize that OSHA's standard measurement of occupational injury and illness measures personnel safety, and that an additional measurement is needed for process safety. NPRA will begin collecting and analyzing process safety metrics next year, in a manner similar to the way we collect and analyze statistics on worker injury and illness.

• Process safety management and plant reliability have been integrated and improved because management has a greater understanding of the correlation between the two. This has increased the preventive and predictive maintenance at facilities to keep problems from arising and increased upper management's knowledge and awareness of process safety management and metrics.

Although our safety record compares favorably with many industries, and our rate of workplace injuries at refineries and petrochemical plants is lower than that in many industries, we measure success by looking in the mirror rather than by comparing ourselves with others. We firmly believe that there is no tolerable level of injury. There is no tolerable level of workplace-related incidents. Our goal is to reduce these to zero, and we will do everything possible to reach that goal.

Our members go above and beyond what is required by OSHA and other government regulations, and are always reviewing new techniques to improve both personnel and process safety. They have invested and will continue to invest heavily to make refining and petrochemical manufacturing processes safer. They work to manage the complex risks inherent in their production activities by quick recognition and mitigation of hazards. In addition, several layers of protection are in place to prevent employee injuries when an incident occurs. Refining and petrochemical plants record and learn from all incidents big and small, and implement necessary changes in procedure in an effort to prevent problems from reoccurring. For large incidents, our industries don't wait for the Chemical Safety Board or OSHA to publish a formal report. Once the cause of an incident is suggested, company experts investigate their own processes and share findings with the industry.

In addition, many NPRA members are enthusiastic participants in OSHA's Voluntary Protection Program (VPP), which advances worker protection by promoting and recognizing effective workplace safety and health management. Under VPP, management, labor and OSHA establish a cooperative relationship at a worksite that has implemented strong safety and health systems. In order to qualify for VPP status, sites must meet or exceed all OSHA regulatory standards and submit to an OSHA review of their programs. VPP sites are not exempt from OSHA's Refinery Process Safety National Emphasis Program and must submit annual process safety evaluations with a 3-year OSHA onsite follow-up. This process gives OSHA the opportunity to continually maintain a presence at these sites as opposed to a one-time enforcement contact, which is the case with non-VPP sites. NPRA members currently represent 95 VPP facilities, 27 VPP contractor sites and 49 union VPP sites. The success of VPP is based on its dynamic approach to encourage safety and health beyond targeted goals of traditional enforcement. The VPP process emphasizes continual identification and elimination of hazards at worksites. Participants in VPP have enjoyed significant worker injury rate reductions—a 50 percent difference between VPP and non-VPP sites is not uncommon in our experience. Few programs have achieved such unified support from workers, businesses and government.

The VPP sites also assist in training OSHA compliance officers in refinery safety and process safety management. We would like to see the VPP maintained in its current state as a continuous collaborative improvement process to drive safety efforts. It should not be reduced, as has been proposed.

NPRA strongly encourages OSHA to continue its collaborative approach to workplace safety. Safety and health in the workplace requires the careful combination of both enforcement methods and cooperative programs. VPP adds value to workplace safety and health by encouraging worksites to go beyond compliance. In January of this year, I sent a letter (Attachment I) to OSHA Assistant Secretary Dr. David Michaels outlining the benefits of VPP and our concerns with the program's

decreased funding and personnel allocation. Dr. Michaels responded (Attachment II) to NPRA saying: "[T]he agency will focus its scarce resources on employers that need the most help and attention." In addition, NPRA reiterated the positive contribution VPP and other cooperative programs have on workplace safety in written comments (Attachment III) for *OSHA Listens: Occupational Safety and Health Administration Stakeholder Meeting* (OSHA Docket No. OSHA–2010–0004). Programs like VPP and other outreach and education efforts are essential in maintaining a safe workplace.

IV. TARGETING THE MOST SERIOUS PROBLEMS

In his speech to our National Safety Conference, Jordan Barab said: "OSHA has a responsibility to work closely with those facilities having the most frequent and serious safety violations, concentrating its limited resources on facilities where they are most needed." Mr. Barab went on to tell NPRA members that OSHA officials need to "find a better way to target problem refineries so that we aren't wasting our time or your time inspecting refineries that don't have major problems." And he said, speaking for OSHA: "We want to work with you and other stakeholders like unions and experts to find a better way to target problem refineries for more attention." NPRA wholeheartedly endorses this common-sense approach, which is long overdue.

It is impossible and unnecessary to have OSHA inspectors stationed at every workplace in America, looking over every worker's shoulder, every hour of the day to enforce workplace safety. These overworked and dedicated inspectors can't be in more than one place at a time. In trying to make everything a priority, nothing becomes a priority. Instead, as Mr. Barab told us, OSHA's attention needs to be focused on facilities and companies with the most serious problems. Rather than treating all safety violations that inspectors find equally—from the most minor to something that could cause a deadly explosion—we need to focus the most resources on correcting violations that pose the greatest safety risks. In the same way, when looking at the number of injuries at a facility we need to focus on injuries that result in workers missing time on the job, not equating them statistically with minor injuries that result in no lost time.

Looking at safety and injuries in this way shows that NPRA members have made tremendous strides in recent years to improve safety at their facilities, and are working every day to make further improvements. It discredits the view of some that there is a systemic safety problem at refineries and petrochemical plants in the United States. This view is simply not accurate. Are we perfect? No. But is a perfect safety record our goal? Yes. Will we continuously work towards that goal to the best of our ability? Yes. We need OSHA to extend a helping hand to our members to assist them in complying with regulations and creating safer workplaces. We need other Federal agencies and unions to do the same. Improving safety should not be a battle between adversaries, but a joint campaign of allies. And the best measure of safety is not how many new standards have been issued, or how many citations have been written, but to what extent process safety incidents, illnesses, injuries and fatalities have been reduced. We will not be satisfied until workplace deaths have been reduced to zero.

Should OSHA use its enforcement arm against operators of refineries and petrochemical plants that commit serious violations and aren't taking necessary steps to comply with safety regulations? Absolutely. If there are bad actors, government should be acting against them. But in all fairness, it is not accurate to paint everyone in the domestic petroleum refining and petrochemical business—or any business for that matter—with a broad brush, condemning all because of the actions of a very few.

V. CONCLUSION

When he spoke to our National Safety Conference, Jordan Barab discussed what he called "the need to build a strong corporate safety culture," which he defined as a way of doing things that incorporates safety into all activities. "Organizational safety culture must come from the top," he told us. We agree. Our members are committed to fostering a culture of safety that comes from the very top and includes every single employee and contractor. This is a culture where everyone can honestly say "the buck stops here" when it comes to safety. A culture where everyone pays attention to training, follows proper procedures, reports problems promptly and takes all necessary precautions to avert safety incidents. They do this because they understand this is the best way to protect themselves, their colleagues, and the facilities that provide them with jobs. This behavior coming from within our member facilities does more than anything else to promote safety.

Along these lines, we also agree with—and have long been following—the advice Mr. Barab gave us when he told our members:

> "And watch for the small things—the tip of the iceberg principle. The few problems you do see, particularly at higher management levels, are probably a fraction of the problems you don't see below the surface. Follow up on close calls and unusual circumstances; these can point to underlying problems that, if not addressed, could lead to tragedy."

NPRA and our members place the highest possible emphasis on the safety of refining and petrochemical manufacturing operations and go to great lengths to make facilities as safe as possible for the sake of those who work there and for the neighbors who live and work in the surrounding communities. We focus on management systems to drive and continually improve process safety, work practices and reliability. We emphasize the training of workers and the prevention of safety incidents. Our members learn as much as possible from any safety incidents that pose a risk to human health or the environment, and then use that knowledge to make their operations safer.

Safety isn't the job of just the operators of our member facilities, or just the Federal Government, or just the unions, or just individual workers. It's the job of us all. Working together to share our knowledge and learning from each other about things that go right and things that go wrong, struggling together in the face of inevitable setbacks, and always maintaining a spirit of partnership, we can build on what has been accomplished and make our workplaces even safer. I pledge to you today that this is the course to which NPRA and our members are committed, and I ask you and all our other stakeholders to join us.

Senator MURRAY. Thank you all, for your testimony.

I have a number of questions. Mr. Nibarger, before I start, I wanted to clarify—I thought I heard you say that trailers have been replaced by tents in the blast zone.

Mr. NIBARGER. That's correct. One of the recommendations from the Chemical Safety Board report was that API write a new standard on safe siting in refineries. And they did that. But, in excluding tents from being in predicted blast zones, they specifically exempted tents.

Senator MURRAY. So, trailers, that were unsafe, are being replaced by tents?

Mr. NIBARGER. That's correct.

Senator MURRAY. Mr. Barab, is that OK with OSHA?

Mr. BARAB. That is the result of an API recommendation. I don't think that we've actually addressed that issue yet. We just recently heard about it from the steelworkers, but I think it's certainly something we need to look into, because I don't think it would—sounds like it wouldn't be necessarily in compliance with our Process Safety Management standard.

Senator MURRAY. Mr. Drevna, is that really——

Mr. DREVNA. Madam Chair, I don't think that's an accurate statement. There is a standard process for tents. The question is where, how far outside the blast zone. I disagree with the assertion, completely.

Senator MURRAY. Mr. Nibarger.

Mr. NIBARGER. Yes, there are tents located in blast zones.

Senator MURRAY. On refinery sites. This is post-BP Texas——

Mr. NIBARGER. Yes.

Senator MURRAY [continuing]. Blast, where a number of the victims were in trailers. It was considered unsafe, obviously. And, Mr. Drevna, the recommendation from API is that tents are OK? I just find that astounding.

Mr. DREVNA. Ma'am, I would appreciate the opportunity to respond in detail to that.

Senator MURRAY. OK.

Mr. DREVNA. But, in written statements.

Senator MURRAY. Absolutely. Our committee will look forward to getting that.

And, Mr. Nibarger, if you can give us information on that.

Mr. Barab, can you shed any more light on that, or are you just——

Mr. BARAB. No—I'm sorry, no, but I'm sure if we get some more specific information on that, we'd be glad to look into it.

Senator MURRAY. OK.

Mr. Nibarger, I understand you were on the scene, on April 2, at the Anacortes fires, shortly after it occurred in Washington State. And you've been designated to respond to the needs of the families. I wanted to ask you, How are the families doing?

Mr. NIBARGER. Well, actually, I just do the health and safety side. We have another department in the Health and Safety Department that responds to the family needs. But, that is my former local union, and so I've been in pretty constant contact with them. And the families, as you can imagine, are devastated. They have received a tremendous amount of support from the community, and they are doing as well as can be expected.

Senator MURRAY. OK. Well, if you can pass on my wishes to them, too. I know it's a community that very much supports the refinery; it is the lifeblood of that community.

Mr. NIBARGER. Yes.

Senator MURRAY. And they've now had two tremendous accidents. It's been very, very difficult for them.

I did want to ask you a question about the awards. And I understand that, in the Tesoro refinery, back in 2009, Washington got two safety awards—a gold award and a merit award—from the National Petrochemical & Refiners Association. And I've also heard that, in 2009, the U.S. Minerals Management Service issued Transocean a safety award for excellence for, "outstanding drilling operations in 2009." And on April 20, the day the Deepwater Horizon Explosion occurred, there were actually a group of BP executives there to celebrate some kind of safety milestone.

Do you find anything odd about getting safety awards at the same time as these tragic accidents are occurring?

Mr. NIBARGER. Well, I sure do. But, as has been alluded to earlier, these awards are based on OII rates—occupational, injury, and incident rates. And, typically, the refinery rates are low. The OSHA 300 rate at my refinery was about a .5, which was exceptionally low. And then at 6 p.m., we killed six people. So, that OSHA personal injury—slip, trips, falls—is not an indicator of process safety in these facilities.

Senator MURRAY. OK. You talked quite a bit about the maintenance backlogs, they're not doing maintenance quickly enough. And you talked about having a car that you check the oil more often.

In your opinion, is that because they want you to keep operating, keep the production numbers up, and delays in maintenance cost money?

Mr. NIBARGER. I would assume that that is their motivation. We have seen the unit turnarounds, which, in some cases, were done every 2 and 3 years, are now being pushed out to 3- and 5-year pe-

riods. Members tell us that the scope on those is being cut as the deadline for the end of the turnaround comes; items start getting put off and delayed until later. BP Texas City, for example, the tower that overfilled had a request in for the turnaround to replace the site glasses, which are what they sound like, glasses that you can follow at a corresponding level in the tower. They changed the taps for those site glasses, but put the old site glasses back on and said, "After we get up, we'll put new ones on." So, the operators weren't able to verify the level in that tower.

Senator MURRAY. So, workers are at work when maintenance hasn't been completed that is required to be completed.

Mr. NIBARGER. That's correct.

Senator MURRAY. And, Mr. Barab, there's no oversight on this, if maintenance isn't occurring in the timeframe that it's supposed to for——

Mr. BARAB. No. Mechanical integrity is a key part of our Process Safety Management standard; in fact, is one of the four items that we cited most frequently during our National Emphasis Program. It's an extremely important part, and something we take very seriously when we find it has been neglected.

Senator MURRAY. OK.

Senator Isakson.

Senator ISAKSON. Mr. Barab, I apologize, but I've been reading my notes while you all were talking, so I discovered a new OSHA question. So, I know this is not your panel, but I want to try and get it in.

Are you familiar with *Chao* vs. *Mallard Bay Drilling, Inc.*?

Mr. BARAB. No, I'm not, I'm sorry.

Senator ISAKSON. Well, I wasn't either, until I got deep into my notes. But, that's a 2002 U.S. Supreme Court decision that said OSHA had jurisdiction over Coast Guard-regulated facilities like ships and vessels, as well as oil rigs. And then I've read some of the "yes, buts" in here. But, my question, I guess, is, there—obviously, the U.S. Supreme Court found some authority for OSHA to do that off the shore. And then I've read some of the contravening opinions, the "yes, but the—subject to Coast Guard jurisdiction," things like that. The question I'm getting to is, Do you think OSHA—should OSHA have the—OHSA inspects the oil rigs in Houston and on ground. Is that right? The refineries and the——

Mr. BARAB. Yes, sir. Yes, sir.

Senator ISAKSON. So, you've got the expertise. Should you have the jurisdiction offshore?

Mr. BARAB. Well, first of all, I'd——

Senator ISAKSON. Or, should we clarify the Chao ruling, I guess?

Mr. BARAB. Yes. Well, somebody just—my trusty associate here just handed me a whole page on the Mallard Bay Drilling decision, so—I'm not quite an expert on it yet. But——

Senator ISAKSON. You've got the same problem I do.

[Laughter.]

Because I had one behind me.

Mr. BARAB. OK. There are a lot of intricacies in that, versus what we call "inspected vessels," versus "uninspected vessels" by the Coast Guard.

Now, your question as to whether we "should have," I'm not really prepared to answer that. We'd, of course, be happy to work with you on these kind of jurisdictional issues. Obviously, there are major resource implications to us taking over any other authority, particularly on a subject as broad as oil platforms.

Senator ISAKSON. I appreciate the answer to the question.

And, Mr. "Numbarger"—is that——

Mr. NIBARGER. Nibarger.

Senator ISAKSON. Nibarger. Is your expertise in—have you done any stuff in oil rigs offshore, or is yours primarily on——

Mr. NIBARGER. No, sir. No.

Senator ISAKSON. You were steelworkers.

Mr. NIBARGER. Yes. It's refining.

Senator ISAKSON. Refining.

Mr. NIBARGER. Yes.

Senator ISAKSON. But, compliance is your responsibility now.

Mr. NIBARGER. Yes.

Senator ISAKSON. OK, great.

And, Mr. Sawyer, what about OSHA having some regulation on a deepwater well? What would be your opinion? "Some authority" or "authority" for safety?

Mr. SAWYER. My opinion, I would think OSHA should have some authority over deep well oil rigs.

Senator ISAKSON. What do you think, Mr. Drevna?

Mr. DREVNA. Like I said, Senator, we do not represent that segment of the industry, so.

Senator ISAKSON. But, you do represent the industry as—onshore for——

Mr. DREVNA. Not for drilling, sir, only for taking the crude and making it into gasoline, diesel, and other products.

Senator ISAKSON. OK. I apologize.

Mr. DREVNA. Yes.

Senator ISAKSON. Out of curiosity, we were talking a little bit about MSHA and about—well, about inspections, in general. Mr. Barab, in terms of—What would trigger an OSHA inspection today? Is it an internal complaint that there's a problem, or do you all have any type of regular scheduled inspection process on drilling rigs that are onshore?

Mr. BARAB. Well, with any workplace, there's a variety of things that would trigger an inspection. Obviously, a fatality, what we call a "catastrophe," where multiple workers are hospitalized, a worker complaint—a formal complaint from a worker.

In terms of oil rigs—I'm sorry—oil and gas rigs on land, several of our regions and several of the State plans also have what's known as Local Emphasis Programs. And what that means is, they put—same thing as our National Emphasis Program for the refineries—we put special emphasis on making sure that we get out to visit as many of those facilities as we can without waiting for a fatality, or without waiting for a complaint.

Senator ISAKSON. So, most of it is subject to something going wrong, and you come in to find out what they should have done.

Mr. BARAB When things have been going wrong—yes, most of it—well, a lot of it is. We have a targeting system where we target, based on injuries and illnesses. Again, we have our incident inves-

tigations when there's been a fatality. When there are indications that there are a number of problems in any kind of industry sector, that's when we either do a National Emphasis Program or, in the cases where it's more localized, a more Local Emphasis Program. And, again, we now have a National Emphasis Program for refineries. And we have six Local Emphasis Programs around the States that focus on oil and gas drilling operations.

Senator ISAKSON. And you're not familiar with MMS, in terms of whatever their procedures are.

Mr. BARAB. I've learned a lot about MMS over the last few weeks, but, no, I'm not intimately familiar with their procedures.

Senator ISAKSON. Madam Chairman, this is a little late, because I probably should have thought of this earlier, but we might have a hearing and invite MMS to tell us how they reach the conclusions on prelicensing of a rig. Because I know they have safety compliance requirements they put in, in terms of drilling, and then what their inspection process is. Because they evidently would, right now, under the statutes, have the authority to do that. Am I correct?

Mr. BARAB. Yes. There was actually an article in the *Washington Post* today about some of the MMS procedures and how frequently they have to inspect, and their issues with staffing and expertise. I thought it was very informative.

Senator ISAKSON. We'll look into that.

Thank you very much.

Senator MURRAY. Thank you.

Senator Franken.

Senator FRANKEN. Thank you, Madam Chair.

Mr. Drevna, in your written testimony, you provided us with one chart.

Mr. DREVNA. Yes, sir.

Senator FRANKEN. OK. It was a chart that you, I guess, chose to be the most important chart for us to see.

And in the chart, it shows your organization's report of occupational injury and illness. And you had Mr. Barab at your conference?

Mr. DREVNA. Yes, sir.

Senator FRANKEN. Did Mr. Barab, at your conference, say what he said here in testimony, that he's sick and tired about hearing about the industry's safety record while burying fathers and mothers?

Mr. DREVNA. He didn't say it in those exact terms, sir, but, yes, he did specifically talk about the chart. And my response would be, sir, that we don't collect that data that way. That is not our chart. That is the government chart. And I agree, we need to compare ourselves to ourselves. We have to look in the mirror when it comes to health and safety. That's a reporting of government data, just to indicate that we are striving, daily, to enhance safety, to enhance the culture. And I understand that, in my opinion, we don't compare ourselves; the government does. But, our job is to compare ourselves to ourselves, and do better.

Senator FRANKEN. Here's my problem. You chose, in your written testimony, as I say, to provide us with one chart. Mr. Nibarger also pointed out that the injury and illness or record has absolutely no

correlation to these—what we're actually talking about today, which are these explosions and these catastrophes that cause death. And Mr. Barab said it, as well. And my question is, Why would you include this chart that doesn't in any way correlate to what we're talking about today?

Mr. DREVNA. Well, Senator, it does correlate. Those statistics are captured in that chart.

Senator FRANKEN. No, they're injury and illness.

Mr. Barab, am I correct in characterizing your testimony?

Mr. BARAB. Well, yes. And our basic point is that injury and illness statistics do not provide a lot of predictive value as to the likelihood of the plant blowing up.

Senator FRANKEN. And, Mr. Nibarger, am I correct in my characterization of your testimony?

Mr. NIBARGER. Yes, I would say that the refinery operators are very cautious people, they're very well-educated, and they pride themselves in not injuring themselves. But, process safety is not indicated from occupational injury and incident rates. They're two separate things.

Senator FRANKEN. So, I'd certainly say that, of the three witnesses who talked specifically about these illness and injury rates, two of them, who are not tied—not president of your organization, have said that they have no correlation whatsoever with the subject of today's hearing. And that troubles me.

Let's move on to the work safety culture. And, Mr. Drevna, I understand you don't directly represent BP.

Mr. DREVNA. That's correct.

Senator FRANKEN. And right now we're paying attention to BP's deepwater drilling, which your organization has nothing to do with. You're about refining.

However, I saw an analysis, of the Center for Public Integrity, which showed that 97 percent of all flagrant violations in the refining industry over the past 3 years went to BP.

Mr. DREVNA. Senator, I saw that same report.

Senator FRANKEN. OK. And I have another thing that comes from OHSA citations, to U.S. refineries, of "egregious willful citations"—760 for BP; other refineries, 1.

Mr. DREVNA. Senator, I also saw that report.

Senator FRANKEN. Would you say that BP has a good workplace safety culture?

Mr. DREVNA. Senator, that's not for me to judge.

Senator FRANKEN. OK. Yes, you don't want to draw conclusions hastily.

[Laughter.]

BP received a total of 862 citations between June 2007 and February 2010 for alleged violations at its refineries in Texas City and Toledo, OH, both of which had fatal accidents. I did a little research into the two facilities in Minnesota, and there were only five citations issued during a recent 5-year period. These are pretty dramatic discrepancies.

Let me ask you another more theoretical question. What factors influence the workplace culture toward process safety? Can you speak to that?

Mr. DREVNA. Yes, sir——

Senator FRANKEN. Oh.

Mr. DREVNA. I can. And even to go back to, hopefully, answer your other question a little bit better, if there is—I think your statistics that you've referenced there, document the fact—as I said in my testimony, that it's not a systemic problem throughout the industry. Now, again, I'm not here to say that there's no problem throughout—in the industry.

Senator FRANKEN. Right.

Mr. DREVNA. Yes.

Senator FRANKEN. I understand. In fact, you made a very good point. You said there are bad actors and then there are others.

Mr. DREVNA. Yes. But, the process safety is exactly what this—the workshop that we are going to be conducting with OSHA, with Chemical Safety—we hope, with the Chemical Safety Board, the USW, the trade unions. So everyone can sit around the table and figure out exactly where, when, how—and as I think Senator Isakson said earlier, let's learn from the past, but let's make sure it doesn't happen in the future. Let's look forward.

Senator FRANKEN. I think that's a great attitude. And I hope you do those workshops. I hope you do them with OSHA.

Mr. DREVNA. Yes.

Senator FRANKEN. But all I would suggest is—and I know I've run out of time, Madam Chair—is that when you're the president of the Petrochemical & Refiners Association—and when you have one company that has 97 percent of all the flagrant violations in your industry, maybe—and I don't know, I haven't been in your position.

Mr. DREVNA. Senator, may I suggest that—we represent over—almost approaching 93, 94 percent of the total capacity in the country, on the refining side. We do not represent BP on the refining side in our association.

Senator FRANKEN. You don't represent BP—in other words, it isn't part of your association?

Mr. DREVNA. No, sir, not on the refining side.

Senator FRANKEN. Oh. So, I see. So, you have nothing to say about BP.

Mr. DREVNA. I stand by my written statement and my oral statement, sir.

Senator FRANKEN. OK. Well, I understand that, but why don't you elaborate on that. That, in other words, BP doesn't belong to your organization.

Mr. DREVNA. Not on our refining side, sir, no.

Senator FRANKEN. Not on the refining side.

Mr. DREVNA. They belong on the petrochemical side.

Senator FRANKEN. On the petrochemical side.

Mr. DREVNA. Yes, sir.

Senator FRANKEN. OK. I see. Thank you.

Senator MURRAY. Let me follow up on that. I'm really confused by that, because on your Web site, it says you do represent BP.

Mr. DREVNA. On the petrochemical side.

Senator MURRAY. OK. So, I know you're in the hot-seat here, and that can't be a friendly one this morning, but it really struck me, because in your opening statement, you said, nothing—absolutely nothing—is more important to you than workplace safety. And

we're sitting here today, in the past 2 months alone, with 13 fires, 19 deaths, and 25 injuries in the oil and gas industry. There's been an average of one fire every week this year at our refineries. And one of the companies that you don't represent, on one side, BP, has two refineries that accounted for 760 egregiously willful safety violations in 2 years. So, are you not standing behind BP, then?

Mr. DREVNA. I'm standing behind the industry, that we could never guarantee that there will be no accidents in this industry.

Senator MURRAY. Do you think that BP ought to come to the table on this?

Mr. DREVNA. Madam Chair, that is a discussion for OSHA and BP.

Senator MURRAY. Well, and as I have indicated several times here, we invited BP to be here today, and they refused to come. So you're it.

Mr. DREVNA. The rest of the refining industry did choose to come. And I appreciate the opportunity, ma'am.

Senator MURRAY Yes, and, Mr. Drevna, I do appreciate your coming and doing that. But, it is deeply troubling to me, to this committee, as we are trying to look at the industry as a whole and understand what happened and make the right decisions for the future. And I know you're not "it," but——

Mr. DREVNA. Well, we—I could take a little bit of exception to that, Madam Chair, in that when you look at the statistics, we do represent the vast majority of the industry capacity, and we've——

Senator MURRAY. Does your industry stand behind BP?

Mr. DREVNA. That, I believe is a question that—again, that the—"stand behind" is a broad term, ma'am. And there's so many different things going on right now. We have got to do better, as a total industry. I'll be the first to admit that. My industry will be the first to admit that. That's why we want to sit down with OSHA, Steelworkers, the other trade unions, and work this thing through. And, again, not through press releases or theatrics, but through real, hard, roll-up-the-sleeves kind of action.

Senator MURRAY. And I would just say, that's what this committee wants to do. It's hard to do when BP won't come to the table and be a part of the discussion.

Mr. DREVNA [continuing]. But, I can guarantee you that the rest of the industry will be actively working.

Senator MURRAY. Well——

Mr. DREVNA. I've got a commitment from——

Senator MURRAY [continuing]. I would suggest that the rest of the industry actively tell BP how it feels to be sitting there.

I just have a couple more questions.

Mr. Sawyer, I did want to ask you—because it is my understanding that Contra Costa County's industrial safety ordinance has been regarded as highly successful. And I really appreciate that. It's well received by leaders in the oil industry. And, since the implementation of that ordinance, the number and severity of major chemical accidents have steadily decreased.

So, I wanted to ask you today, Do you believe that the oil and gas industry would voluntarily provide the same level of worker protection as your county's industrial safety ordinance?

Mr. SAWYER. Some of the companies, I think, would. But, I don't think all the companies would. And, as previously mentioned, there are some very good companies, some very good refineries out there that do very good work and some——

Senator MURRAY. Right.

Mr. SAWYER. [continuing]. That had to come and—be forced into it.

Senator MURRAY. So, voluntary covers the ones who want to be good, and——

Mr. SAWYER. That's correct.

Senator MURRAY. You also mentioned that the Contra Costa Health Services has six engineers with industrial experience on your staff who are dedicated to this, and that when an audit occurs at a petroleum refinery, it can take five engineers 4 weeks to complete the audit.

How critical is it, in your estimation, to have highly qualified engineers with relevant industrial experience on the staff to carry out the requirements of the ordinance?

Mr. SAWYER. I believe it's highly critical. I think it's very important that the people who are regulating the facilities understand the facilities and be able to talk to the people in like ways.

Senator MURRAY. OK. So, in your estimation, having those qualified people, whoever are inspecting them, is extremely important.

And, Mr. Barab, how many qualified inspectors do we have today at OSHA?

Mr. BARAB. We have about 300 that are qualified to participate in these inspections. We have about 100 that are qualified to be team leaders in this.

Senator MURRAY. Engineers?

Mr. BARAB. They're not all engineers. They've been trained—they're OSHA inspectors—they've been trained.

Senator MURRAY. And, in your estimation, is that enough?

Mr. BARAB. Well, it's not—let me put it this way, it's not enough to have a regular presence in each refinery the same way that Contra Costa County has.

Senator MURRAY. And we see that this did make a difference, in his county. All right.

Senator Franken, do you have any additional questions?

Senator FRANKEN. Well, I'm just curious about something, Mr. Drevna. You say that BP isn't part of the National Petrochemical & Refinery Association—on refining, on that part.

Mr. DREVNA. Yes, sir.

Senator FRANKEN. OK. I've got it. They do belong in petrochemicals. Is that common? Are there other very big refiners who aren't part of your organization, or did——

Mr. DREVNA. No, sir.

Senator FRANKEN. There aren't.

So, everybody else but BP is part of your association.

Mr. DREVNA. Well, there are a few——

Senator FRANKEN. I mean, that's big——

Mr. DREVNA. Absolutely, sir. Yes.

Senator FRANKEN. I just find that interesting.

You don't know why?

Mr. DREVNA It's the business decision that was made by them.

Senator FRANKEN. OK. Because you were talking about good actors and bad actors. And I think we may have identified a bad actor.

Mr. DREVNA. Well, I—

[Laughter.]

Senator FRANKEN. Thank you, sir.

Senator MURRAY. Thank you all very much, to our witnesses. I really appreciate your being here.

And before we close, today, I just wanted to say that, earlier this week, our House colleagues, Chairman Stupak and Ranking Member Barton, on the Subcommittee on Oversight and Investigations, did send a letter to chairman John Bresland of the Chemical Safety Board to investigate the root causes of the April 20 blowout on the Deepwater Horizon rig. That letter references CSB's past work on investigation into BP's 2005 explosion, at BP's Texas City refinery, and the comparisons to safety concerns that contributed to the massive leak at a BP pipeline in Prudhoe Bay, AK, in 2006, as reasons the CSB is uniquely qualified to investigate this latest tragedy on the Deepwater Horizon rig.

For the record, I want you all to know I support that investigative request. And with it, I do want to encourage my colleagues in the Senate to swiftly confirm Dr. Rafael Moure and Mr. Mark Griffon to fill the current vacancies on the U.S. Chemical Safety Board so that the CSB has the resources and the staff they need to begin this investigation as soon as possible.

The families of the 11 workers who lost their lives deserve to have factual information about what happened to their loved ones that dreaded day. And so, we can move forward with any changes necessary to make sure a disaster like this just never happens again.

I wanted to say that, and thank our witnesses for being here today and participating in this important hearing.

Know that members may want to submit additional questions to any of you for your written response.

And for any of our members who want to submit a statement, the hearing record will be open for the 7 days.

And before we close, without objection, I would like to submit this United Steelworkers Oil Worker Newsletter. It's dated—issue number 13, dated June 8, 2010, for the record.

[Editor's Note: Due to the high cost of printing previously published materials are not reprinted in the hearing record. To obtain the above referenced article please go to: http://assets.usw.org/publications/oil.]

Senator MURRAY. And with that, this hearing is adjourned.

[Additional material follows.]

ADDITIONAL MATERIAL

NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION, NPRA,
WASHINGTON, DC 20006,
June 22, 2010.

Hon. JOHNNY ISAKSON, *Ranking Member,*
U.S. Senate HELP Committee,
Subcommittee on Employment and Workplace Safety,
410 Dirksen Senate Office Building,
Washington, DC 20510.

DEAR SENATOR ISAKSON: I appeared before the Subcommittee on Employment and Workplace Safety on June 10, 2010 to testify on "Production Over Protections: A Review of Process Safety Management in the Oil and Gas Industry."

Attached please find answers to the questions that you submitted.

On behalf of NPRA, I look forward to working further with the committee on this issue.

Sincerely,

CHARLES T. DREVNA, *President.*

RESPONSE BY CHARLES T. DREVNA TO QUESTIONS OF SENATOR ISAKSON

Question 1. Can you elaborate on the statistics NPRA collects? How do those statistics differ with those collected by the Bureau of Labor Statistics? Please describe the metrics available for analysis?

Answer 1. NPRA has compiled a report of Occupational Injuries and Illness statistics for employees in accordance with OSHA recordkeeping rules since 1976. The latest Occupational Injury and Illness statistics we have are for calendar year 2008. The calendar year 2009 report will be completed next month. The NPRA report contains a compilation of statistics relating to company employee and contractor fatalities, injuries and illness to better reflect the actual rate of injury and illness at facilities.

There are several differences between NPRA's statistics and those of the Bureau of Labor Statistics (BLS). In the NPRA Occupational Injuries and Illness report, NPRA includes fatalities in the Total Recordable Incident Rate, whereas the BLS does not. NPRA surveys on average 80–85 percent of all refineries in the United States. This equates to approximately 90–95 percent of NPRA members. The BLS surveys only a handful of refineries in its reports, so it is only a small sampling of domestic refineries. Additionally, the BLS does not collect contractor injury and illness statistics and include them with statistics from the petroleum refining industry. Including these statistics, as NPRA does, gives a more accurate reflection of the incident rates throughout American refineries. We agree with OSHA and the USW that the BLS statistics do not accurately reflect the industry as a whole, which is why NPRA's statistics capture much more than "trips, slips and falls."

As I mentioned during the hearing, NPRA's statistics do include all workforce injuries that were a consequence of a process safety event (i.e. fire, chemical release, or explosion). In January 2011, NPRA will begin to formally collect process safety leading and lagging indicators based on the API standard ANSI API RP 754, "Process Safety Performance Indicators for the Refining and Petrochemical Industries." This data will provide the industry with a more complete picture of process safety at our Nation's refineries and petrochemical facilities.

Question 2. USW's testimony states, "There have been 29 fires and explosions reported in refineries so far this year. In the majority of those no one was hurt but that was primarily a matter of luck." Do you really consider it simply to be good luck that few employees were hurt in 29 refinery fires? Do you believe some credit should be given to the improvement of safety procedures at these facilities?

Answer 2. It is absolutely not luck that few employees were hurt in the instances referenced. Improvements in safety procedures at facilities certainly deserve some credit for preventing injuries in these incidents. As I mentioned in my testimony, "These aren't your father's refineries." Industry is continuously evolving their technologies and procedures. Our members have been constantly working to maximize protections and minimize exposures. Our companies have procedures to keep employees out of hazard areas and have implemented several layers of protection on all equipment and processes to limit risk of exposure and/or injury of their workforce. The NPRA Occupational Injury and Illness statistics show constant improvement by the industry in decreasing the number of company employees and contrac-

tors injured on the job. This can be attributed to better safety procedures and improved technological advancements in the industry over the years. The steps industry has taken certainly deserve credit for the fact that the 29 incidents mentioned resulted in very few injuries. Petroleum manufacturers take workplace safety very seriously, because they know that when you are working with highly hazardous chemicals, you cannot avoid injury through "good luck."

While we have a good track record, I want to emphasize the points made in my testimony: We want to make sure it stays that way. The status quo will never be good enough for our membership. We take EVERY incident seriously and work to develop lessons learned in the aftermath of any incident to assess what went wrong and how to do things better. The process safety workshop we're holding with OSHA and union officials later this year will help us continue advancing our goal of zero incidents and injuries.

Question 3. USW and OSHA witnesses seemed to claim that current OSHA authority is insufficient because it provides too much leeway for businesses to contest fines and penalties through a lengthy and costly legal process. Both witnesses also seemed to claim that partly because of this alleged problem with Federal authority, companies are not taking steps to correct problems that are discovered during inspections. What is your response to this accusation?

Answer 3. After an OSHA inspection, there is a settlement process that allows both OSHA and the company due process in the enforcement proceedings. This is different from a company contesting a citation. Very few citations actually get contested and go through legal proceedings. A majority of citations are codified during the settlement process that allows both parties to discuss the citations and come to an agreement on how and if the citation requires abatement. This prevents citations from being contested in a long and lengthy legal process. There are several reasons why a company and OSHA choose to settle a citation. Below are a few examples:

(a) The inspector might not have fully understood the engineering principles and analysis that went into decisions made by the company. The Process Safety Management standard is a performance-based standard. Because no refinery is the same, each facility will have slightly different process hazard analysis and safety devices. There tend to be situations where OSHA and the company may have different perspectives on how to comply with the PSM standard. In this situation, the citation is usually settled once both parties discuss each other's perspective. It is unrealistic to expect OSHA investigators to intimately know the technical details of each facility they inspect. This in no way implies that there are hazards that OSHA, "allows to slip through the cracks," but merely acknowledges that not every initial citation is the best approach to process safety for that specific refinery.

(b) The company was in the process of making improvements. If a company has a project in progress to address an issue or comply with a new standard, but that project is not complete at the time of inspection, OSHA will still issue a citation in the exact same manner as if the company wasn't doing anything at all and was out of compliance. An example of this is if a company is in the process of building blast resistant trailers to comply with API RP 753, the inspector would cite that company the same way as if they had made no effort to comply with the Facility Siting Standard for portable buildings. These issues are addressed during the settlement process instead of getting formally contested.

(c) The company settled to invest in an upgrade that is more than the fine itself. The settlement process is not just about the company, it also gives OSHA the opportunity to discuss safety improvements with the company. A citation may be settled if the company agrees to make an investment in the refinery. This is a win-win situation for everyone and would not happen if there were no period allowed for an informal settlement.

As mentioned above the settlement process benefits both OSHA and the company in improving workplace safety. However, given the complexity of each scenario behind a citation, companies cannot review a list of citations and interpret them to enhance workplace safety at their own facilities without knowing the thought process behind the citations from both OSHA and the company. Process safety relies heavily on documentation and an investigation requires OSHA to review thousands and thousands of documents. A majority of the citations reference lapses in paperwork and have no reference to the management systems behind the process safety program. For this reason, lessons learned from the Baker Report, CSB reports and videos, and industry presentations at conferences are extremely beneficial in the learning process and enhancing process safety programs due to their in-depth analysis, detail, and recommendations for enhancing the management system which is the backbone of safety programs at a refinery.

AMERICAN PETROLEUM INSTITUTE, API,
WASHINGTON, DC 20005,
June 17, 2010.

Hon. PATTY MURRAY, *Chairman,*
U.S. Senate,
Committee on Health, Education, Labor, and Pensions,
Subcommittee on Employment and Workplace Safety,
428 Senate Dirksen Office Building,
Washington, DC 20510.

Hon. JOHNNY ISAKSON, *Ranking Member,*
U.S. Senate,
Committee on Health, Education, Labor, and Pensions,
Subcommittee on Employment and Workplace Safety,
428 Senate Dirksen Office Building,
Washington, DC 20510.

DEAR CHAIRMAN MURRAY AND RANKING MEMBER ISAKSON: API would like to address a potential misunderstanding that could result from the written testimony provided by Kim Nibarger of the United Steelworkers Union (USW) at the June 10, 2010 subcommittee hearing. In Mr. Nibarger's written testimony, he states the following:

> As a result of another U.S. Chemical Safety Board (CSB) recommendation from BP Texas City, we have seen trailers for the most part moved out of predicted blast zones only to be replaced by tents which are allowed by a newly written API Recommended Practice.

It is correct that API has published two recommended practices addressing process plant building locations: API Recommended Practice (RP) 752, *Management of Hazards Associated with Location of Process Plant Permanent Buildings,* and API RP 753, *Management of Hazards Associated with Location of Process Plant Portable Buildings*. Tents, lightweight fabric enclosures, and other soft-sided structures are not classified as either permanent buildings or portable buildings and, as a result, are not covered by either recommended practice.[1] It is misleading, therefore, for the USW to state that API RPs allow tents to be placed in predicted blast zones.

The oil and natural gas industry, however, recognizes that the placement of tents merits further analysis. To that end API and NPRA conducted an industry forum in January, with OSHA support and participation, which concluded that further industry guidance on tent siting is needed. API has since initiated a new effort to develop industry relevant recommendations, as the factors associated with the safe location of tents may be vastly different from those of permanent and portable buildings.

API's standards program is accredited by the American National Standards Institute (ANSI) and our process is open to participation by all materially affected parties. We welcome and encourage the USW, along with government representatives and other interested stakeholders, to participate in this important effort.

Thank you for the opportunity to provide this clarification, and should you require additional information, please contact David Miller, API Standards Director, at 202–682–8159.

Sincerely,

ROBERT L. GRECO,
Group Director,
Downstream and Industry Operations.

[Whereupon, at 11:47 a.m., the hearing was adjourned.]

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[1] RP 752, Section 1, "Scope"; RP 753, Section 1.7.10. "Definition—Portable Building".