

# THE BP TEXAS CITY DISASTER AND WORKER SAFETY

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## HEARING

BEFORE THE

### COMMITTEE ON EDUCATION AND LABOR

U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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## **THE BP TEXAS CITY DISASTER AND WORKER SAFETY**

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**Thursday, March 22, 2007  
U.S. House of Representatives  
Committee on Education and Labor  
Washington, DC**

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The committee met, pursuant to call, at 10:00 a.m., in room 2175, Rayburn House Office Building, Hon. George Miller [chairman of the committee] presiding.

Present: Representatives Miller, Kildee, Kucinich, Wu, Holt, Davis of California, Bishop of New York, Sanchez, Sarbanes, Sestak, Loeb sack, Hare, Shea-Porter, McKeon, Petri, Ehlers, Platt, Wilson, Boustany, Foxx, Bishop of Utah, and Walberg.

Staff Present: Aaron Albright, Press Secretary; Tylease Alli, Hearing Clerk; Jordan Barab, Health/Safety Professional; Michael Gaffin, Staff Assistant, Labor; Peter Galvin, Senior Labor Policy Advisor; Jeffrey Hancuff, Staff Assistant, Labor; Brian Kennedy, General Counsel; Thomas Kiley, Communications Director; Danielle Lee, Press/Outreach Assistant; Joe Novotny, Chief Clerk; Alex Nock, Deputy Staff Director; Megan O'Reilly, Labor Policy Advisor; Rachel Racusen, Deputy Communications Director; Michele Varnhagen, Labor Policy Director; Daniel Weiss, Special Assistant to the Chairman; Mark Zuckerman, Staff Director; Steve Forde, Minority Communications Director; Ed Gilroy, Minority Director of Workforce Policy; Rob Gregg, Minority Legislative Assistant; Victor Klatt, Minority Staff Director; Jim Paretto, Minority Workforce Policy Counsel; Molly McLaughlin Salmi, Minority Deputy Director of Workforce Policy; Linda Stevens, Minority Chief Clerk/Assistant to the General Counsel; and Loren Sweatt, Minority Professional Staff Member.

Chairman MILLER. Good morning. The Committee on Education and Labor will come to order for the purposes of conducting a hearing on the British Petroleum Texas City Disaster and Worker Safety. Today's hearing is the first in a series of hearings to examine the safety of America's workplaces and to determine whether or not agencies assigned to oversee workplace safety, in this case the Occupational Safety and Health Administration, are doing the job that Congress gave it when it was created 35 years ago. Over the next several months, we will be taking a look at OSHA's failure to issue important standards to protect American workers, the Bush administration's transformation of OSHA from a law enforcement organization into a so-called "voluntary compliance organization,"

the agency's inadequate efforts to protect immigrant workers who suffer from a high rate of workplace injuries and fatalities, the Nation's failure to protect public employees, the chronic under-reporting of workplace injuries and illnesses and the agency's respective penalty structure. Of course, we will also continue to keep a close eye on the safety of this Nation's miners, including hearings on that topic next week.

Today's hearing focuses on the cause of the disaster that unfolded when the explosion ripped through British Petroleum's Texas City refinery 2 years ago tomorrow, killing 15 workers and injuring 180. The British Petroleum explosion was the biggest workplace disaster in 18 years, yet it has received very little Congressional scrutiny until today. Even more upsetting is that 2 years after this catastrophe we are seeing a disturbing pattern of major fires and explosions in U.S. refineries.

Responding to the 1984 Bhopal, India disaster as well as several catastrophic refinery and chemical plant explosions in the United States, in 1990, Congress required OSHA and the Environmental Protection Agency to publish new regulations to prevent such accidents. In 1992, OSHA issued its process safety management standard requirements for refineries and chemical facilities to implement management systems and identify and control hazards to prevent disasters like the one in Texas City.

Today, we will explore why, 15 years after OSHA issued its standards, we are still seeing disasters in this Nation's refineries and chemical facilities that threaten workers' lives and safety of the surrounding communities. The questions arising from these reports are:

What can be done to prevent such catastrophes in the future? Why are this Nation's refineries neglecting well-recognized safety practices? Has the Occupational Safety and Health Administration been fulfilling its mission to ensure the safety of this Nation's refineries and chemical plants?

Protecting the safety of refinery/chemical workers is reason enough to get this right, but the safety of our refineries and chemical facilities also has broader implications in the communities surrounding these plants. According to the Environmental Protection Agency, there are 3,400 high priority chemical facilities in this country where a worst case release of toxic chemicals could sicken or kill more than 1,000 people in 272 sites and that could affect more than 50,000 people. This hearing has added resonance considering all of the attention that has been placed since 9/11 on the scrutiny of this Nation's chemical plants.

Despite the attention and the focus on the terrorist threat of our Nation's plants, the fact is that the British Petroleum Texas City explosion and other fires and explosions since then show that preventable accidents can also kill, injure and sicken people in large numbers, and we all pay the cost; for example, the higher gas prices of these explosions and resulting disruptions in our energy supplies.

Let me say also that this is not a new issue for me, and in fact, for me this issue is personal. I remember well a fire at the Tosco Avon refinery in my district in 1999 that killed four men and seriously injured another. That followed an incident at the same refin-

ery 2 years before that killed one worker. Recently again, California has suffered a major fire at the Chevron refinery, which has closed part of the plant and has caused gas prices to rise in California. Contra Costa County, my home county where the refinery is located, has issued its own industrial safety ordinance that requires an inspection every 3 years in accident prevention programs. In addition to annual inspections, one thing Contra Costa County does that OSHA does not do is collect information on near misses and the small incidents that can be used to predict the possibility of a major event. For example, from the information on the Contra Costa County's Web site, it shows that the Tesoro Golden Eagle refinery, formerly the Tosco refinery, where four were killed in 1999, has had 10 incidents—fires, explosions, chemical releases—in the past 3 years.

What we are doing at this hearing today is sadly an old story, but it is a story that must change. It is the story of a company that, despite a brilliant public relations effort, appears to have put profit before safety and has first sought to blame its workers for the systemic failures of its corporate safety system. It is a story of the failure of the Occupational Safety and Health Administration to ensure that these facilities are safe for the workers who work within them, but most of all, it is a story of loss, a story of children who have lost their parents, parents who have lost their sons and daughters, and men and women who have lost their husbands and wives.

The main reason that we have scheduled this hearing this week was due to the release of the Chemical Safety Board's report on the British Petroleum Texas City disaster 2 days ago. I want to commend the board for its excellent work and for its independence and for the work that it has done over the past several years and for the contributions this small agency has made to chemical plant safety. The lessons we have learned from the Chemical Safety Board's investigations are contributing to the savings of lives of workers and ensuring the safety of our communities.

While we have seen OSHA, the Mine Safety and Health Administration, and the EPA increasingly controlled by industries that they are supposed to be regulating, the Chemical Safety Board has been refreshingly unafraid to criticize and make recommendations to OSHA and to EPA. It is unfortunate, especially in the case of OSHA, that so many of these recommendations have gone unheeded.

With that, I would like to recognize the senior Republican of the committee, Mr. McKeon of California.

Mr. MCKEON. Thank you, Mr. Chairman.

With the Chemical Safety Board's having made public its report earlier this week on BP's Texas City tragedy, I thank you for convening today's hearing. Likewise, I appreciate each of the witnesses for joining us today and, in particular Ms. Rowe, for providing us what I expect will be a moving and important personal testimony.

Refining is an inherently dangerous process, and industry has the responsibility to ensure that appropriate steps are taken to safeguard the men and women working in a refinery as in other workplaces around the country. For example, during the preparation for refinery maintenance or for a refinery restart, management

of the facility has the obligation to follow the requirements of the process safety management standards.

In March of 2005 and, frankly, in the months and years leading up to it, independent reports, including that of the Chemical Safety Board, have found that BP fell short in this regard, and far too many families have paid dearly as a result. The repeated accidents and the number of citations at the Texas City facility should have alerted management to the potential for imminent danger, but that clearly was not the case. In the wake of this tragedy, BP cannot be and, indeed, has not been given a pass for its failings. It has agreed to pay the largest fines in OSHA's history, and it has taken independent recommendations to heart. Now the company must commit the time, the energy and, yes, the resources necessary to fulfilling those recommendations.

Mr. Cavaney, I was pleased to read in your prepared testimony that in the petroleum industry workplace safety is not just a matter of lip service. Rather, the industry is taking proactive and unprecedented steps to strengthen safety standards and recommended practices. I applaud your organization for taking the lead in keeping safety concerns at the forefront, and I am hopeful that, in the years to come, we will continue to see this type of forward thinking so we can prevent disasters instead of simply reacting to them.

As we move through today's hearing, I will be interested to hear the witnesses' perspectives on additional steps that can be taken within the industry to bolster workplace safety even more so that we can ensure that a disaster like the one that took place 2 years ago in Texas City will never happen again. For example, many of my colleagues and I have long proposed the concept of engaging third party consultants who specialize in specific industrial processes and who can provide enhanced safety inspections. Had such a third party audit been undertaken, it is not out of the realm of possibility that BP would have done more to rectify ongoing problems of which it had been made aware. Even so, the responsibility lies squarely at the feet of BP. As I noted earlier, that is why the company has been held to account under the Occupational Safety and Health Act by agreeing to pay the single largest fine in the law's history.

I know some have called for criminal investigation into this matter, and I believe OSHA's referral of this matter to the Department of Justice for a full criminal investigation is warranted. No corporation is above the law, and I believe the multi-pronged response to this tragedy has demonstrated just that.

Mr. Chairman, once again, I thank you for bringing this committee together today to review the findings of the Chemical Safety Board's report and to gather the testimony from our other witnesses. The subject of today's hearing could not be more unfortunate, but I believe the work we have seen at the Federal level and in the industry demonstrates our collective commitment to ensuring that the tragedy of this magnitude never occurs again.

Chairman MILLER. Thank you very much.

We are joined this morning by a distinguished panel of witnesses who I think will help us to better understand not only what tragically took place in Texas City, but also what we might do about



it with respect to policy changes that I think are necessary and that I think would be very helpful.

We will begin with the Chair of the Chemical Safety Board, Carolyn Merritt, who joined the board and became the Chair in August 2002. Chair Merritt's work on the Chemical Safety Board is involved in investigating process engineering and operations and management of environment and safety compliance systems in a wide range of manufacturing. Chairwoman Merritt was educated at Radford University with a degree in Analytical Chemistry.

Retired Admiral Frank L. "Skip" Bowman is a longtime naval officer and former Director of the Naval Nuclear Propulsion Program. He is currently President and Chief Executive Officer of the Nuclear Energy Institute. He is a graduate of Duke University in 1966, and in 1973, he completed a dual master's program in nuclear engineering, naval architecture and marine engineering at the Massachusetts Institute of Technology.

Eva Rowe is the daughter of James and Linda Rowe, contract workers who were killed in an explosion on March 23rd, 2005 at this British Petroleum refinery in Texas City, Texas. Ms. Rowe is working in Texas to spearhead the passage of the "Remember the 15" bill, which will improve worker health and safety standards in the petrochemical industry nationwide.

Ms. Rowe, I want to again thank you very much for being a witness, and I cannot tell you how sorry we are about the loss of your parents but how proud they must be of you in continuing this fight to make sure that those workers who are placed in the same circumstance have greater margins of safety and conscious awareness of the threats to them than your parents were afforded at that time, and thank you so very, very much for being here.

Red Cavaney is the President and Chief Executive Officer of the American Petroleum Institute. He served on the staff of U.S. Presidents Ronald Reagan, Gerald Ford and Richard Nixon. He is a 1964 NROTC graduate of economics and history at the University of Southern California and has served three tours of combat duty in Vietnam and was honorably discharged with the rank of U.S. Navy Lieutenant in 1969.

Kim Nibarger is the Health and Safety Specialist for the United Steelworkers Health, Safety and the Environment Department. Mr. Nibarger is currently conducting an investigation of the BP Texas City accident for the United Steelworkers. He also serves as an accident investigator for the Steelworkers' Emergency Response Team. Mr. Nibarger has had 17 years in refinery operations and has served as a member of the joint chair of the Steelworkers Joint Health and Safety Committee for 8 years. Mr. Nibarger is a graduate of Anacortes High School and attended the Lutheran Bible Institute and Western Washington University and Sky Valley College.

Welcome to all of you. We look forward to your testimony. Your written statements will be placed in the record in their entirety, and you may proceed for 5 minutes. There will be a green light when you start your testimony. About 4 or 5 minutes later, there will be an orange light, which suggests that you might want to begin wrapping up, and then a red light when your time has expired, but be assured that we will allow you to complete sentences

and complete thoughts before we cut you off, but as you can see from the attendance, there is an interest, and we want to make sure that there is time for questions.

Chairwoman Merritt, welcome.

**STATEMENT OF THE HON. CAROLYN W. MERRITT, CHAIR, U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD**

Ms. MERRITT. Thank you, Mr. Chairman, and good morning, and thank you to the members of the committee.

Thank you for calling this important hearing. I am Carolyn Merritt, Chairman and CEO of the U.S. Chemical Safety and Hazard Investigation Board, an independent Federal agency that investigates major chemical accidents. My statements this morning are being made as an individual board member.

On Tuesday, the CSB completed its investigation of the BP Texas City accident and issued a number of significant safety recommendations. On the afternoon of March 23rd, 2005, during the start-up of the refinery's ISOM unit, which is used to boost the octane in gasoline, a tower was overfilled with flammable liquid, flooding an antiquated blow-down drum and stack that vented directly into the atmosphere. In the space of a few minutes, the equivalent of a nearly full tanker truck of gasoline erupted and fell to the ground, vaporized, and exploded. Fifteen workers were killed, including James and Linda Rowe, whose tireless and courageous daughter, Eva, is here today. I know they would be very proud of the work that she is now embarking on.

Mr. Chairman, the accident at BP was avoidable. In my view, it was the inevitable result of a series of actions by the company. Among other things, they cut budgets that affected training, staffing, maintenance, equipment modernization, and safety. They ignored the implications of previous incidents that were red warning flags. There was a broken safety culture at BP. Between 2002 and March 2005, an ominous series of internal reports, safety audits and surveys warned BP managers and executives about the deteriorating safety conditions at Texas City. However, their response was simply too little, too late.

Our findings about BP's culture were similar to those of the independent Baker panel, which the CSB recommended and BP created and funded, and I thank Admiral Bowman and all of the other panel members for their outstanding efforts. The CSB found that the operators at Texas City were likely fatigued, having worked at least 29 straight days of 12-hour shifts. We recommended that the American Petroleum Institute and the United Steelworkers work together to develop consensus guidelines on preventing operator fatigue. All of the deaths and many of the injuries at Texas City occurred in or near trailers that were placed too close to the unsafe blow-down drum.

In October of 2005, the CSB issued an urgent safety recommendation to the American Petroleum Institute to develop new trailer safety siting guidelines. Trailers, which are sited for convenience and can shatter during an explosion, simply have no place in harm's way within refineries and chemical facilities. We also issued recommendations to both API and OSHA, aimed at eliminating unsafe blow-down drums from U.S. refineries and chemical plants in

favor of safer alternatives, such as flare systems. We urge API and OSHA to move quickly and aggressively on these issues and to take concrete steps right away to improve refinery safety.

Finally, the CSB found that regulatory oversight of this refinery was ineffective. In recent years, OSHA has focused its inspection on workplaces with high injury rates, but these rates do not predict the likelihood of a catastrophic process accident at a facility. Better measures than injury rates are necessary, and thus, we recommended that API collaborate with the steelworkers to develop new safety indicators.

Like thousands of other petrochemical plants, this refinery is regulated under OSHA's Process Safety Management standard issued in 1992. Rigorous implementation and enforcement of this rule, including its preventative maintenance and incident investigation requirements, would almost certainly have prevented this tragedy. However, despite 23 workers being killed at the Texas City refinery over the 30 years prior to this accident, OSHA did not conduct any comprehensive planned process safety inspections at this troubled facility. In fact, between 1985 and March of 2005, OSHA collected only \$77,000 in fines from this refinery. Clearly, such penalties have little impact on huge corporations like Amoco and BP. Furthermore, our investigation found that in the 10 years from 1995 to 2005, Federal OSHA only conducted nine comprehensive safety inspections nationwide and none at all in the refinery sector. OSHA simply lacked enough trained inspectors to conduct these audits.

The CSB report called on OSHA to identify those facilities and the greatest risk of a catastrophic accident and then to conduct comprehensive inspections of those facilities. We also recommended that OSHA hire, develop and train specialized inspectors for the oil and chemical sectors.

Mr. Chairman, our vision is imminently achievable, particularly if OSHA receives appropriate support, resources and encouragement from Congress. Thank you, Mr. Chairman, for the opportunity to testify this morning and for your longstanding support of our agency.

[The statement of Ms. Merritt follows:]

**Prepared Statement of Hon. Carolyn W. Merritt, Chair, U.S. Chemical Safety and Hazard Investigation Board**

Mr. Chairman and Members of the Committee: thank you for convening this important hearing on the tragic explosion at BP Texas City in 2005. I am Carolyn Merritt, Chairman of the U.S. Chemical Safety Board, an independent, non-regulatory federal agency patterned on the National Transportation Safety Board. We investigate the root causes of chemical accidents and develop new safety recommendations based on our findings.

On Tuesday, we completed our investigation of the BP Texas City accident and issued a number of new national safety recommendations. To conduct this investigation, we interviewed 370 witnesses, reviewed more than 30,000 documents, and did extensive equipment testing and computer modeling. BP cooperated with the investigation, furnished documents and interviews on a voluntary basis, and committed to widespread safety improvements and investments following the accident.

Mr. Chairman, two years ago tomorrow, the BP Texas City Refinery, the third largest in the United States, was the site of the worst workplace accident in this country since 1990. Fifteen people died, including James and Linda Rowe, whose courageous daughter is sitting here this morning at the witness table. One hundred and eighty others were hurt, many with severe and disabling injuries.

The explosion occurred during unit startup, one of the most hazardous periods in a refinery. A distillation tower was overfilled with liquid, flooding an antiquated blowdown drum and stack that vented directly to the atmosphere. Flammable liquid—nearly the equivalent of a full tanker truck of gasoline—erupted onto the plant grounds, vaporized, and exploded.

In our final report, we concluded that organizational and safety deficiencies at all levels of the BP Corporation caused this terrible accident. We found widespread safety culture deficiencies both at the Texas City Refinery and at higher levels of BP.

Over many years, a combination of corporate cost-cutting, production pressures, and a failure to invest had eroded process safety at this refinery. Between 2002 and March 2005, an ominous series of internal reports, surveys, and safety audits warned BP managers and executives about the deteriorating conditions in Texas City. However, their response was simply too little, too late. Some additional investments were made, but they did not address the core process safety and maintenance problems at the refinery. And further budget cuts were enacted, even as late as early 2005.

Budget considerations forced reductions in training, personnel, and the maintenance and modernization of critical equipment. These reductions had adverse effects on safety and set the stage for the March 2005 disaster.

Our investigation also revealed a variety of technical factors that were among the causes of the accident. Specifically, we examined the unsafe placement of trailers in the refinery, and the absence of a modern flare system for controlling flammable releases.

All the deaths and many injuries occurred in or near trailers that were as close as 121 feet from the unsafe blowdown drum. The investigation revealed that trailers are more vulnerable than predicted by available industry guidance. People inside trailers were injured as far as 479 feet away from the blowdown drum, and trailers nearly 1000 feet away sustained damage. A human being is more likely to be injured or killed inside a trailer—which can shatter during an explosion—than if he is standing in the open air. For that reason, occupied trailers have no place near hazardous process areas of refineries and chemical plants.

In October 2005, we issued an urgent safety recommendation to the American Petroleum Institute, whose president is here today, to develop new safety guidance preventing trailers from being placed in harm's way in oil and chemical plants. Trailers are portable by definition and can easily be moved to safer locations.

We also issued recommendations in October 2006 to both API and OSHA aimed at eliminating unsafe blowdown drums from U.S. refineries and chemical plants in favor of safer alternatives, such as flare systems. A flare system could have prevented or greatly minimized the effects of the accident in Texas City.

We urge API and OSHA to move quickly and aggressively on these issues and to take steps that will improve process safety in concrete and measurable ways.

In addition, our investigation found that errors and procedural deviations occurred during the startup on March 23. We performed a human factors analysis to understand the causes for these mistakes and deviations. That analysis showed that unit operators in Texas City were likely fatigued, having worked at least 29 straight days of 12-hour shifts.

Fatigue prevention regulations have been developed for aviation and other transportation sectors, but there are no fatigue prevention guidelines that are widely used and accepted in the oil and chemical sector. Our report recommends that API and the United Steelworkers work together to develop such consensus guidelines.

We also found shortcomings with control panel design, staffing, supervision, training, and communication. Surprisingly, we found that abnormal startups were common in this particular unit, with 18 out of 19 exhibiting abnormal levels and pressures. BP did not investigate these previous near-misses and did not install modern instrumentation on the distillation tower. Furthermore, much of the instrumentation that was present was not working due to flaws in preventative maintenance.

The BP Texas City Refinery is regulated under OSHA's Process Safety Management (PSM) standard, which was issued in 1992 as a result of chemical accident provisions included in the 1990 Clean Air Act Amendments. The PSM standard requires covered facilities to implement 14 specific management elements to prevent catastrophic releases of hazardous substances.

Our investigation found numerous requirements of the standard were not being effectively performed in Texas City—such as incident investigation, preventative maintenance, management of change, and hazard analysis. Required safety studies were overlooked for years. For example, a required relief valve study that, if done, could have helped prevent the accident was 13 years overdue on the day of the explosion.

If the Process Safety Management standard had been thoroughly implemented at the refinery, as required by federal regulations, this accident likely would not have occurred.

BP, industry, and OSHA are now focused on measuring and controlling lost-time injuries, which are a fundamentally backward-looking indicator. Injury rates do not predict the likelihood of a catastrophic process accident at a facility.

I know from personal experience as an industry safety executive in the 1990's that when the PSM regulation was established, it received great attention and investment throughout much of industry. But today, CSB investigations as well as my discussions with industry managers indicate that many companies have reduced their focus on these critical safety requirements. Without strong OSHA enforcement, PSM will devolve into essentially a voluntary program. Almost invariably, when we conduct an investigation of a major chemical catastrophe, we find that both PSM implementation and PSM enforcement were lacking.

Federal regulators did not conduct any comprehensive, planned process safety inspections at the Texas City Refinery. In fact, our investigation found that in the ten years from 1995 to 2005, federal OSHA only conducted nine such inspections anywhere in the country, and none in the refining sector. And the Texas City Refinery was an extremely dangerous workplace by any objective standard. In the 30 years prior to March 23, 2005, twenty-three workers had died there in workplace accidents. Counting the 15 workers who died on March 23 and another one who died there more recently, there have been a total of 39 deaths in that one facility.

OSHA did conduct unplanned inspections of the Texas City Refinery in response to accidents, complaints, or referrals. But these unplanned inspections are typically narrower in scope and shorter than planned inspections. Proposed OSHA fines during the twenty years preceding the March 2005 disaster—a period when ten fatalities occurred at the refinery—totaled \$270,255; net fines collected after negotiations totaled \$77,860. Following the March 2005 explosion, OSHA issued the largest penalty in its history to BP, over \$21 million for more than 300 egregious and willful violations.

Our report concluded OSHA has focused its inspections for a number of years on facilities that have injury rates. While OSHA is to be commended for trying to reduce these rates, the Chemical Safety Board believes that OSHA should also pay increased attention to preventing less frequent, but catastrophic, process safety incidents such as the one at Texas City.

When the PSM standard was created, OSHA had envisioned a highly technical, complex, and lengthy inspection process for regulated facilities, called a Program Quality Verification or PQV inspection. The inspections would take weeks or months at each facility and would be conducted by a select, well-trained, and experienced team. Indeed, thoroughly inspecting a 1,200-acre chemical complex with 30 major process units—like the Texas City Refinery—is no small undertaking and requires at least that level of effort.

On Tuesday, our report called on OSHA to identify those facilities at the greatest risk of a catastrophic accident and then to conduct comprehensive inspections of those facilities. We also recommended that OSHA hire or develop new, specialized inspectors and expand the PSM training curriculum at its National Training Institute.

Mr. Chairman, our vision is eminently achievable, particularly if OSHA receives appropriate support, resources, and encouragement from Congress. Other safety authorities have managed to do what we are proposing. For example, the U.K. Health and Safety Executive, which oversees a much smaller oil and chemical industry than exists in the U.S., has 105 inspectors for high-hazard facilities; each covered facility in the U.K. is thoroughly inspected every five years.

In your own district of Contra Costa, Mr. Chairman, the county has its own industrial safety ordinance and inspects each covered oil and chemical facility every three years. A county staff of five engineers performs an average of 16 inspections each year. So this one county, which is particularly enlightened, seems to be outpacing the rest of the nation.

Mr. Chairman, rules already on the books would likely have prevented the tragedy in Texas City. But if a company is not following those rules, year-in and year-out, it is the ultimate responsibility of the federal government to enforce good safety practices before more lives are lost.

Congress showed tremendous vision in 1990 when it reauthorized the Clean Air Act and made major accident prevention one of its cornerstones. However, I am concerned that since 1990, there has not been sufficient attention and investment in these programs to fully realize that vision. The tragedy in Texas City should cause us all to reflect and to resolve to do better in the future.

Thank you, Mr. Chairman, for the opportunity to testify this morning and thank you also for your longstanding support of our agency and its mission.

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Chairman MILLER. Thank you.  
Admiral Bowman.

**STATEMENT OF ADM FRANK "SKIP" BOWMAN (RET.), PRESIDENT, NUCLEAR SAFETY INSTITUTE, MEMBER, BAKER PANEL**

Admiral BOWMAN. Thank you very much, Mr. Chairman and distinguished members of the panel, for allowing me the opportunity to testify today.

Mr. Chairman, as you noted, I was one of eleven members of the BP's U.S. refineries' independent safety review panel, which was chaired by former Secretary of State Jim Baker. First, let me say I regret the circumstances that spawned our panel, and that is the catastrophic accident that the chairman just discussed that occurred at the BP Texas City refinery on March 23rd, 2005. I wish to extend my personal sympathy to all of the families, colleagues and friends of those who perished in that accident, including Ms. Eva Rowe, who is here with us today. I also wish to extend my best wishes for continued recovery to those who were injured in that accident.

As you just heard, in August 2005, the Chemical Safety Board urgently recommended that BP establish and form an independent panel to, quote/unquote, "assess and report on the effectiveness of BP North America's corporate oversight of safety management systems at its refineries and its corporate safety culture." That same urgent recommendation called for a panel with a diverse makeup, including experts in corporate culture organizational behavior and experts from other high-risk sectors such as nuclear energy and the undersea Navy.

I served on this panel, and I suspect I was selected to serve because of my career in the United States Navy and my current position associated with the commercial nuclear energy industry, and I suspect that Chairman Merritt included those two requests at least partly because of the significantly good and exemplary process safety record of those two organizations.

I served on this panel with 10 very distinguished, dedicated and hardworking members. Each member brought to the panel a unique set of skills and expertise, and together, we fulfilled the stated objective of the Chemical Safety Board.

I am hear today in my capacity as a member of that panel. In both my written statement and my oral testimony, I will rely very heavily on the executive summary from the panel's report, and I do not intend to interpret or add to that, to what the panel said in its report, which I think stands on its own. Instead, sir, I would highlight selected portions of it that may be of interest to you and to your committee.

Mr. Chairman, I ask for your approval to include in the record the panel's entire report along with my written statement.

Chairman MILLER. Without objection. Thank you.  
[The information follows:]

**Prepared Statement of ADM Frank “Skip” Bowman (Retired), President,  
Nuclear Safety Institute, Member, Baker Panel**

*Introduction*

Mr. Chairman and distinguished members of the Committee, I am Admiral Frank L. “Skip” Bowman, U.S. Navy (retired). I serve as president and chief executive officer of the Nuclear Energy Institute. In addition, and of particular relevance to the hearings by the Committee, I also served as one of the 11 members on the BP U.S. Refineries Independent Safety Review Panel, which was chaired by former Secretary of State James A. Baker, III. In the remainder of this statement, I will refer to that panel as “the Panel.”

First, let me say that I regret the circumstances that bring us here today—the catastrophic accident that occurred at the BP Texas City refinery on March 23, 2005. Tomorrow will be the second anniversary of that tragic event. I want to extend my sympathy to all the families, colleagues and friends of those who perished in that accident, including Eva Rowe, who is here today and who lost both of her parents in the accident. I also want to extend my best wishes for continued recovery to those who were injured in the accident.

In August 2005, the U.S. Chemical Safety and Hazard Investigation Board, which I will refer to as the “CSB,” issued to the BP Global Executive Board of Directors an urgent recommendation to form an independent panel to “assess and report on the effectiveness of BP North America’s corporate oversight of safety management systems at its refineries and its corporate safety culture.” That same urgent recommendation called for a panel with a diverse makeup, including experts in corporate culture, organizational behavior, and human factors; and experts from other high risk sectors such as nuclear energy and the undersea navy.

I was selected to serve on the Panel because of my background and experience with the nuclear navy. After graduating from Duke University in 1966, I immediately began my naval career, which spanned almost 39 years. In 1973, I completed a dual masters program in nuclear engineering and naval architecture/marine engineering at Massachusetts Institute of Technology. During the course of my naval career, I served aboard six ships, five of which were nuclear submarines, and I commanded the submarine USS City of Corpus Christi and the tender USS Holland. A flag officer since 1991, I also served as Deputy Director of Operations, Joint Staff; Director for Political-Military Affairs, Joint Staff; and Chief of Naval Personnel. I served as Director, Naval Nuclear Propulsion from 1996 to 2004, during which time I held a joint appointment as Deputy Administrator for Naval Reactors in the National Nuclear Security Administration of the Department of Energy. In that position I was responsible for the operation of more than 100 nuclear reactors aboard Navy aircraft carriers and submarines and in its training and research facilities. Throughout its history—including during my tenure—the nuclear navy’s safety record has been exemplary. Since 1953, U.S. nuclear warships have logged over 128 million miles in defense of our country.

In my role as Director, Naval Nuclear Propulsion, I testified before the House Science Committee investigating the Columbia Space Shuttle accident on the organizational culture of safety that has made Naval Reactors a safety success.

I served on the Panel with ten distinguished, dedicated, and hard-working members. Each member brought to the Panel a unique set of skills and expertise, and together I believe we fulfilled the stated objective of the CSB in having a diverse group with expertise in the different areas called for by the CSB’s urgent recommendation. As called for by our charter, the Panel’s review was thorough and independent. The Panel announced its final report in Houston on January 16, 2007, approximately two months ago.

I am here today in my capacity as a former member of the Panel. In that capacity, I will highlight for the benefit of the Committee certain aspects of the Panel’s report. In particular, I will rely heavily on the executive summary from the Panel report. In making my comments today, I do not intend to interpret or add to what the Panel said in its report, which stands on its own. Instead, I intend to highlight selected portions of the report that may be of interest to this Committee. Mr. Chairman, with your permission, I will submit a copy of the Panel’s entire report for the record. The Panel’s report can also be accessed at the Panel’s website, which may be found at <http://www.safetyreviewpanel.com>.

Before highlighting certain aspects of the Panel’s report, let me quote two portions from the Panel’s statement that preceded its report:

First, the very first sentence: “Process safety accidents can be prevented.”

Second, the following paragraph:

Preventing process accidents requires vigilance. The passing of time without a process accident is not necessarily an indication that all is well and may contribute

to a dangerous and growing sense of complacency. When people lose an appreciation of how their safety systems were intended to work, safety systems and controls can deteriorate, lessons can be forgotten, and hazards and deviations from safe operating procedures can be accepted. Workers and supervisors can increasingly rely on how things were done before, rather than rely on sound engineering principles and other controls. People can forget to be afraid.

Let me move now to highlight selected aspects of the Panel's review and report.

#### *Background of the Panel's Review*

On March 23, 2005, the BP Texas City refinery experienced one of the most serious U.S. workplace disasters of the past two decades, resulting in 15 deaths, more than 170 injuries, and significant economic losses. The CSB, an independent federal agency charged with investigating industrial chemical accidents, promptly began an accident investigation.

On August 17, 2005, the CSB issued an urgent safety recommendation to the BP Global Executive Board of Directors that it commission an independent panel to assess and report on the effectiveness of BP North America's corporate oversight of safety management systems at its refineries and its corporate safety culture. In making its urgent recommendation, the CSB noted that the BP Texas City refinery had experienced two other fatal safety incidents in 2004, a major process-related hydrogen fire on July 28, 2005, and another serious incident on August 10, 2005. Based on these incidents and the results of the first few months of its preliminary investigation, the CSB cited serious concerns about:

- the effectiveness of the safety management system at the BP Texas City refinery,
- the effectiveness of BP North America's corporate safety oversight of its refining facilities, and
- a corporate safety culture that may have tolerated serious and longstanding deviations from good safety practice.

BP embraced the urgent recommendation of the CSB to form an independent panel. In a press release issued on August 17, 2005, the company noted that the Texas City explosion was the worst tragedy in BP's recent history and that it would "do everything possible to ensure nothing like it happens again."

On October 24, 2005, BP announced the formation of the BP U.S. Refineries Independent Safety Review Panel. Former Secretary of State James A. Baker, III chaired the Panel. In addition to Secretary Baker and myself, the Panel included the following members:

- Glenn Erwin, who monitors refinery safety nationwide for the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union;
- Slade Gorton, former U.S. Senator from Washington State and member of the 9/11 Commission;
- Dennis C. Hendershot, Principal Process Safety Specialist at Chilworth Technologies, Inc., and a Staff Consultant to the American Institute of Chemical Engineers' Center for Chemical Process Safety;
- Nancy G. Leveson, Professor of Aeronautics and Astronautics and Professor of Engineering Systems at the Massachusetts Institute of Technology;
- Sharon Priest, former Arkansas Secretary of State and currently the Executive Director of the Downtown Partnership, a non-profit organization devoted to developing downtown Little Rock, Arkansas;
- Isadore 'Irv' Rosenthal, former board member of the CSB and current Senior Research Fellow at the Wharton Risk Management and Decision Processes Center;
- Paul V. Tebo, former Vice President for Safety, Health, and the Environment of DuPont;
- Douglas A. Wiegmann, Director of the Human Factors and Patient Safety Research Program within the Division of Cardiovascular Surgery at Mayo Clinic in Rochester, Minnesota; and
- L. Duane Wilson, former Vice President, Refining, Marketing, Supply & Transportation—Fuels Technology of ConocoPhillips.

#### *The Panel's Review*

##### *Purposes and Limitations*

It is important that the Committee understand the primary purposes—and also some of the primary limitations—of the Panel's work.

The Panel's charter directed it to make a thorough, independent, and credible assessment of the effectiveness of BP's corporate oversight of safety management systems at its five U.S. refineries and its corporate safety culture. The charter further directed the Panel to produce a report examining and recommending needed im-



provements to BP's corporate safety oversight, corporate safety culture, and corporate and site safety management systems. The charter did not contemplate that the Panel review environmental issues or general site security issues.

Significantly, the charter also provided that the Panel should not "seek to affix blame or apportion responsibility for any past event" and "should avoid duplicating the efforts of the CSB to determine the specific root causes of the incident at Texas City on March 23, 2005." Both the CSB and BP have investigated the March 23, 2005 accident at Texas City. BP issued its own investigation report on the Texas City accident in December 2005. The CSB issued the final report on its investigation on March 20, 2007, just two days ago.

Since the Panel was not charged to conduct an investigation into the causes of the Texas City accident and did not seek to affix blame or apportion responsibility for that accident, the Panel's focus and the scope of its review differed from that of the CSB and from the civil litigation relating to that accident. The Panel's review related to all five of BP's U.S. refineries, not just the Texas City refinery. The Panel examined BP's corporate safety oversight, corporate safety culture, and its process safety management systems and not the Texas City accident or any particular incident. The Panel's examination also was not limited to the period preceding the Texas City accident.

Rather than attempting to determine the root cause of, or culpability for, any particular incident, the Panel wanted to understand BP's values, beliefs, and underlying assumptions about process safety, corporate safety oversight, and safety management systems in relation to all of BP's U.S. refineries. The Panel focused on how these values, beliefs, and underlying assumptions interacted with the company's corporate structure, management philosophy, and other systems that operated within that structure to affect the control or management of process hazards in these refineries. The Panel sought to understand why observed deficiencies in process safety performance existed at BP's U.S. refineries so that the Panel could make recommendations that can enable BP to improve performance at all its refineries. In effect, the Panel's review looked back primarily as a basis for looking forward to improve future process safety performance and to reduce the likelihood of accidents such as the Texas City tragedy.

While the Panel necessarily directed to BP the Panel's recommendations contained in its report, the Panel believed that a broader audience including companies in refining, chemicals, and other process industries should carefully consider the Panel's recommendations.

#### *The Panel's Activities*

The Panel developed and followed a multifaceted plan to accomplish the mandate of its charter and the CSB's urgent recommendation. The plan included visits by the Panel and its staff to BP's U.S. refineries; public meetings that the Panel conducted in the local communities where the refineries are located; interviews of refinery-level personnel and corporate-level managers; process safety reviews that technical consultants conducted at BP's U.S. refineries; a process safety culture survey conducted among the workforce at BP's U.S. refineries; frequent interaction with BP representatives, including periodic briefings by representatives of BP; a targeted document review; and meetings with other companies relating to their management of process safety.

#### *Focus on Process Safety*

The Panel's report focused on process safety. Not all refining hazards are caused by the same factors or involve the same degree of potential damage. Personal or occupational safety hazards give rise to incidents—such as slips, falls, and vehicle accidents—that primarily affect one individual worker for each occurrence. Process safety hazards can give rise to major accidents involving the release of potentially dangerous materials, the release of energy (such as fires and explosions), or both. Process safety incidents can have catastrophic effects and can result in multiple injuries and fatalities, as well as substantial economic, property, and environmental damage. Process safety refinery incidents can affect workers inside the refinery and members of the public who reside nearby. Process safety in a refinery involves the prevention of leaks, spills, equipment malfunctions, over-pressures, excessive temperatures, corrosion, metal fatigue, and other similar conditions. Process safety programs focus on the design and engineering of facilities, hazard assessments, management of change, inspection, testing, and maintenance of equipment, effective alarms, effective process control, procedures, training of personnel, and human factors. The Texas City tragedy in March 2005 was a process safety accident.

The Panel believed that its charter and the CSB's August 2005 urgent recommendation required this focus on process safety.

### *The Panel's Findings*

The Panel focused on deficiencies relating to corporate safety culture, process safety management systems, and performance evaluation, corrective action, and corporate oversight.

#### *Qualifications Relating to the Panel's Findings*

The Panel's charter called for assessments of effectiveness and recommendations for improvement, not for findings related to legal compliance. In making its findings and recommendations, the Panel's objective was excellence in process safety performance, not legal compliance. As a result, the Panel's report and specifically the Panel's findings were not intended for use in legal proceedings to which BP is or may become a party. Rather, the Panel's findings provided a basis for recommendations to BP for making improvements in BP's corporate safety culture, process safety management systems, and corporate safety oversight. The Panel's report focused primarily on identified deficiencies that might be corrected through the implementation of its recommendations.

The Panel often based its findings and recommendations on general principles of industry best practices or other standards for reducing process risks. The Panel believed that observance of these standards should result in improved safety performance even though many of these standards do not necessarily have legal effect. The Panel's findings were based not only on the information developed during the course of the Panel's review, but also on the collective experience and expertise of the Panel members.

Finally, the Panel's findings were based on its assessment that occurred primarily during 2006. The Panel's report acknowledged that since the Texas City accident in March 2005, BP has undertaken or announced a number of measures, including dedicating significant resources and personnel, that are intended to improve the process safety performance at BP's five U.S. refineries. Taken at face value, these measures represent a major commitment to an improved process safety regime.

#### *Summary of the Panel's Findings*

The findings of the Panel are summarized below under three headings: Corporate Safety Culture; Process Safety Management Systems; and Performance Evaluation, Corrective Action, and Corporate Oversight.

##### *Corporate Safety Culture*

A positive safety culture is important for good process safety performance. In its report, the Panel made findings about BP's process safety leadership, employee empowerment, resources and positioning of process safety capabilities, incorporation of process safety into management decision-making, and the process safety cultures at BP's five U.S. refineries.

Process safety leadership. The Panel believed that leadership from the top of the company, starting with the Board and going down, is essential. In the Panel's opinion, it is imperative that BP's leadership set the process safety "tone at the top" of the organization and establish appropriate expectations regarding process safety performance. Based on its review, the Panel believed that BP had not provided effective process safety leadership and had not adequately established process safety as a core value across all its five U.S. refineries. While BP had an aspirational goal of "no accidents, no harm to people," BP had not provided effective leadership in making certain its management and U.S. refining workforce understood what was expected of them regarding process safety performance. BP has emphasized personal safety in recent years and has achieved significant improvement in personal safety performance, but BP did not emphasize process safety. BP mistakenly interpreted improving personal injury rates as an indication of acceptable process safety performance at its U.S. refineries. BP's reliance on this data, combined with an inadequate process safety understanding, created a false sense of confidence that BP was properly addressing process safety risks. The Panel further found that process safety leadership appeared to have suffered as a result of high turnover of refinery plant managers.

During the course of its review, the Panel observed a shift in BP's understanding of process safety. As discussed in the Panel report, BP has undertaken a number of measures intended to improve process safety performance. The Panel also recognized that BP executive management and corporate-level management have more visibly demonstrated their commitment to process safety in recent months.

Employee empowerment. A good process safety culture requires a positive, trusting, and open environment with effective lines of communication between management and the workforce, including employee representatives. The Panel found that BP's Cherry Point, Washington refinery has a very positive, open, and trusting envi-

ronment. BP's Carson, California refinery appears to have a generally positive, trusting, and open environment with effective lines of communication between management and the workforce, including employee representatives. The Panel found that at BP's Texas City, Texas, Toledo, Ohio, and Whiting, Indiana refineries, BP had not established a positive, trusting, and open environment with effective lines of communication between management and the workforce, although the safety culture appeared to be improving at Texas City and Whiting.

Resources and positioning of process safety capabilities. BP has not always ensured that it identified and provided the resources required for strong process safety performance at its U.S. refineries. Despite having numerous staff at different levels of the organization that support process safety, the Panel found that BP did not have a designated, high-ranking leader for process safety dedicated to its refining business. During the course of its review, the Panel did not develop or identify sufficient information to conclude whether BP ever intentionally withheld resources on any safety-related assets or projects for budgetary or cost reasons. The Panel believed, however, that the company did not always ensure that adequate resources were effectively allocated to support or sustain a high level of process safety performance. In addition, BP's corporate management mandated numerous initiatives that applied to the U.S. refineries and that, while well-intentioned, overloaded personnel at BP's U.S. refineries. This "initiative overload" may have undermined process safety performance at the U.S. refineries. In addition, the Panel found that operations and maintenance personnel in BP's five U.S. refineries sometimes worked high rates of overtime, and this could impact their ability to perform their jobs safely and increases process safety risk. BP has announced plans to increase both funding and hiring at its U.S. refineries.

Incorporation of process safety into management decision-making. The Panel also found that BP did not effectively incorporate process safety into management decision-making. BP tended to have a short-term focus, and its decentralized management system and entrepreneurial culture have delegated substantial discretion to U.S. refinery plant managers without clearly defining process safety expectations, responsibilities, or accountabilities. In addition, while accountability is a core concept within BP for driving desired conduct, the Panel found that BP had not demonstrated that it had effectively held executive management and refining line managers and supervisors, both at the corporate level and at the refinery level, accountable for process safety performance at its five U.S. refineries. The Panel observed in its report that it appeared to the Panel that BP now recognizes the need to provide clearer process safety expectations.

Process safety cultures at BP's U.S. refineries. The Panel's report found that BP had not instilled a common, unifying process safety culture among its U.S. refineries. Each refinery had its own separate and distinct process safety culture. While some refineries were far more effective than others in promoting process safety, significant process safety culture issues existed at all five U.S. refineries, not just Texas City. Although the five refineries did not share a unified process safety culture, each exhibited some similar weaknesses. The Panel found instances of a lack of operating discipline, toleration of serious deviations from safe operating practices, and apparent complacency toward serious process safety risks at each refinery.

#### *Process Safety Management Systems*

The Panel's report also discussed findings relating to the effectiveness of process safety management systems that BP utilized for its five U.S. refineries. These findings related to BP's process risk assessment and analysis, compliance with internal process safety standards, implementation of external good engineering practices, process safety knowledge and competence, and general effectiveness of BP's corporate process safety management system.

Process risk assessment and analysis. While the Panel found that all of BP's U.S. refineries had active programs to analyze process hazards, the system as a whole did not ensure adequate identification and rigorous analysis of those hazards. The Panel's examination also indicated that the extent and recurring nature of this deficiency was not isolated, but systemic.

Compliance with internal process safety standards. The Panel's technical consultants and the Panel observed that BP does have internal standards and programs for managing process risks. However, the Panel's examination found that BP's corporate safety management system did not ensure timely compliance with internal process safety standards and programs at BP's five U.S. refineries. This finding related to several areas that were addressed by BP internal standards: rupture disks under relief valves; equipment inspections; critical alarms and emergency shut-down devices; area electrical classification; and near miss investigations.

Implementation of external good engineering practices. The Panel also found that BP's corporate safety management system did not ensure timely implementation of external good engineering practices that support and could improve process safety performance at BP's five U.S. refineries. The Panel believed that such practices play an important role in the management of process safety in refineries operating in the United States.

Process safety knowledge and competence. Although many members of BP's technical and process safety staff have the capabilities and expertise needed to support a sophisticated process safety effort, the Panel believed that BP's system for ensuring an appropriate level of process safety awareness, knowledge, and competence in the organization relating to its five U.S. refineries had not been effective in a number of respects. First, BP had not effectively defined the level of process safety knowledge or competency required of executive management, line management above the refinery level, and refinery managers. Second, BP had not adequately ensured that its U.S. refinery personnel and contractors have sufficient process safety knowledge and competence. The information that the Panel reviewed indicated that process safety education and training needed to be more rigorous, comprehensive, and integrated. Third, the Panel found that at most of BP's U.S. refineries, the implementation of and over-reliance on BP's computer-based training contributed to inadequate process safety training of refinery employees.

Effectiveness of BP's corporate process safety management system. BP has an aspirational goal and expectation of "no accidents, no harm to people, and no damage to the environment," and is developing programs and practices aimed at addressing process risks. These programs and practices include the development of new standards, engineering technical practices, and other internal guidance, as well as the dedication of substantial resources. Despite these positive changes, the Panel's examination indicated that BP's corporate process safety management system did not effectively translate corporate expectations into measurable criteria for management of process risk or define the appropriate role of qualitative and quantitative risk management criteria.

The findings above, together with other information that the Panel obtained during its examination, lead the Panel to conclude that material deficiencies in process safety performance existed at BP's five U.S. refineries. Some of these deficiencies are common among multiple refineries, and some of the deficiencies appeared to relate to legacy systems in effect prior to BP's acquisition of the refineries. (BP acquired four of its five U.S. refineries through mergers with Amoco in 1998 and ARCO in 2000.)

BP appears to have established a relatively effective personal safety management system by embedding personal safety aspirations and expectations within the U.S. refining workforce. However, the Panel's report concluded that BP had not effectively implemented its corporate-level aspirational guidelines and expectations relating to process risk. Therefore, the Panel found that BP had not implemented an integrated, comprehensive, and effective process safety management system for its five U.S. refineries.

Panel observations relating to process safety management practices. The Panel observed several positive notable practices or, in the case of BP's process safety minimum expectation program, an excellent process safety management practice. The notable practices relate to creation of an engineering authority at each refinery and several other refinery-specific programs that are described in more detail in the Panel's report.

#### *Performance Evaluation, Corrective Action, and Corporate Oversight*

Maintaining and improving a process safety management system requires the periodic evaluation of performance and the correction of identified deficiencies. As discussed in the Panel's report, significant deficiencies existed in BP's site and corporate systems for measuring process safety performance, investigating incidents and near misses, auditing system performance, addressing previously identified process safety-related action items, and ensuring sufficient management and board oversight. Many of the process safety deficiencies were not new but were identifiable to BP based upon lessons from previous process safety incidents, including process incidents that occurred at BP's facility in Grangemouth, Scotland in 2000.

Measuring process safety performance. BP primarily used injury rates to measure process safety performance at its U.S. refineries before the Texas City accident. Although BP was not alone in this practice, BP's reliance on injury rates significantly hindered its perception of process risk. BP tracked some metrics relevant to process safety at its U.S. refineries. Apparently, however, BP did not understand or accept what this data indicated about the risk of a major accident or the overall performance of its process safety management systems. As a result, BP's corporate safety

management system for its U.S. refineries did not effectively measure and monitor process safety performance.

The Panel observed that the process safety performance metrics that BP was using were evolving. BP was monitoring at the corporate level several leading and lagging process safety metrics. BP also was working with external experts to review process safety performance indicators across the company and the industry.

Incident and near miss investigations. BP acknowledged the importance of incident and near miss investigations, and it employed multiple methods at different levels of the organization to distribute information regarding incidents and lessons learned. Although BP was improving aspects of its incident and near miss investigation process, BP had not instituted effective root cause analysis procedures to identify systemic causal factors that may contribute to future accidents. When true root or system causes are not identified, corrective actions may address immediate or superficial causes, but not likely the true root causes. The Panel also believed that BP had an incomplete picture of process safety performance at its U.S. refineries because BP's process safety management system likely resulted in underreporting of incidents and near misses.

Process safety audits. The Panel found that BP has not implemented an effective process safety audit system for its U.S. refineries based on the Panel's concerns about auditor qualifications, audit scope, reliance on internal auditors, and the limited review of audit findings.

The Panel also was concerned that the principal focus of the audits was on compliance and verifying that required management systems were in place to satisfy legal requirements. It did not appear, however, that BP used the audits to ensure that the management systems were delivering the desired safety performance or to assess a site's performance against industry best practices. BP is in the process of changing how it conducts audits of safety and operations management systems, including process safety audits.

Timely correction of identified process safety deficiencies. The Panel observed that BP expends significant efforts to identify deficiencies and to correct many identified deficiencies, which BP often does promptly. The Panel also found, however, that BP had sometimes failed to address promptly and track to completion process safety deficiencies identified during hazard assessments, audits, inspections, and incident investigations. The Panel's review, for example, found repeat audit findings at BP's U.S. refineries, suggesting that true root causes were not being identified and corrected. This problem was especially apparent with overdue mechanical integrity inspection and testing. Although BP regularly conducted various assessments, reviews, and audits within the company, the follow through after these reviews had fallen short repeatedly. This failure to follow through compromises the effectiveness of even the best audit program or incident investigation.

In addition, BP did not take full advantage of opportunities to improve process operations at its U.S. refineries and its process safety management systems. BP did not effectively use the results of its operating experiences, process hazard analyses, audits, near misses, or accident investigations to improve process operations and process safety management systems.

Corporate oversight. BP acknowledged the importance of ensuring that the company-wide safety management system functions as intended. The company's system for assuring process safety performance used a bottom-up reporting system that originates with each business unit, such as a refinery. As information was reported up, however, data was aggregated. By the time information was formally reported at higher levels of the organization, refinery-specific performance data was no longer presented separately.

The Panel's examination indicated that BP's executive management either did not receive refinery-specific information that suggested process safety deficiencies at some of the U.S. refineries or did not effectively respond to the information that it did receive. According to annual reports on health, safety, security, and environmental assurance that BP management provided to the Environment and Ethics Assurance Committee of BP's Board of Directors for 1999 through 2005, management was monitoring process safety matters, including plant and operational integrity issues. The reports identify safety and integrity management risks that various levels of the organization confronted and describe management actions proposed to address and mitigate those risks. From 2001 to 2003, for example, BP developed and implemented standards for process safety and major accident risk assessments and increased monitoring and reporting of action item closure, sharing of lessons learned, overdue planned inspections, and losses of containment. The reports and other documents that the Panel examined indicated, however, that issues persisted relating to assurance of effective implementation of BP's policies and expectations relating to safety and integrity management.

For these reasons, the Panel believed that BP's process safety management system was not effective in evaluating whether the steps that BP took were actually improving the company's process safety performance. The Panel found that neither BP's executive management nor its refining line management had ensured the implementation of an integrated, comprehensive, and effective process safety management system.

BP's Board of Directors had been monitoring process safety performance of BP's operations based on information that BP's corporate management presented to it. A substantial gulf appears to have existed, however, between the actual performance of BP's process safety management systems and the company's perception of that performance. Although BP's executive and refining line management was responsible for ensuring the implementation of an integrated, comprehensive, and effective process safety management system, BP's Board had not ensured, as a best practice, that management did so. In reviewing the conduct of the Board, the Panel was guided by its chartered purpose to examine and recommend any needed improvements. In the Panel's judgment, this purpose did not call for an examination of legal compliance, but called for excellence. It was in this context and in the context of best practices that the Panel believed that BP's Board can and should do more to improve its oversight of process safety at BP's five U.S. refineries.

*The Panel's Recommendations*

The Panel was charged with making recommendations to improve BP's corporate safety culture; process safety management systems; and corporate oversight of process safety. For each recommendation below, the Panel developed commentary that is an integral part of the recommendation and that provides more specific guidance relating to implementation of the recommendation. Reference should be made to Section VII of the Panel's report for a discussion of the recommendations and the related commentary. Each recommendation below should be read in conjunction with the related commentary.

RECOMMENDATION # 1—PROCESS SAFETY LEADERSHIP

The Board of Directors of BP p.l.c, BP's executive management (including its Group Chief Executive), and other members of BP's corporate management must provide effective leadership on and establish appropriate goals for process safety. Those individuals must demonstrate their commitment to process safety by articulating a clear message on the importance of process safety and matching that message both with the policies they adopt and the actions they take.

RECOMMENDATION #2—INTEGRATED AND COMPREHENSIVE PROCESS SAFETY MANAGEMENT SYSTEM

BP should establish and implement an integrated and comprehensive process safety management system that systematically and continuously identifies, reduces, and manages process safety risks at its U.S. refineries.

RECOMMENDATION #3—PROCESS SAFETY KNOWLEDGE AND EXPERTISE

BP should develop and implement a system to ensure that its executive management, its refining line management above the refinery level, and all U.S. refining personnel, including managers, supervisors, workers, and contractors, possess an appropriate level of process safety knowledge and expertise.

RECOMMENDATION #4—PROCESS SAFETY CULTURE

BP should involve the relevant stakeholders to develop a positive, trusting, and open process safety culture within each U.S. refinery.

RECOMMENDATION #5—CLEARLY DEFINED EXPECTATIONS AND ACCOUNTABILITY FOR PROCESS SAFETY

BP should clearly define expectations and strengthen accountability for process safety performance at all levels in executive management and in the refining managerial and supervisory reporting line.

RECOMMENDATION #6—SUPPORT FOR LINE MANAGEMENT

BP should provide more effective and better coordinated process safety support for the U.S. refining line organization.

RECOMMENDATION #7—LEADING AND LAGGING PERFORMANCE INDICATORS FOR  
PROCESS SAFETY

BP should develop, implement, maintain, and periodically update an integrated set of leading and lagging performance indicators for more effectively monitoring the process safety performance of the U.S. refineries by BP's refining line management, executive management (including the Group Chief Executive), and Board of Directors. In addition, BP should work with the U.S. Chemical Safety and Hazard Investigation Board and with industry, labor organizations, other governmental agencies, and other organizations to develop a consensus set of leading and lagging indicators for process safety performance for use in the refining and chemical processing industries.

## RECOMMENDATION #8—PROCESS SAFETY AUDITING

BP should establish and implement an effective system to audit process safety performance at its U.S. refineries.

## RECOMMENDATION #9—BOARD MONITORING

BP's Board should monitor the implementation of the recommendations of the Panel (including the related commentary) and the ongoing process safety performance of BP's U.S. refineries. The Board should, for a period of at least five calendar years, engage an independent monitor to report annually to the Board on BP's progress in implementing the Panel's recommendations (including the related commentary). The Board should also report publicly on the progress of such implementation and on BP's ongoing process safety performance.

## RECOMMENDATION #10—INDUSTRY LEADER

BP should use the lessons learned from the Texas City tragedy and from the Panel's report to transform the company into a recognized industry leader in process safety management.

The Panel believes that these recommendations, together with the related commentary, can help bring about sustainable improvements in process safety performance at all BP U.S. refineries.

The Panel's recommendations were based on findings developed during 2006. Since March 2005, BP has expressed a major commitment to a far better process safety regime, has committed significant resources and personnel to that end, and has undertaken or announced many measures that could impact process safety performance at BP's five U.S. refineries. In making its findings and recommendations, the Panel was not attempting to deny the beneficial effect on process safety that these measures may have. BP is a large corporation, and the Panel recognized that it is especially challenging to make dramatic and systemic changes in short time frames. However, whether measures already undertaken or announced will be effective remains to be seen. The ultimate effectiveness and sustainability of BP's intended improvements to its process safety performance can be determined only over time. The Panel believed that BP has much work remaining to improve the process safety performance at its U.S. refineries. The Panel's report also stated that BP should assess its future steps, including actions already planned as of the date of the Panel's report, against the Panel's findings and recommendations (and related commentary).

The Panel's recommendations and related commentary contain elements designed to ensure that measures taken will sustain improvement in process safety performance. The Panel believed this emphasis on sustainability was particularly important given BP's failure to fully and comprehensively implement across BP's U.S. refineries the lessons from previous serious accidents, including the process incidents that occurred at BP's facility in Grangemouth, Scotland in 2000. The Panel's recommendations, and the process safety excellence that those recommendations contemplate, should not be abandoned or neglected. They should not become lesser priorities as changes occur in the economic, business, or regulatory climate for the U.S. refining industry; as refinery margins decline from their current high levels; as changes occur at BP, including changes in management; or as mergers and acquisitions take place.

The Panel believed that the investments in BP's refining business and its refining workforce that its report suggested can benefit the company in many ways over time. Such investments should help reduce the economic or opportunity costs associated with a refinery operating at less than full capacity or not operating at all. Other potential benefits of investments in operations and process safety, such as improved workforce morale and increased productivity, may be difficult to measure but

are no less important. The Panel believed that as process safety is embedded in all aspects of corporate culture, management systems, and operations relating to BP's U.S. refineries, BP's U.S. refining business will benefit.

The Panel recognized that the task ahead of BP is significant and will take a concerted and lasting effort. It will not be easy, especially as time passes and the collective recognition of the importance of the task begins to fade. The Panel believed, however, that the BP refining workforce was ready, willing, and able to participate in a sustained, corporate-wide effort to move BP towards excellence in process safety performance as called for in the Panel's report. During its review, the Panel interacted with a large number of BP employees, contractors, managers, and executives. The Panel generally came away with favorable impressions of these people. As a group, they appeared hardworking and conscientious. Most importantly, they appeared sincerely interested in improving BP's management of process safety to prevent future incidents like the Texas City tragedy. This was the case at the Carson, Cherry Point, Texas City, Toledo, and Whiting refineries and in BP's corporate offices in Chicago and London.

I note that on January 16, 2007, the same day that the Panel announced its report, BP stated that it would implement the Panel's recommendations.

Finally, the Panel believed that all companies in the refining, chemical, and other process industries should give serious consideration to its recommendations and related commentary. While the Panel made no findings about companies other than BP, the Panel was under no illusion that the deficiencies in process safety culture, management, or corporate oversight identified in the Panel's report were limited to BP. If other refining and chemical companies understand the Panel's recommendations and related commentary and apply them to their own safety cultures, process safety management systems, and corporate oversight mechanisms, the Panel sincerely believed that the safety of the world's refineries, chemical plants, and other process facilities will be improved and lives will be saved.

Thank you for allowing me to testify before you today.

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Admiral BOWMAN. It is significant to note that the panel was not charged with conducting an investigation into the causes of this tragic accident at Texas City. We did not seek to affix blame or apportion responsibility for that accident. Instead, the panel sought to understand if deficiencies in process safety performance existed at BP's U.S. refineries so that we could make recommendations that would enable the company to improve.

The panel did not develop sufficient information to conclude that BP intentionally withheld resources on any safety-related projects for any budgetary reasons. However, the panel did believe that BP did not always ensure that adequate resources were effectively allocated to sustain a high level of process safety performance. The panel found that BP did not implement an integrated, comprehensive and effective process safety management system. The panel found that neither BP's executive management nor its refining line management had ensured the implementation of such a management system, and the panel found that BP's board in the U.K. had not ensured as a best practice that management implement such a system. These findings relating to BP's board were based on U.K.'s guidance on the role of the board as to health and safety practices and not on the failure to comply with any legal duties.

Among other findings, the panel found material deficiencies in process safety performance at each of BP's five U.S. refineries and that BP had not instilled a common process safety culture among those refineries.

Prior to the Texas City accident, BP had emphasized personal safety in recent years and had achieved significant improvement in personal safety performance, but the company had not emphasized process safety. BP mistakenly interpreted improving personal injury rates as an indication of acceptable performance and process



safety at its U.S. refineries. BP's reliance on this data combined with an inadequate process safety understanding created a false sense of confidence that it was properly addressing process safety risk. BP had not adequately established process safety as a core value across its five U.S. refineries. BP had not made certain that its line management and its U.S. refining workforce even understood what was expected of them in terms of process safety. The panel made specific and extensive recommendations organized under 10 topics, which I would refer to the committee in the full report.

One recommendation calls for BP to engage an independent monitor to observe the implementation of the panel's recommendations for the next 5 years.

I would note that, on the same day that we issued our report, BP stated that it would implement the panel's recommendations. Our report notes that, since the Texas City refinery explosion, BP's executive management has expressed a major commitment to a far better process safety regime, has committed significant resources and personnel to that end and has undertaken or announced many measures that would beneficially impact process safety. However, the ultimate effectiveness and sustainability of the company's intended improvements can be determined only over time.

Let me finish with a very short paragraph that precedes our report, the main report.

"Preventing process safety accidents requires vigilance. The passing of time without a process accident is not necessarily an indication that all is well and may well, in fact, contribute to a dangerous and growing sense of complacency. When people lose an appreciation of how their safety systems were intended to work, safety systems and controls can deteriorate. Lessons can be forgotten, and hazards and deviations from safe operating procedures can be accepted. Workers and supervisors can increasingly rely on how things were done before rather than rely on sound engineering principles and other controls. People can forget to be afraid."

Thank you, Mr. Chairman.

Chairman MILLER. Thank you.

Ms. Rowe.

#### **STATEMENT OF EVA ROWE, RELATIVE OF BP TEXAS CITY DISASTER VICTIMS**

Ms. ROWE. Good morning. First, I would like to thank Chairman Miller and the entire committee for inviting me to speak today on the tragedy at the BP Texas City Oil refinery. For me and many others, tomorrow will be a solemn day in Texas City, Texas as it marks the second anniversary of the horrible blast that ripped apart my life and the lives of so many others. The explosion at BP's Oil refinery murdered 15 people, including my parents, James and Linda Rowe, and injured hundreds more. The true tragedy is that it was needless and completely avoidable.

At approximately 1:20 p.m. that day, BP initiated a dangerous procedure at the refinery, using outdated and faulty equipment that sent 7,600 gallons of highly flammable liquid hydrocarbons, the equivalent of a tanker truck full of gasoline, into the air. Dozens of workers were in trailers as close as 100 feet away. They

were not warned of the imminent danger when an idling truck ignited the devastating chain-reaction explosion.

I, personally, believe that BP, with its corporate culture of greed over profits, murdered my parents, denying my brother Jeremy and me, along with the families of 13 others, the joy of the love of our fathers, mothers, brothers, and sisters and the warmth of their smiles and embraces forever. It is of little comfort to us, but we hope through this legislation to ensure more stringent worker health and safety standards that their deaths will not be in vain.

Today, I ask Congress to carefully review the report issued this week by the U.S. Chemical Safety Board and act with great speed on its recommendations. I ask that you create an environment of safety for all workers who risk their lives each day in already dangerous jobs that contribute so much to our great country and its economy.

Today, I come to Congress, asking that you mandate by law a change in corporate culture by requiring that all corporations place workers' safety before profits.

Today, I come to Congress and ask that you require OSHA, the Occupational Safety and Health Administration, to increase safety and inspections of all oil refineries as the Chemical Safety Board has recommended.

In Austin tomorrow, we will gather on the steps of the state capital to announce the "Remember the 15" bill in the Texas State legislature. It is the first step in seeking to mandate that those running the petrochemical industry create a safe working environment for its workers.

Today, I come to Congress asking that you join with the great State of Texas and change the laws of our land so that no other family will have to feel the pain and sadness I have felt hearing of my parents' deaths.

Thank you all so very much for your time and for this opportunity.

[The statement of Ms. Rowe follows:]

**Prepared Statement of Eva Rowe, Relative of BP Texas City Disaster Victims**

Good morning.

First I want to thank Representative Miller and the entire Committee for inviting me to speak today on the tragedy at the BP Texas City oil refinery.

For me and many others, tomorrow will be a solemn day in Texas City, Texas, as it marks the second anniversary of that horrible blast that ripped apart my life and the lives of so many others. The explosion at BP's oil refinery killed 15 people—including my parents, James and Linda Rowe—and injured hundreds more. The true tragedy is that it was a needless and completely avoidable explosion.

At approximately 1:20 p.m. that day, BP initiated a dangerous procedure at the refinery, using outdated and faulty equipment that sent 7,600 gallons of highly flammable liquid hydrocarbons—the equivalent of a tanker truck full of gasoline—into the air. Dozens of workers were in trailers as close as 100 feet away and were not warned of the imminent danger, when an idling truck ignited the devastating chain-reaction explosion.

I personally believe that BP, with its corporate culture of greed over profits, murdered my parents, denying my brother Jeremy and me, along with the families of the 13 others, the joy of the love of our fathers, mothers, brothers and sisters, and the warmth of their smiles and embraces forever. It is of little comfort to us, but we hope that, through legislation to ensure more stringent worker health and safety standards, that their deaths won't be in vain.

Today, I ask Congress to carefully review the report issued this week by the U.S. Chemical Safety Board and act with great speed on its recommendations. I ask that

you create an environment of safety for all workers who risk their lives each day, in already dangerous jobs that contribute so much to our great country and its economy.

Today I come to Congress asking that you mandate by law a change in corporate culture, by requiring that all corporations place worker safety before profits.

Today, I come to Congress to ask that you require OSHA, the Occupational Safety and Health Administration, to increase safety and inspections of all U.S. oil refineries, as the Chemical Safety Board has recommended.

In Austin tomorrow, we will gather on the steps of the state capital to announce the "Remember the 15" bill in the Texas State Legislature. It is a first step in seeking to mandate that those running the petrochemical industry create a safe working environment for its workers.

Today I come to Congress asking that you join with the great state of Texas and change the laws of our land so that no other family will have to feel the pain and sadness I felt hearing of my parents death.

Thank you all so very much for your time and for this opportunity.

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Chairman MILLER. Thank you. Thank you very much, Ms. Rowe.  
Mr. Cavaney.

**STATEMENT OF RED CAVANEY, PRESIDENT AND CHIEF  
EXECUTIVE OFFICER, AMERICAN PETROLEUM INSTITUTE**

Mr. CAVANEY. I thank you, Mr. Chairman, Ranking Member McKeon and members of the committee.

I also want to express my personal sympathies toward Ms. Rowe and all of the other people who have suffered as a result of this accident. I am Red Cavaney, President and CEO of the American Petroleum Institute. API's 400 member companies represent all sectors of America's oil and natural gas industry. I am testifying today on behalf of API and the National Petrochemical and Refiners Association. NPRA has 450 members, including virtually all U.S. refineries and petrochemical manufacturers.

Texas City has been a devastating tragedy to the facility's workers, their families, the community, and the company involved. It has also had a profound impact on the refining and petrochemical industry. Words are incapable of fully describing the deep sadness and sympathy that we have for all of those who have borne such a heavy burden.

Safety in the industry is a moral imperative with a top priority. Keeping employees, contractors and neighbors safe is and has been a goal we continually strive to achieve. It is the right thing to do, but it also happens to make good business sense. No accident is acceptable, and preventing the possibility of a fatal accident like what happened at Texas City is a goal toward which we all work day in and day out.

In light of the tragic accident and concerns raised by the Baker report, individual companies have been examining their safety procedures in search for improvements. In fact, a number of companies are using the Baker report in an audit in going through all of their refineries. Collectively, the industry is also taking action. At API, we are reviewing our standards on process equipment and operational safety. We are developing a new recommended practice on the siting of temporary structures that will become final later this spring. We will also be reviewing the Chemical Safety Board's more recent recommendation on safety standards in considering possible new guidance.

API is the industry standard-setting leader and an ANSI-accredited standards development organization. API standards reflect broad input from experts in and outside the industry and are regularly reviewed and revised. Among the 500 standards, we now maintain some 110 process safety-related. In reinforcing OSHA process safety management rules, these standards cover worker and contractor safety, mechanical integrity of pressure vessels and tanks, fire prevention, protection, and suppression and the certification of refinery equipment safety inspectors. There are thousands of API-certified inspectors examining pressure vessels and other process equipment throughout the world.

In addition to the response from our standards program, API and NPRA members share best practices and evaluate what can be learned from incidents and potential incidents. We are working with OSHA and other groups on these issues. We are also encouraging higher levels of performance through process safety training and industry awards to encourage best in practice behavior, and we have formed a broad coalition of organizations and industry experts to evaluate ways that we can improve process safety. The Center for Chemical Process Safety, an organization supported by API and NPRA members, expects to publish a study this year, setting forth the lessons learned through process unit accidents, including the Texas City accident. We will closely review that information, seeking additional input into our standards process.

The devastation caused by the Texas City accident demands of us as an industry that we look anew at what we are doing and strive even further towards additional improvements. That is happening, and it will continue to happen. Texas City and its loss of colleagues and the pain and grief suffered by loved ones will not be forgotten. The lessons will remain with us for many, many years.

This concludes my statement, Mr. Chairman. I welcome the opportunity to answer questions that the committee may have. Thank you.

[The statement of Mr. Cavaney follows:]

**Prepared Statement of Red Cavaney, President and CEO,  
American Petroleum Institute**

Good morning Chairman Miller, Ranking Member McKeon, and members of the committee.

I am Red Cavaney, President and CEO of the American Petroleum Institute (API). API's 400 member companies represent all sectors of America's oil and natural gas industry. I am testifying today on behalf of API and the National Petrochemical and Refiners Association (NPRA). NPRA has 450 members, including virtually all U.S. refiners and petrochemical manufacturers.

Texas City has been a devastating tragedy to the facility's workers, their families, the community, and the company involved. It has also had a profound impact on the refining and petrochemical industry. No words can fully describe the deep sadness and sympathy we all feel.

Safety in the industry is a moral imperative and a top priority. Keeping employees, contractors and neighbors safe is, and was, and is a goal we continually strive to achieve. It's the right thing to do. It also happens to be good business practice. No accident is acceptable. And, preventing the possibility of a fatal accident like what happened at Texas City is a goal we work towards day in and day out.

*Industry action: standards*

Within API, we have a formal, comprehensive and rigorous approach to the development of industry standards and recommended practices, which we routinely up-

date as new information and data become available. Following the Texas City incident, we did just that, and, as is our practice, we will continue to do so.

We have reviewed the Chemical Safety Board (CSB) recommendation on temporary facility siting and published a draft recommended practice in 2006. API expects to publish a final version of this recommended practice later this spring. We are also working to identify areas where new guidance related to process safety is needed and will certainly consider developing additional standards as appropriate. We are reviewing all of CSB's recently issued recommendations on additional safety standards.

API is the industry standards setting leader and, as an American National Standards Institute (ANSI) accredited standards development organization, operates with approved standards development procedures and undergoes regular audits of its processes. API standards affect both industry equipment and operations. Standards serve both safety and business objectives. In developing our industry standards, API is in conformance with ANSI guidelines and employs a consensus process that often includes regulators and experts who are not API members.

Among the 500 standards we now maintain and regularly review and revise, many are focused on process safety and are consistent with OSHA process safety management rules. In fact, API Recommended Practice 750, Management of Process Hazards, was one of the primary resources used by OSHA in its development of process safety management regulations.

API's approximately 110 process safety-related standards cover worker and contractor safety; mechanical integrity of pressure vessels and tanks; fire prevention, protection and suppression; and certification of refinery equipment safety inspectors. These standards are consistent with and reinforce OSHA's process safety management rule. An addendum with specifics is attached.

As a specific example of the interrelationship between the API Standards and Certification Programs and the OSHA Process Safety Management Regulations, one only need refer to Section J of the regulations on Mechanical Integrity. This section applies to a broad range of process equipment including pressure vessels and storage tanks, controls, piping, valves, pumps and other key equipment used in refineries and chemical processing facilities. Each piece of equipment specified in Section J is also subject of an API standard or recommended practice. Further, the equipment inspection requirements of Section J are also backed by a series of API standards for inspection, which are also the basis of the API Individual Certification Program (ICP).

The ICP programs are designed to promote safety and health, improved inspection capabilities, and improved management control and environmental performance. Certified inspectors are recognized as working professionals who are fully knowledgeable on industry inspection codes, and who are performing their jobs in accordance with those requirements. ICP provides an essential springboard for inspectors to make even more valuable contributions to the safety and quality of industry operations. API's certification programs also reflect API's Environmental, Health and Safety Mission and Guiding Principles, which are part of API's bylaws.

API's inspector certifications are based on industry-developed standards that are recognized and used with confidence worldwide. These standards have also provided a uniform platform that serves as a model for many state and government regulations. These API programs emphasize professional credibility and process integrity. Certified inspectors are required to complete an eight-hour comprehensive, proctored exam and are recertified every three years.

#### *Industry action: sharing lessons learned and best practices*

In addition to the comprehensive industry standards program, our industry has developed mechanisms to share valuable lessons-learned from incidents, potential incidents and best practices to improve safety at processing facilities. API holds an annual process safety management best practices workshop. NPRA holds an annual safety conference. API is working with OSHA, the National Fire Protection Association (NFPA), and the Steel Tank Institute (STI) to improve tank safety. There are also industry safety awards to heighten awareness and competition for best-in-class practices; process safety training; and industry conferences on incident root causes, learnings and mitigation measures. The Baker panel report and the CSB report provide additional opportunities to improve process safety.

Refiners and chemical plant operators have also formed a broad coalition of organizations and industry experts as part of our continuous improvement program, which includes all aspects of industry safety, including process safety. This coalition is evaluating ways to continue to improve process safety and to leverage the lessons learned among the coalition member organizations.

Also, the Center for Chemical Process Safety, an organization supported by API and NPRA members, expects to publish a study this year setting forth the lessons learned from process unit accidents, including the Texas City accident.

In addition, API has an educational program, API University, which includes more than 35 classroom and e-Learning courses and workshops on safety and safety-related issues. Through this collection of courses, API brings together and trains hundreds and hundreds of people annually in diverse safety subject matters. Examples of API University courses include Process Safety Management (PSM) for Refineries and Exploration and Production Operations, Performing Facility Siting Studies, and Improving Process Safety Management and Effectiveness. In the Process Management for Refineries and Exploration and Production Operations course, trainees study specific guidelines for developing written programs to meet PSM regulations, integrating PSM element requirements into other corporate programs, and evaluating program compliance throughout the implementation phase. Trainees in this course also get insight into the latest regulatory developments and receive summary documentation of key clarifications by OSHA and EPA.

#### *Conclusion*

The devastation caused by the Texas City accident demands of us in industry to look anew at what we are doing and to strive toward continual improvement. That is happening, and it will continue. Texas City and its loss of colleagues, as well as the pain and grief suffered by loved ones, will not be forgotten. These lessons will remain with us for many years.

This concludes my statement, Mr. Chairman. I welcome the opportunity to answer any questions the committee might pose.

#### **OSHA Process Safety Management of Highly Hazardous Chemicals, 29CFR1910.119 and the API Standards Program**

The purpose of the OSHA process safety management (PSM) regulations is as follows:

This section contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire or explosion hazards.

The PSM Standard is also the required prevention program for the Environmental Protection Agency's "Risk Management Program Rule" for Program 2 (modified) or Program 3 processes.

#### *Overview*

The PSM regulations are organized by the following subsections and lay out a prescribed set of rules for compliance. These rules require significant documentation to ensure safe work practices for employees and contractors, operational safety, equipment integrity, management of change and incident investigation. The regulatory language is simple and brief, but requires detailed documentation, and a thorough working knowledge of each of the subsections' applications.

- (a) Application
- (b) Blank
- (c) Employee Participation
- (d) Process Safety Information
- (e) Process Hazard Analysis
- (f) Operating Procedures
- (g) Training
- (h) Contractors
- (i) Pre-Startup Safety Review
- (j) Mechanical Integrity
- (k) Hot-Work Permit
- (l) Management of Change
- (m) Incident Investigation
- (n) Emergency Planning and Response
- (o) Compliance Audits
- (p) Trade Secrets

The purpose of this summary is to link the subsection areas with the API specifications, standards, recommended practices and codes ("standards") that are relevant and applicable in documenting PSM compliance.

#### *Role of National Consensus Standards in PSM Compliance*

In an interpretation provided to ISA in 2000, (<http://www.osha-slc.gov/pls/oshaweb/owadisp.show—document?p—table=INTERPRETATIONS&p—id=23722>) OSHA stated, in response to a query regarding the applicability of ANSI/ISA

S84.01, that as a national consensus document, OSHA considers it to be a recognized and generally accepted good engineering practice. Further it states, "Based on input from stakeholders, OSHA stated in the PSM final rule (see F.R., Volume 57, No. 36, pg 6390) that it did not intend to incorporate by reference into PSM all the codes and standards published by consensus groups."

Further, in Appendix C to 1910.119, with regard to process safety information, OSHA states:

The information pertaining to process equipment design must be documented. In other words, what were the codes and standards relied on to establish good engineering practice. These codes and standards are published by such organizations as the \* \* \* American Petroleum Institute. \* \* \*

In the context of mechanical integrity and inspection, OSHA notes:

Meantime to failure of various instrumentation and equipment parts would be known from the manufacturers data or the employer's experience with the parts, which would then influence the inspection and testing frequency and associated procedures. Also, applicable codes and standards such as \* \* \* those from the American Petroleum Institute \* \* \* and other groups, provide information to help establish an effective testing and inspection frequency, as well as appropriate methodologies.

In these two citations, OSHA has asserted that compliance with OSHA PSM requirements, therefore, may be demonstrated and supported through the reliance on these national consensus documents developed under ANSI accredited procedures including numerous standards produced by API.

*Relationship Between API Standards and Certification Programs to OSHA PSM Requirements*

The relevant API standards and programs can be generally grouped into five categories:

- a) Personnel and Contractor Safety
- b) Fire Prevention, Protection and Suppression
- c) Inspection of Equipment and Methodologies for In-Service Assessment
- d) Equipment Design and Reliability
- e) Technical Data on Petroleum Product Properties
- f) Certification for Training Providers and Individuals

The following list by PSM Subsection shows the relevant API standards and programs that related to each section's subject area.

- a) Application
- b) Blank
- c) Employee Participation—
  - 2220, Improving Owner and Contractor Safety Performance
  - 2221, Contractor and Owner Safety Program Implementation
- d) Process Safety Information
  - Safe Limits/Process Chemistry
- Technical Data Book—Petroleum Refining
  - Materials of Construction—
    - 600, Bolted Bonnet Steel Gate Valves for Petroleum and Natural Gas Industries
    - 602, Steel Gate, Globe and Check Valves for Sizes DN 100 and Smaller for the Petroleum and Natural Gas Industries
    - 603, Corrosion-Resistant, Bolted Bonnet Gate Valves—Flanged and Butt-Welding Ends
    - 608, Metal Ball Valves—Flanged, Threaded and Butt-Welding Ends
    - 609, Butterfly Valves: Double Flanged, Lug- and Water-Type
    - 620, Design and Construction of Large, Welded, Low-pressure Storage Tanks
    - 650, Welded Steel Tanks for Oil Storage
    - 520, Sizing, Selection, and Installation of Pressure-relieving Devices in Refineries, Part I—Sizing and Selection
    - 6D, Specification for Pipeline Valves
      - Electrical Classification—
        - 500, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2
        - 505, Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1 and Zone 2
      - Relief System Design—
        - 520 Pt.1, Sizing, Selection, and Installation of Pressure-relieving Devices in Refineries, Part I—Sizing and Selection
        - 521, Guide for Pressure-relieving and Depressuring Systems
          - Ventilation System Design—

- 2015, Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks
- 2016, Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks
- 2217A, Guidelines for Work in Inert Confined Spaces in the Petroleum Industry
  - Safety Systems—
- 2001, Fire Protection in Refineries
- 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents
- 2009, Safe Welding, Cutting and Hot Work Practices in the Petroleum and Petrochemical Industries
- 2027, Ignition Hazards Involved in Abrasive Blasting of Atmospheric Storage Tanks in Hydrocarbon Service
- 2028, Flame Arresters in Piping Systems
- 2030, Application of Fixed Water Spray Systems for Fire Protection in the Petroleum and Petrochemical Industries
- 2201, Safe Hot Tapping Practices in the Petroleum & Petrochemical Industries
- 2210, Flame Arresters for Vents of Tanks Storing Petroleum Products
- 2214, Spark Ignition Properties of Hand Tools
- 2216, Ignition Risk of Hydrocarbon Vapors by Hot Surfaces in the Open Air
- 2217A, Guidelines for Work in Inert Confined Spaces in the Petroleum Industry
- 2218, Fireproofing Practices in Petroleum and Petrochemical Processing Plants
- 2220, Improving Owner and Contractor Safety Performance
- 2221, Contractor and Owner Safety Program Implementation
- 2015, Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks
- 2016, Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks
- 2021, Management of Atmospheric Storage Tank Fires
- 2026, Safe Access/Egress Involving Floating Roofs of Storage Tanks in Petroleum Service
- 2350 Overfill Protection for Storage Tanks in Petroleum Facilities
  - Inspection—
- 510, Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration
- 570, Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-service Piping Systems
- 653, Tank Inspection, Repair, Alteration, and Reconstruction
- 579, Fitness-For-Service
- 572, Inspection of Pressure Vessels
- 573, Inspection of Fired Boilers and Heaters
- 574, Inspection Practices for Piping System Components
- 575, Inspection of Atmospheric & Low Pressure Storage Tanks
- 576, Inspection of Pressure Relieving Devices
- 577, Welding Inspection and Metallurgy
- 578, Material Verification Program for New and Existing Alloy Piping Systems
- e) Process Hazard Analysis
  - Incident Data—
- 2384, 2005 Survey on Petroleum Industry Occupational Injuries, Illnesses, and Fatalities Summary Report: Aggregate Data Only
- 2383, 2004 Survey on Petroleum Industry Occupational Injuries, Illnesses, and Fatalities Summary Report: Aggregate Data Only
- 2382, 2003 Survey on Petroleum Industry Occupational Injuries, Illnesses, and Fatalities Summary Report: Aggregate Data Only
- 2381, 2002 Survey on Petroleum Industry Occupational Injuries, Illnesses and Fatalities Summary Report: Aggregate Data Only
  - Controls for Process Monitoring and Instrumentation—
- 551, Process Measurement Instrumentation
- 552, Transmission Systems
- 553, Refinery Control Valves
- 554, Process Instrumentation and Control
- 555, Process Analyzers
- 556, Fired Heaters & Steam Generators
- 557, Guide to Advanced Control Systems
  - Consequences of Failure—



- 580, Risk-Based Inspection
- 581, Base Resource Document—Risk Based Inspection
- f) Operating Procedures
- g) Training
  - Initial and refresher training programs are supported by several API programs including the “Training Provider Certification Program” (TPCP) which accredits trainers, the “Individual Certification Program” (ICP) which accredits individuals who have demonstrated competency in various inspection subject areas, and “API University” which provides specific training on safety, maintenance, operations, and standards.
- h) Contractors
  - 2220, Improving Owner and Contractor Safety Performance
  - 2221, Contractor and Owner Safety Program Implementation
- i) Pre-Startup Safety Review
- j) Mechanical Integrity
  - Application—
  - 579, Fitness-For-Service
    - Pressure Vessels and Storage Tanks—
  - 510, Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration
    - 653, Tank Inspection, Repair, Alteration, and Reconstruction
    - 572, Inspection of Pressure Vessels
    - 575, Inspection of Atmospheric & Low Pressure Storage Tanks
      - Piping Systems and Valves—
    - 570, Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-service Piping Systems
      - 574, Inspection Practices for Piping System Components
      - 578, Material Verification Program for New and Existing Alloy Piping Systems
      - 598, Valve Inspection and Testing
      - 607, Testing of Valves—Fire Type-testing Requirements
      - 622, Type Testing of Process Valve Packing for Fugitive Emissions
        - Relief and Vent Systems and Devices—
      - 576, Inspection of Pressure Relieving Devices
    - 510, Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration
      - 537, Flare Details for General Refinery and Petrochemical Service
      - 2000, Venting Atmospheric and Low-pressure Storage Tanks: Nonrefrigerated and Refrigerated
        - Emergency Shutdown Systems—
  - 2350, Overfill Protection for Storage Tanks in Petroleum Facilities
    - Controls—
- 551, Process Measurement Instrumentation
- 552, Transmission Systems
- 553, Refinery Control Valves
- 554, Process Instrumentation and Control
- 555, Process Analyzers
- 556, Fired Heaters & Steam Generators
- 557, Guide to Advanced Control Systems
  - Pumps—
  - 610, Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries
  - 614, Lubrication, Shaft-sealing, and Control-oil Systems and Auxiliaries for Petroleum, Chemical and Gas Industry Services
    - 674, Positive Displacement Pumps—Reciprocating
    - 675, Positive Displacement Pumps—Controlled Volume
    - 676, Positive Displacement Pumps—Rotary
    - 681, Liquid Ring Vacuum Pumps and Compressors
    - 682, Pumps—Shaft Sealing Systems for Centrifugal and Rotary Pumps
    - 685, Sealless Centrifugal Pumps for Petroleum, Heavy Duty Chemical, and Gas Industry Services
      - 686, Machinery Installation and Installation Design
      - 687, Rotor Repair
- k) Hot-Work Permit—
- 2201, Safe Hot Tapping Practices in the Petroleum & Petrochemical Industries
- l) Management of Change
  - Inspections and Tests—
  - 510, Pressure Vessel Inspection Code: In-Service Inspection, Rating, Repair, and Alteration

- 570, Piping Inspection Code: Inspection, Repair, Alteration, and Rerating of In-service Piping Systems
- 653, Tank Inspection, Repair, Alteration, and Reconstruction
- 579, Fitness-For-Service
- 572, Inspection of Pressure Vessels
- 573, Inspection of Fired Boilers and Heaters
- 574, Inspection Practices for Piping System Components
- 575, Inspection of Atmospheric & Low Pressure Storage Tanks
- 576, Inspection of Pressure Relieving Devices
- 577, Welding Inspection and Metallurgy
- 578, Material Verification Program for New and Existing Alloy Piping Systems
- 581, Base Resource Document—Risk Based Inspection
  - Suitability for Service—
- (All Previously Standards Listed Above)
- m) Incident Investigation
- n) Emergency Planning and Response
- o) Compliance Audits
- p) Trade Secrets

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Chairman MILLER. Thank you.  
Mr. Nibarger.

**STATEMENT OF KIM NIBARGER, HEALTH AND SAFETY SPECIALIST, UNITED STEELWORKERS INTERNATIONAL UNION, DEPARTMENT OF HEALTH, SAFETY AND THE ENVIRONMENT**

Mr. NIBARGER. Mr. Chairman 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, and I am also a Health and Safety Specialist for the union's Health, Safety and Environment Department. The USW has approximately 850,000 members in the United States and Canada. Notwithstanding our name, we represent workers in virtually every 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, which is the subject of today's hearing.

Our members work in very dangerous environments where worker safety is key. The Process Safety Management standard was developed to help ensure safe and helpful workplaces processing toxic, reactive, flammable gases and liquids or other highly hazardous chemicals. The implementation of PSM began in 1992, and all requirements of the program were to be in place by May 26, 1997.

There were a number of devastating accidents in the petrochemical industry that precipitated this legislation. Unfortunately, these accidents continue to take place.

The explosion at the BP facility in Texas City resulted in 15 fatalities and in more than 170 injuries. This was but one of a handful of incidents that take the lives of workers in the petrochemical industry every month. The reason these go unnoticed is that they usually happen one or two fatalities at a time or the affected workers are contract employees who do not get connected with the proprietary employers. Unfortunately, it takes a major event like the one we saw in Texas City for these incidents to get any real notice. In fact, prior to the BP explosion, there was one worker fatality every 16 months for 30 years at the Texas City facility.

The number of releases of highly hazardous chemicals, in particular hydrocarbons, that do not find an ignition source is estimated to be 98 percent. Again, you do not hear about these releases unless there is an explosion or a fire associated with the release. Any number of these releases, had they found an ignition source, could have resulted in consequences as tragic as Texas City.

The refinery that I worked for in Anacortes, Washington released approximately 27,000 pounds of propane and propylene as light hydrocarbons in April of 2006. They did not find an ignition source, and the release was contained. Had the ensuing vapor cloud ignited, the damage would have been extensive. The underlying cause was a pipe corrosion issue brought on by a seemingly small change in the process which was not considered significant enough to trigger a Management of Change review, or MOC.

The day before Thanksgiving in 1998 at this same facility, we experienced a situation with slightly different circumstances. Again, a Management of Change was not performed, and a decision was made to handle this abnormal event using normal procedures. The result was six fatalities. I was one member of a team tasked with the retrieval of the bodies of my six coworkers.

The fire at the Valero refinery in Sunray, Texas on February 16th of this year was also a release of light hydrocarbons, propane, but this release found an ignition source almost immediately that resulted in a serious fire but did minimal damage compared to the potential damage from a vapor cloud forming and then igniting. There could have easily been as many fatalities in any of these instances as there were in Texas City where the circumstances were slightly different.

Since the beginning of 2007, Valero has had a total of eight incidents, ranging from loss of utilities that resulted in production cutbacks and flaring to four incidents that caused fires. This is a pattern repeated all too often. In the U.S. from January 1st through February 16th of this year, there have been 43 incidents of pipeline leaks, chemical releases, plant upsets, and fires. This list is not inclusive, but I seek to focus on refinery and chemical plants as well as distribution facilities. In some instances, facilities or neighborhoods were evacuated without incident. Sadly, in others there were lives lost.

The United Steelworkers represents approximately half of the workers in the petrochemical industry in this country. We have an intimate concern with the well-being of the workers we represent as well as the industry.

One of the union's major goals is to work with the petrochemical industry to make it safer for our members and for the communities in which these facilities exist. In the case of BP, we are currently in negotiations with the company to institute a 10-point program to address several items brought forward through the Baker panel report.

Specifically, we are working to establish a pilot program in Texas City of the unions, a trial prevention program for a joint accident/near miss investigation. We are working on collectively developing safety and job training programs as well as procedure writing and a review process for all of BP's U.S. represented sites. The issue

of adequate staffing and reasonable work hours is also being addressed.

This is the first step in our union's goal of realizing this type of involvement at all of the facilities we represent. Who knows better about the day-to-day activities and the best way to deal with them than the workers who perform these jobs on a daily basis?

For me, safety in the petrochemical industry is personal. My USW responsibilities involve me in the prevention and investigation of industrial fatalities on a daily basis. The focus of everything we do is to eliminate deaths in the workplace. When I no longer have to investigate workplace fatalities, I will be the happiest person alive.

Thank you again for the opportunity to testify this morning.  
[The statement of Mr. Nibarger follows:]

**Prepared Statement of Kim Nibarger, Health and Safety Specialist, Health, Safety and Environment Department, United Steelworkers International Union**

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Thank you again for the opportunity to testify this morning.

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Chairman MILLER. Thank you very much. Thank you to all of the witnesses.

Let me just, at the outset, say that it is hard to grow up where I grew up and not be familiar with the oil and chemistry industry with the number of refineries that are in and around my home, and I worked as a student in high school and college for Chevron and Shell and what at that time was Phillips and Tosco and others, and I think I appreciate the nature of this industry and the hazards that are inherent when you are dealing around flammable chemicals and high temperatures and complex processes, but I am a little worried about the language in the hearing this morning.

Mr. Cavaney, you say that API is the industry standard setting leader, and the American National Standards Institute's accredited Standards Development Organization operates with approved standards, development procedures and undergoes regular audits process.

Having said all of that, this refinery was able to operate for more than 15 years essentially in violation of, I assume, all of those standards that were set in terms of looking at process safety standards, and so I assume that they are not mandatory. They are what the standards for the industry should be and would like to be, and you revise them all the time, but somehow they can also apparently be completely ignored without any repercussions to the company.

Admiral Bowman, you said that BP had mistakenly chosen to look at worker accidents and injury and illness rates as opposed to

process. I would think that the report of the Chemical Safety Board said that they chose not to look at the process safety procedures and what indicators those might have, in fact, served in terms of raising cautionary flags, red flags, and process changes.

In fact, the Chair of the board, Ms. Merritt, says, quote, "In our final report, we concluded that organizational safety deficiencies at all levels of the British Petroleum Corporation caused this terrible accident. We found widespread safety/cultural deficiencies both at the Texas City refinery and at the higher levels of BP."

In fact, Chairman Merritt, those reached all the way into the board of directors, if I understand your report correctly, in terms of the failures that you attribute to leading to this accident. Is that not so?

Ms. MERRITT. Yes. We know that at least one member of the board of directors on the executive committee had information from internal reports that identified serious safety problems and operational deficiencies at the facility and culture gaps that were not addressed. As a matter of fact, following a presentation of those facts, they required another 25 percent cutback in cost.

Chairman MILLER. So there were the cutbacks in terms of cost, in terms of safety and training and that, but also, let me ask you. It is my understanding again that this particular piece of equipment that was central to this accident had been identified back in the 1970s as equipment that was out of date and that there were more modern alternatives to this equipment and, in fact, that OSHA had warned British Petroleum about this some 13 years before the explosion; is that correct?

Ms. MERRITT. Yes, that is correct, and we know that other companies in the refining industry have replaced this piece of equipment called a "blow-down drum" with flares and with remote knockout drums and flares that are outside the battery limits of operations, which is what is recommended. However, BP, even though it had a policy that when this equipment was replaced or significantly modified that they would replace it with flares—and we know that they had a number of opportunities to do that—that they did not, and we have evidence, at least in one case, where they did that due to budgetary reasons.

Chairman MILLER. So they made a conscious choice not to follow those recommendations and not to replace that equipment with the procedure that had been identified as being safer?

Ms. MERRITT. Yes, we know that is true.

Chairman MILLER. The process safety procedures, I assume—well, correct me if I am wrong. As I look at them, they are really a way of giving you early indicators of the operations of a refinery or of a chemical facility that when taken together—and that may be taken together as three incidents or seven incidents or 10 incidents depending on the type of incident—that might tell you something about either the skills or the training or the operations of this facility that you might want to pay attention to because collectively they could lead to a catastrophe.

Is that a fair statement of the intent of these?

Ms. MERRITT. Yes. The Process Safety Management rule requires that companies that are covered by this rule keep a record, a log of incidents, that are called "near misses," where a release could

have caused a problem, a release of toxic or hazardous materials, and that that investigation is supposed to be kept in a record, and if OSHA were doing their program quality comprehensive audits of facilities prior to incidents they would have these records then to review.

However, what we have found at BP is that they were not doing incident investigations of even very, very serious incidents that I would not even call "near misses." I would call them a catastrophe except for a spark, and they did not investigate those. We know that they were——

Chairman MILLER. OSHA and BP?

Ms. MERRITT. BP did not investigate those and did not use even that evidence of a hazard when they did their hazard and operability reviews every couple of years. They were not even reviewing incidents that were occurring in their own facility. So we know that that part of the standard—those incident investigations are not required to be submitted to OSHA. They are only required to be kept on property, but if no audits are being done that just is not happening in a lot of cases, and we find that in other investigations, too, not just this one, that incidents that were prewarning events that management could have used to have prevented a catastrophe were not investigated and OSHA was doing no preventative audits whatsoever, so this evidence was never used to prevent an accident.

Chairman MILLER. Mr. Cavaney, how does the company, an international company, you know, a very successful company, how do they sink to this level given your standards and your constant review and the communications, I assume, that take place across all of your members? How do you sink to this level where for 15 years you ignore these recommendations, these signs, these incidents and still believe somehow you are in compliance with API standards?

Mr. CAVANEY. Mr. Chairman, I cannot speak specifically to each of the refineries. I have not been involved in the investigations, nor am I aware of the details.

Chairman MILLER. Would you disagree with the characterization that this has led to a culture, a widespread safety culture of deficiencies?

Mr. CAVANEY. As I said, again, Mr. Chairman, I have not visited any of those facilities. I am not familiar with them.

Chairman MILLER. How would you characterize what took place here?

Mr. CAVANEY. A tragedy.

Chairman MILLER. Have you read the report?

Mr. CAVANEY. We have not received the report yet. It is supposed to be out within the next week to us. Mr. Chairman, I am aware of the public discussion about it, and obviously it is a tragedy, and as I mentioned in my remarks, we operate refineries in high temperature, high pressure environments with hazardous materials, and we are consistently looking to try and find an edge on how we can improve safety because at the end of the day protecting your employees——

Chairman MILLER. Yes, but with all due respect, the API is not blowing up. The refineries are.

Mr. CAVANEY. I understand.

Chairman MILLER. Your constituent members are blowing up. You know, in my community you can get a telephone call at 3:00 o'clock in the morning telling you you have to shelter in place. You know it can happen to you time and again in a number of my communities, and it in fact happens that way. So something is very wrong. I mean maybe this is what the administration believes is somehow voluntary compliance, the fact that you set these standards, but something is very wrong between these standards and what is happening on the ground.

Mr. CAVANEY. Well, obviously, if you have an accident, it needs to be investigated, and—

Chairman MILLER. But it is not.

Mr. CAVANEY [continuing]. Steps need to be taken, but if you look at the industry's record over time in terms of nonfatal injuries and nonfatal accidents, we have continued to make improvement, and we are trying to—

Chairman MILLER. I hope so.

Mr. CAVANEY [continuing]. Prevent all accidents, is what we are trying to do here through this standards process and through our recommended practices. It is something you are vigilant with and you work on consistently.

Chairman MILLER. But I think there are two problems here, with all due respect. One is the word "voluntary," and the other is "recommended" because obviously this is a huge gap. This is a huge gap that the people of Texas City, you know, suffered, and BP for year after year after year drove their processes through that gap.

And I have been more than generous with myself on the time, and I will yield to my colleague, Mr. McKeon.

Mr. CAVANEY. Mr. Chairman, may I just answer your last question? We are regulated by OSHA and a number of other Federal Government bodies as well as at the State level who conduct inspections to see whether or not compliance is going on. All we can do is certify what the best practices are.

Chairman MILLER. With all due respect, Mr. Cavaney, that did not happen. That did not happen until this place blew up.

Mr. CAVANEY. I understand.

Chairman MILLER. Mr. McKeon.

Mr. MCKEON. Thank you, Mr. Chairman.

You know, going back, looking at the report and how there were—of course the tragedy of the 15 deaths, but every 16 months a death for many, many years before should have, I think, sent a much more serious warning signal and should have had a much more serious response.

There have been comments made about that the company had warnings. They knew about it. A board member knew about it, and because of financial reasons, budgetary reasons, it did not make the necessary corrections or follow the recommendations that were given. I guess most board members or maybe all board members—I guess their job is to see that the company runs and runs well and makes a profit. It seems like there was some shortsightedness, and in the terms of trying to turn a profit—and I am not against profit. I think that is what—you know, that is important. Nobody would have jobs. Nothing would move forward if a profit were not made,



but by being shortsighted and saving on the short run, they ended up paying the largest fine ever. Maybe there are some things—I am hopeful that what comes out of this hearing and any prospective legislation or anything that comes from it for those 15 and all of the others who have died in serious accidents such as this is we, together, come together to try to resolve that this does not happen in the future, and we should come out of this hearing with some positive recommendations. If OSHA is not doing proper oversight, if your organization is not doing proper oversight, if the companies are not doing proper oversight, we should find those and find ways to make a correction.

I know that in the report one of the things, Admiral, that you recommended was that we have third party audits. That is something that Charlie Norwood, I know—our late friend—pushed for four years, and I am pleased to see that in your recommendation.

Can you explain how that would be beneficial in going forward?

Admiral BOWMAN. Yes, sir.

If I may, the entire system—in my personal view, the charter of our panel did not extend to looking at this regulatory aspect of this. We were specifically, by the urgent recommendation of the Chemical Safety Board, asked to look at the process safety management and the corporate culture of process safety at BP, but if I can offer my personal observation, to me it is incredible that what seems, to me, to be happening with the OSHA oversight of these refineries and of their responsibilities in this regard is that we are constantly shooting behind the duck; that is, after the accident occurs OSHA then comes in. There seems to be no or little preemptive investigation, third party evaluation of those preemptive investigations and evaluations.

I would point to the mere fact that our panel filled this book with what we consider to be very serious and material deficiencies on the part of these refineries in BP, and yet it was only after the accident that OSHA came, investigated, found 300 very serious or over 300 very serious violations of their own standards. To me and in the culture that I have grown up in the nuclear Navy and in the commercial nuclear industry in this country, that is not the way you run the railroad. If they can find 300 serious violations after the explosion, it would seem to me that preemptively finding those violations may have prevented this tragedy, and I think that that is one of the main root causes of why we are here today.

Ms. MERRITT. May I add to that?

Mr. MCKEON. Yes.

Ms. MERRITT. Under the process safety rule as it was implemented in 1992, there is a provision for OSHA to do comprehensive preemptive audits of facilities. That is part of the regulation already, and that part of the regulation was never implemented by OSHA. When they do an inspection—and we know that they have very few trained inspectors to be able to do process safety audits or preemptive audits, which are really quite complicated and very technical. They have done inspections of facilities, but they are usually after an event, and they are looking for things that are shop floor incidents and personal safety incidents such as slips, trips and falls or electrical connections. Whereas, if they had come in before this accident—I mean there were 10 fatalities in the pe-

riod of a year preceding this one where, if they had come in and looked at the process for verification of implementation of process safety, they would have seen easily that this very important and very well done rule was not being implemented at the BP facility.

Mr. MCKEON. So it sounds like we have a cultural problem within OSHA, because I come from a business background before I came to Congress, and there used to be all kinds of complaints about OSHA of all of the nitpicky things that they do, and maybe they should be looking at these very serious, more—where there are much more hazardous occupations, that they should be really focusing on those instead of some of the little nitpicky things that they do get involved with. You know, I am even wondering if this goes back to the boardroom. Maybe in the selection of the board there should be one person that is brought on the board just to oversee these kinds of things, and that should be a responsibility so that when everybody else is sitting around talking about ways we can save money that it would have to go through a member of the board who has that personal responsibility to oversee safety.

Ms. MERRITT. And if I might speak to that. We did make that recommendation that the board see what a good idea it was. We did make that recommendation. And indeed, you know, I have reported to such boards in companies that have environment, health and safety committees and was asked very hard questions when there was downsizing or when we were in financial trouble whether or not things were being done correctly, and it was my responsibility to report to them on leading indicators such as audits, corrective findings, and what were the results of audits and whether funding was being spent on training and other things. So the indicators are there for boards to ask the questions if they are asking questions at all about this.

Mr. MCKEON. Thank you, and the chairman was very gracious in letting me use extra time, too, so I appreciate that.

Chairman MILLER. Thank you. I would also be interested in the qualifications of the board in the decision making process that when you double your profits from 2003 of \$10.4 billion to \$22.3 billion, this must have been the most expensive flaring system in the world if you decided

that you couldn't afford to make this change. I mean, I really want to know that process of thinking that you would use to make that decision given the history, again, and that somehow that would be a deferred expenditure of cost concerns.

Mr. Hare.

Mr. HARE. Thank you, Mr. Chairman. First of all, I can't tell you how very sorry I am for you and for all of the families involved in that loss. I can't imagine the pain you are going through and how much courage it took for you to come here today and to talk to us.

I have to tell you I worked in a clothing factory for 13 years, and there was, as I have said many times, there were 60 of us and two of us got out with all 10 of our fingers. We had one OSHA inspection in the 13½ years we worked in that plant. I find it inexcusable that OSHA—if I heard correctly, 10 years between inspections. And I would just like to know from maybe somebody on the panel—and I will have a couple of questions for another witness—what is the problem here? Is this because they don't have the inspectors? Is

this because they don't have the money to do the enforcement? Is this because they just don't feel like coming out and investigating these possible complaints? I mean, what is the holdup here? I cannot fathom technically in this industry a 10-year law between inspections. I am wondering if anybody has an opinion on that.

Ms. MERRITT. I would be glad to offer an opinion on it. The rule is there for these inspections to be done and it was envisioned by OSHA that they would inspect—plants would have comprehensive PSM inspections that could last weeks or months and that they would require highly trained and dedicated staff to do this. Unfortunately, and I can't tell you why that was never carried out. They have very few inspectors who are qualified to do process safety. Actually some of the States have done better. As a matter of fact, in Contra Costa County they have a PSM oversight group of five people that goes in and inspects each of their PSM covered operations every 3 years. So it is not a matter of difficulty. It is a matter of how are you going to resource it and then having the commitment to do it.

Mr. HARE. Mr. Cavaney, in your testimony you said that safety in the industry is a moral imperative and a top priority. And the CEO, BP former CEO said we never focused on profits above safety. Team safety has always come first. If you found that one of your members was putting profits above safety and not complying with the API standards, what would you do? Can you expel them from API, report them to OSHA or EPA, or where is the enforcement mechanism within API if there are companies that—

Mr. CAVANEY. API is not a regulatory body nor do we have any regulatory authority. We are the experts and that is why we put out recommended practices and all, and then we provide them to the government who regulates us, and it is up to the government to develop either plans off of ours or develop their own on what needs to be done. And in the case of process safety, as Chairman Miller mentioned, we provided what is called Publication 750. We created the whole thing, put together the blueprint and handed it over to OSHA in order for them to bid on, to create their regulatory scheme.

But it is up to the government, the various agencies in our refineries to do the regulation and we will comply, and I will certainly agree that more frequent investigations, looking at these things, that is how you get your improvements and continue to move forward because things do change over time.

Mr. HARE. As you are aware, OSHA only requires companies to log the illnesses and injuries on the workers on the sites. But what about the contractors? I mean, if people who are not the employees, per se, of the refinery, how do you log those illnesses and injuries and are those people, if they are not included in the safety reports, isn't that—that is really an inconclusive report, it would seem to me, if the contractors aren't reported in safety inspections or included in illnesses or accidents.

Mr. CAVANEY. If I could explain the process. The employees and contractors that are going to work on the refinery facility all go through the same training and briefings on safety.

The contractors who have an operational role in running the refinery, as an employee does, they are reported together. But the

government regulations for reporting incidents says contractors who are not on operational mode; in other words, those who are looking at a turn-around and going through construction and all, they are reported in a different category and we have no control over that. That is what the government requires us to do. But they are all trained and exposed to the same sort of briefings and awareness regardless of whether they are an employee or a contractor.

Mr. HARE. The ranking member said, you know, what can we do here. And there are a number of questions. It would really appear to me that we are going to have to take a long look at OSHA and its effectiveness and the kinds of funds that we are willing to put into it to get the inspector out there periodically because, again, I go back to this and you know I see the pain on your face. I can't for the life of me understand why a governmental agency tasked with trying to keep people safe and making sure their workplace is safe has a 10-year break between the time they go out and investigate and that is really shameful, and I am hoping this committee will be able to take that up. And I will promise you this. I will do everything I can as a permanent member of this committee to kick some OSHA people in the kneecaps.

With that, I yield back.

Chairman MILLER. Thank you. Mr. Platts.

Mr. PLATTS. Thank you, Mr. Chairman. I want to thank you for, and the committee, for holding this important hearing and hearing from the tragic events that occurred 2 years ago tomorrow and that we work to ensure these events are never repeated and that we do better to ensure worker safety.

I also want to convey my sympathies to Ms. Rowe and her brothers and all of the family members who lost loved ones on that tragic day. I regret I am supposed to be in an oversight hearing on Iraq across the hall, and I am going to yield the balance of my time for purposes of questions to Mr. Boustany, please. Thank you.

Mr. BOUSTANY. I thank my colleague.

Thank you for holding this hearing. It is a very important hearing. And I also convey my sympathies to you and the others who have lost loved ones in this.

Mr. CAVANEY, how long has API been developing industry standards?

Mr. CAVANEY. We developed the first one starting in 1924, and we have currently an inventory of about 500, and of those 500, 110 of them relate specifically to the process of safety issue.

Mr. BOUSTANY. Thank you. And are the API standards process an open process? How do you convey these industrywide?

Mr. CAVANEY. Our standards process is ANSI, accredited American National Standard Institute. And under that process, you must conduct a fully transparent and open development of standards. So anybody who is a stakeholder in the industry; in other words, somebody that has the material interest in the industry is invited to participate in the development of those standards and recommended practices.

Every year at the beginning of the year through NIST, we issue all the recommended practices and standards that are going to be reviewed in the upcoming year so that people with an interest will

have knowledge that they are going on and they are welcome. And as a matter of fact, that is the strength of the standard process, is you want experts and people outside the industry so we don't end up creating blind spots because we are not aware of something that is going on.

It does take a bit of time and it is a collaborative process, and the agreement that ultimately comes up is we end up turning out documents so that people can see how it is going forward, and as I mentioned here, a little later this spring we are going to produce the first standard recommended practice that comes out on trailers, which is a very specific finding that the Chemical Safety Board recommended that we review.

Mr. BOUSTANY. Thank you. My understanding is that the CSB report recommends that API work with the United Steelworkers on some new standards. Is API willing to work with the Steelworkers?

Mr. CAVANEY. Yes, we are. In order to develop standards, we have to be open and welcome anybody who is a stakeholder, and certainly our workforce is a stakeholder.

The points that they have raised, we have not had direct discussion but we have seen some of the press statements that they have made and those are exactly the kinds of things we factor in even though they are not at the table. So their feedback has been considered as they go forward, and I think talking earlier with Mr. Nibarger to have an opportunity now to directly engage I think will actually speed the process of assimilating some of this input into the process.

Mr. BOUSTANY. Mr. Nibarger, are the Steelworkers willing to work with API on the development of future standards?

Mr. NIBARGER. Yes, sir.

Mr. BOUSTANY. Have you worked with them before?

Mr. NIBARGER. No, sir. We have not.

Mr. BOUSTANY. Why?

Mr. NIBARGER. As far as I know, we have never been asked.

Mr. BOUSTANY. Mr. Cavaney, it sounds like the process is open and you have tried to bring in all stakeholders. Can you respond to that?

Mr. CAVANEY. It is an open process. We try to look forward. We can't change what happened in the past. I think this is an opportunity that we should all take advantage of.

Mr. BOUSTANY. You share that sentiment, Mr. Nibarger?

Mr. NIBARGER. Yes, sir, I do.

Mr. BOUSTANY. Thank you. CSB and Baker both made statements extending their findings to the U.S. refining industry as a whole. On what ground do you base those judgments? I mean, is there anything official or scientific to extend those judgments?

Mr. BOWMAN. For our part, we base those judgments not on direct inspections of other companies but rather through the massive year-long process that we went through interviewing union workers, union officials, required officials from the refinery business, contract workers who go from plant to plant, company to company. And if the red light hadn't come on when it did, I was going to say that the panel reports that we are under no illusion that the deficiencies we found at BP are limited just to BP based on those observations.

Mr. BOUSTANY. Mr. Merritt, would you like to respond to that?

Ms. MERRITT. Our investigation was at the BP facility, Texas City, and it is a corporate link to this event.

We have had many conversations with others that indicate that this is not a unique situation. As a matter of fact, in the past several years, I have been doing numerous presentations to groups and invariably every time people come up to me and say this situation exists at our facility as well. So we felt that extending these two industries, not just the petroleum industry but the chemical industry and chemical use industry as well is well-founded, that these situations exist everywhere.

Mr. BOUSTANY. Thank you.

Mr. Chairman, I see the time has expired here.

Can I claim my 5 minutes now to continue a few questions?

Chairman MILLER. No. We are going to rotate to Mrs. Shea-Porter.

Ms. SHEA-PORTER. First, Ms. Rowe, let me express my deep pain on hearing what happened to you. I worked in a factory that dealt with some chemicals through the summers, and I know they did not adhere to safety standards then, and I am so deeply disappointed to hear that even now we have this struggle and I deeply apologize. And I don't understand either. I share the rage of this committee trying to figure out why we have OSHA and why we have oversight when we don't do it.

And I am wondering how many times we will have hearings like this on the next accident and the next until we tell the truth to the American people, which is that we need oversight for every industry, and heaven knows I believe in profit also, but for every single industry in this country that has a risky part of its business, we must have the oversight, the protection so that we don't sit here again and again. And so I apologize for the failure of OSHA and the failure of so many others that have left you in such pain.

I will say that I have been looking at your parents' picture the whole time. As you know, your mother is smiling and I am sure she is smiling because of the great courage that you are showing. So she obviously raised a very good daughter.

Having said that, I would like to address some comments, please, first of all to Mr. Cavaney.

Are you asking members to report near misses to you, to API? Apparently, they didn't feel the need to report to OSHA. Do you collect any data?

Mr. CAVANEY. We don't collect the data. To say that our role in this is to set the standards and set out the framework.

Ms. SHEA-PORTER. I understand that, but do you have any kind of feedback. You have these people who are actually members of API, and I am sure you want it to look like you are really doing a good job setting the standards. Were you ever aware that data was not being collected for near misses?

Mr. CAVANEY. One of the things that we tried to do is obviously look at the latest information, and I personally have not been aware of that kind of thing, but I will ask among the people in our organization who work the standards and get back to you.

Ms. SHEA-PORTER. If you don't collect the data, there is nothing to look at. It is easy to say that everything is going well if you don't

ever open a book and have any indication at all that things aren't going well.

Let me ask you, did you ever complain as a group about OSHA standards being too tough or indeed maybe too easy? Was there ever any conversation about OSHA not showing up at plants or that you thought OSHA was, quote, breathing down the neck of the industry?

Mr. CAVANEY. I am not aware of any complaints about them being too stringent or the frequency of their visits.

Ms. SHEA-PORTER. Okay. Also, could you tell me are there any improvements in current OSHA standards or new standards that you think would help that you would be endorsing right now?

Mr. CAVANEY. Well, there is a group called the OSHA Alliance, which is they brought together many of the associations and organizations who have been involved broadly in the petrochemical and in the oil and gas industry. And what they are doing is looking at process safety and seeing how we can move it to the next level and what is the best practices efforts that are going on right now, and one of the key findings of that group is going to be when all of the reports are actually made available and reviewed is they will come out with a report and a finding about what we should do and which gets priority rankings so we can move forward from there.

Ms. SHEA-PORTER. And then what happens? I guess my concern here is that we collect reports after every accident, and they sit some place on a shelf, and then once again, we have an accident. What happens and what do you think your role could be to make sure that what you actually hear is disseminated to the groups that you represent and also that there is some kind of measurement that people cannot belong to your organization unless they are adhering to a certain standard. I mean, do you hold their feet to the fire or can you just automatically have membership because you are in the business?

Mr. CAVANEY. Two points. The first answer is when we get new findings or we hear of something, we institute a review of the standards. We go back and look at it because it doesn't—there is actually—if you go back to our documents that we produced for OSHA in the early 1990s, it says that if you don't have contemporaneous and current regulations in place and guidance, that employees go on their own and come up with other systems and some of those systems may not be any more safer and could actually be worse. So we are very vigilant about getting the latest technical information and going through that process.

On the second point you made, we are a voluntary trade association, and if we prohibit people from participating we then run into antitrust problems and so we can only provide guidance. We are not a regulatory body. So people come to us and we give the government the guidance that we have.

Chairman MILLER. Correct me if I am wrong on this. But as I understand, the Institute of Nuclear Power Operation audits the nuclear safety, and essentially, I guess, they ask companies to leave that don't comply.

Mr. BOWMAN. Yes, sir. That is correct.

Chairman MILLER. They are paid for by the industry; is that correct?

Mr. BOWMAN. Yes, sir. That organization arose after the situation at Three Mile Island. It is a peer sponsored and peer paid for organization. They have that license. They have that license to ask people to leave who don't comply.

Chairman MILLER. My assumption was what was at stake here in the future of the industry and all of those ramifications if these power plants were not operated to the state of the art and knowledge of the industry.

Mr. BOWMAN. Yes, sir.

Chairman MILLER. So there is at least one example there where this is more than a voluntary or induced paying organization where you don't throw out anybody who pays you dues. You comply with what is supposedly the best recommendations from within the industry. You either do or you are out. It is very interesting to have all of this commotion going on. We have all of this commotion. We have got all of these experts, all of these outside people reviewing this, and they can simply lay on the table. Nobody has any obligation to pick up anything. There is no downside to not taking the best recommendations that the industry can demonstrate internally.

Mr. BOWMAN. Our panel report, sir, does recommend that the refinery industry consider modeling an organization after the Institute for Nuclear Power Operations because it has been so successful in helping the nuclear industry along with the Nuclear Regulatory Commission that performs a minimum of 2,500 man-hours of preemptive inspection per year at each plant.

Chairman MILLER. This is all doable. Thank you for yielding.

Ms. SHEA-PORTER. That is exactly my concern here is that by not holding your members to standards you are allowing them to get the credit of belonging to your organization without having any responsibility to it. And I just want to read the statement that you had on your Web site saying—you are talking about the gas and oil industry being increasingly a safer place to work. This is reflected by a declining rate of illnesses and injuries, a rate much lower than that for the private sector as a whole.

Well, obviously, this company did not deserve to have that kind of praise put upon them. Very clearly they didn't deserve this. And so I am deeply disturbed that they can be a member and that you actually don't have any teeth, and so therefore, the rest of us looking at this assumed that they are reaching a certain level of professionalism and a certain level of certification and, boy, were we all wrong.

So I just would like to say that I think that, you know, we need to hold them to some kind of a standard in order to be able to belong to your organization. And I hope, I deeply hope and pray that we are not going to be sitting here again in a few years because once again you did great research, and I thank all of you for what you did, but I think it will go nowhere until we have another accident.

Mr. BOUSTANY. Thank you, Mr. Chairman. I am still not clear on the last question that I had asked about extrapolating your findings from BP to industrywide. Would you describe that information as anecdotal information or—



Ms. MERRITT. More or less, but remember, we do audits. I mean, we do investigations at a lot of facilities throughout the industries that have had explosions, fires and releases, many of them that have impacted communities extensively.

And so we recognize that the patterns of behavior we saw in this investigation were not askew from what we find at almost every other investigation.

So with that connection, I think if the evidence—I mean we track evidence, our recommendations go where the evidence leads us. And in this particular case, although we didn't investigate all of those other facilities, we have done 40 or 45 investigations in our short history and, unfortunately, we see the same pattern of behavior at facilities that blow up. So you begin to say maybe there needs to be something done to correct this behavior. And so that is why we have included other industries, not just BP's facilities, but the entire refining industry that should wake up to this and other industries that should—

Mr. BOUSTANY. Have you addressed reports to Congress based on the information prior to the BP explosion?

Ms. MERRITT. No, we haven't.

Mr. BOUSTANY. Why?

Ms. MERRITT. I don't know.

Mr. BOUSTANY. Okay. Fair enough.

Another question. One finding in the Baker Panel was the Baker Panel found that, but didn't report, the fact that Cherry Point, a nonunion refinery, had the best safety culture of all of the BP refineries. Is that what you did find in fact?

Mr. BOWMAN. The report is accurate. We would draw no conclusions from that other than it is a fact.

Mr. BOUSTANY. Okay. Thank you.

And again, Ms. Merritt, CSB has asked for a sizable budget increase next year. In the board's 2008 budget request, you specifically requested funds for addressing leading and lagging indicators. What are those indicators?

Ms. MERRITT. There are a number of them that actually are well known in industry. The Health Safety Executive of England a number of years ago put out a book with lagging and leading indicators for industry to use. There was a very serious incident at a BP facility there in Grangemouth, and one of the things that was identified was that there were not prominent leading-lagging indicators for industry. So they did quite a bit of research. Unfortunately, although many people in industry are aware of those, they are not being used.

And so we think that a study here, including industry here in the United States, and experts that could come up with leading and lagging—or leading indicators, they have lots of lagging indicators—that they would be able then to accept them and use them in their own industry in identifying when risk is growing in their operations and their companies.

Mr. BOUSTANY. What do you see your role to be with the recommendation that you gave to API that API and USW collaborate on the worker fatigue issue?

Ms. MERRITT. I think that is a very important issue. There has been a lot of research done through the National Transportation

Safety Board and others with regard to the role fatigue plays. And what we would do is that—because it is a recommendation, they would be submitting to us their results of their work together, and we would then have a board vote which would either accept it as acceptable results of that work or unacceptable results of that work. And that would be our work.

Mr. BOUSTANY. Thank you. That is all I have, Mr. Chairman. I yield back.

Chairman MILLER. Thank you. Ms. Sanchez.

Ms. SANCHEZ. Thank you. And I want thank you, all of our witnesses, for your testimony here today.

My first question is for Mr. Cavaney. We now know that BP cut the Texas City refinery's budget by 25 percent in 1999 even though previously Amoco had made deep budget cuts. Maintenance supervisors, control room operators, central training staff and training programs all went under the budget knife. Now in your testimony, you state that safety in the industry is a moral imperative and a top priority.

I think most people would agree, and there may be room for argument, that corporate executives in your industry, not just your industry but others as well, continually get rewarded for reducing costs and increasing stock prices. So my question to you is, is cooperation really enough? I mean, or do you think that it is imperative that your industry be closely watched by independent and strict regulators because my feeling is if you don't have nonvolunteer programs, strict auditors, strict inspections, how can you be sure that the profit motive isn't going to bind decision makers who are seeking short-term benefits to pump up stock prices, for example?

Mr. CAVANEY. We do have one of the most complex regulatory oversights. There are six different Federal agencies who have oversight responsibility for regulating us. That is why we have such an extensive series of recommended practices in place and all.

But I want to underscore again, if you go to any refinery, almost the first thing you are going to see when you come in is a large sign that talks about the incident rate where they take great pride in trying to reduce those. It is a difficult operating environment, but we do all that we can. And our nonfatal incident rate is about—at only about 25 percent of all manufacturing industry average. So we have made some gains and we can do better.

And that is what we are trying to learn from these CSB reports, the Baker Commission, looking forward to the opportunity of working with the Steelworkers.

It is a continuous improvement process, and you keep working at it and the regulatory oversight, they should come in and be a participant. We provide these things to them and then it is in—it is their responsibility to set their regulatory framework and what they are going to do or tell us this is not correct and we look at it again.

Ms. SANCHEZ. I appreciate your answer. I think what I am trying to get at is the fact that OSHA inspections sort of moved in this area of voluntary compliance instead of the ongoing oversight that it—active oversight that it should have had.

So my next question is for Ms. Merritt. Considering that OSHA has only a limited amount of funding, would you recommend that they put more towards enforcement or towards these voluntary partnership programs?

Ms. MERRITT. Well, the problem with voluntary programs is not everybody volunteers.

Ms. SANCHEZ. Very well said.

Ms. MERRITT. I think OSHA does have a very prominent role in educating industry about hazards that exist when they are identified, and so for that I think they do have a very large role in that program.

But, you know, enforcement is necessary. Otherwise, if you have a voluntary compliance, then, you know, it sort of sets its own standards and you will have some companies, and I see this all the time, who go above and beyond what is required and they know it is good business. But you have a lot of companies who will only do what is required. And remember, regulation is a kind of an agreement that is settled at the lowest denominator that is acceptable. And then you have companies that won't do anything unless they are caught. And those companies are at risk. And their employees and their communities are at risk.

Voluntary standards work if there is good enforcement that is required for the rules that are required. PSM is required. It is not a voluntary standard. And to have voluntary alliances on implementing PSM is kind of an oxymoron because it is required. OSHA needs to be spending resources on making sure for the American public that PSM is implemented. I have said it before. It is a good rule when it first came out. I read it, and I went to my CEO and I said if we are not doing this already, shame on us. It is a good rule. And it will prevent these catastrophic accidents from happening if it is implemented. The problem is it is not being implemented everywhere.

Ms. SANCHEZ. I have no further questions.

Chairman MILLER. Thank you. Mr. Sarbanes.

Mr. SARBANES. Thank you, Mr. Chairman.

I thank the panel for testimony, Ms. Rowe in particular. It is clear you are still in a lot of pain from this accident, and you showed tremendous courage being here today to testify.

Mr. Cavaney, I am curious as to the reaction of API to this tragedy. Was it one of saying—because you talked about how the audit has now stimulated the industry and API to develop new, more heightened standards. Are there—can you give me three examples of a standard that has been newly fashioned or articulated as a result of this? That if it had been in place it might have made a difference in that case? If it had been followed in that case?

Mr. CAVANEY. I can give you, Congressman, some specific examples of things that we are doing, and if the intent of doing the new recommended practices is they will improve the safety of the environment, then theoretically you could argue that you would have fewer incidents from that. That is what the whole process is about.

The first of these I mentioned in my opening testimony could be—we heard earlier from the Chemical Safety Board about concerns with regard to trailers in refineries. And so we have been

through a process and will this spring issue a final new recommended practice on trailers. So that is one aspect.

The second one, as was mentioned by the chairman, are concerns about these sort of “blow down” circumstances where they are dealing—their recommendation was where we look at a situation where they convert over to a closed system with flaring process. We also have that particular standard and recommended practice in review, being now out for circulation, comment and going through the regulating process and it will be coming out.

We have also got a task force working on what we call process safety performance metrics, and this goes to the point several of the people have mentioned, which is creating a methodology where you can capture specifically those possible early indicators that you ought to pay attention to those. So as soon as that task force work is done, we will then formally go into the ANSI process and anticipate that.

We are also anticipating the other recommendation that we haven’t yet received, but we know it is going to be coming, is this situation about worker fatigue and what we can do in that regard. From my experience, though, I have looked and talked to a number of people, and usually the hours and things like this are agreed upon by the owner/operator and the workforce at the time the contracts are signed and so we will have to look at that from a number of ways, but it is going to go into that process.

So we do take this stuff seriously. It is an open process. Anybody who is a stakeholder can come and offer their inputs, their suggestions and see whether or not we are doing what we are asked to do.

Mr. SARBANES. So the implication of now stepping into those higher standards or taking the three that you described is that they weren’t there before, right?

Mr. CAVANEY. No. That is not necessarily true.

In some cases the Chairman from CSB said some companies operate at a very high level, well beyond standards. Others have them in place. We had—a lot of this stuff is actually down but there were new things that were brought to light that we were not aware of as a result of the CSB investigation and those things now cause us to factor in a new review and take those under consideration.

That is the the thing I mentioned earlier, this is a continuous process. As technology changes, as new demands are put on industry, other necessary things come to light and you want to factor those in. We mentioned also if you don’t operate your recommended practices and standards, the workforce knows they are not relevant to the circumstances and they create their own rules and do their own things, and that is not good for safety.

Mr. SARBANES. I guess it raises a question of how much the standards that matter depend on an incident occurring in order to trigger them versus ahead of time preemptively doing the kind of review and study and enforcement that would put those standards in place so that these things wouldn’t happen to begin with. So that was the nature of my question.

I am running out of time, but I wanted to say, Mr. Chairman, that we are talking about a combustible mix here that produced

this tragedy in terms of the physics of it. But I am brought to a different kind of combustible mix, and that is that you hope that an individual company will enforce the kinds of standards that would avoid this kind of a tragedy but that doesn't always happen. You then hope that the industry will enforce standards in the absence of an individual company doing it. But where an industry doesn't do it, then you have the kind of regular oversight that OSHA represents and that is when you need the resources in place to make sure the inspections are there. So I think a terrific case has been made this morning for why we need some mandatory oversight with respect to OSHA and the resources to back that up.

Thank you, Mr. Chairman.

Chairman MILLER. Thank you. Mr. Holt.

Mr. HOLT. Thank you, Mr. Chairman, and thank you for holding this hearing. Thanks to the witnesses and Ms. Rowe. We appreciate your coming knowing how difficult it is.

We are here not to just express sympathy though. We are supposed to take actions that make people's lives better. A historic example of that was when, under the leadership of the late Senator from New Jersey, Pete Williams, we created OSHA. It was so that workers could go to work without fear, perhaps with caution but without fear, and expect to come home at the end of the day and expect to come home with their fingers and their eyesight and their lungs intact.

Chairwoman Merritt, you spoke of your commission being absolutely terrified that such a culture could exist.

Now, I don't mean to demonize the industry, but the industries in many cases have demonized OSHA. Get the government out of our way, they say. Free us of the cost of compliance. Let us police ourselves. And in effect, over the years they have managed to turn OSHA into a starved lap dog.

In New Jersey here, we have from the New Jersey Work Environment Council a report with regard to process safety management, of the 21 facilities in New Jersey that could each potentially harm 15,000 or more people, only eight have been inspected by OSHA in the last 5½ years. Six have never had even one OSHA inspection.

It seems that we need catastrophic deaths to get an action.

Well, Mr. Cavaney, you and I have had really interesting and informed and rational discussions about a variety of matters, including alternatives to fossil fuels and other things. And, you know, but I have a question for you. It seems to me these findings would lead you and your organization to say things have to change at OSHA.

Would you support that OSHA increase staff, training and general resources, that OSHA require sites to report close calls and warning events, that injury reports be kept for each site, including contractors, everyone involved and the risky activities, that there be process review audits and that OSHA resources go for increased enforcement rather than voluntary programs and partnerships? And if not, why not?

Mr. CAVANEY. Well, I think that OSHA, any regulatory oversight, has a proper role and it ought to do its function, whatever is deemed to be possible to fulfill its mission.

Mr. HOLT. Would you support a requirement of process review audits?

Mr. CAVANEY. I am sorry, I am not an expert on that. We would have to look at that—

Mr. HOLT. Would you support that there be required reports of close calls and warning events at every OSHA covered site?

Mr. CAVANEY. I would like to respond to the list that you gave of items after the hearing if I could and give you the exact answer.

Mr. HOLT. And an injury report for each site, total site.

Mr. CAVANEY. If that is appropriate. I just don't know. I will get it to you. And we do support—

[The information follows:]

AMERICAN PETROLEUM INSTITUTE,  
Washington, DC, April 12, 2007.

Hon. GEORGE MILLER,  
Chairman, House Committee on Education and Labor, House of Representatives,  
Washington, DC.

DEAR CHAIRMAN MILLER: In response to your April 5, 2007 letter to me following up on my March 22 testimony at the House Education and Labor Committee hearing on "The BP Texas City Disaster and Worker Safety," API offers the following responses to your questions:

**Would you support a budget increase for OSHA that would increase staff, training, and general resources dedicated to enforcing the process safety management standards in our nation's refineries and chemical plants?**

*API Reply:* As a matter of policy, API does not offer comments on government agency appropriations or the adequacy of agency budgets. However, it is important that OSHA be adequately resourced to accomplish its mission.

**Would you support a requirement for refineries to report close calls and warning events to OSHA?**

*API Reply:* The current OSHA regulations on "Process Safety Management of Highly Hazardous Chemicals" (29 CFR 1910.119) already requires that "The employer shall investigate each incident which resulted in or could reasonably have resulted in a catastrophic release of a highly hazardous chemical in the workplace", and requires employers to maintain these records for inspection by OSHA for five years. I would also note that Ms. Carolyn Merritt, Chairman of the U.S. Chemical Safety Board, remarked during the March 22nd hearing that this regulation, as currently written, is a "very important and well done rule."

**Would you support that OSHA injury and illness reports be kept for all workers at the site, including contractors, rather than just the main employer?**

*API Reply:* The PSM regulation already requires companies to maintain employee and contractor employee injury and illness logs on-site related to work in the process areas (29 CFR 1910.119 Section h(2)(vi)).

**Do you believe that API should require regular third party process review audits as a condition for membership?**

*API Reply:* API has a long and distinguished history of developing industry consensus standards. Due to antitrust concerns, API does not make its standards mandatory for membership, which is consistent with current practice. Therefore, API does not conduct audits or require third-party audits of its members' compliance with API standards.

**Do you think that OSHA's resources should go for increased enforcement rather than voluntary programs and partnerships?**

*API Reply:* Again, API's response is similar to that of the first question above. API believes it is the agency's role and responsibility to manage its resources with Congressional oversight; thus, it would not be appropriate for API to comment.

If there are any further questions, or if you would like any further briefings to any of the questions above, please contact me. API would be happy to arrange a meeting for you with the appropriate, qualified individuals.

Sincerely,

RED CAVANEY,  
President and Chief Executive Officer.

Mr. HOLT. This should be a wakeup call and OSHA—this is not what was intended when nearly 4 decades ago we passed OSHA. It made a huge difference. There are people who have their fingers, their eyesight, even their lives because of OSHA. But it is becoming less and less effective. And we have a responsibility, I think, to restore that effectiveness to OSHA.

Chairman MILLER. Will, the gentleman yield?

I would hope that you, Mr. Cavaney, you and API would take the questions that Mr. Holt just asked you and give them very, very serious consideration because I think we are reaching a point here where API can become an enabler for very bad behavior and provide cover for very bad operators, and I don't think that is the intent of the organization, and I have had a long relationship with the organization and I have a great relationship with the refineries in my district. But I am worried here that you can say whatever OSHA does, OSHA does, and whatever is sufficient is sufficient and whatever happens, happens. At some point, you are enabling really bad behavior because they are hiding behind that they belong to an organization that is on the cutting edge. But if the cutting edge never cuts, I suspect that we have got a problem here. And we have lived with this notion for a long time, but I think you can hear from the members of this committee on both sides of the aisle that perhaps this voluntary compliance, on whatever level, happens, happens is not suitable. I don't know the answer yet, and I will work with my colleagues to determine that. But I would take those questions very seriously as an organization because someone is going to have to come out from behind this and start to recommend what should be done to protect and to save the lives like the parents of Ms. Rowe here. I think it is critical to that, and I thank the gentleman for yielding.

We are running out of time, and I want to give Mr. Sestak a moment here.

But before that, Ms. Rowe, I would like to ask you if you could tell us about the Remember the 15 bill that you will be talking to the State legislature tomorrow.

Ms. ROWE. Well, can I have my attorney? Brent can tell you.

Chairman MILLER. Whatever is comfortable.

Mr. COONTZ. Thank you. I paid—

Chairman MILLER. Just identify yourself for the record.

Mr. COONTZ. Brent Coontz from Texas. I am Eva's personal counsel. I have also had the pleasure of serving as liaison counsel for all of the plaintiffs in the litigation pending as a result of this tragedy. I am also general counsel—

Chairman MILLER. Tell us about the bill.

Mr. COONTZ. The bill is Remember the 15 bill, and basically what we have done from the investigation and the civil litigation is address many of the things that we thought all along were the root causes; that is, the trailer citing issues, ban the utilization of temporary trailers inside of facilities; the mandatory warning and evacuation of personnel, nonessential personnel; and the startup and shutdown of units which are well known to be the times of gravest risk in the industry; mandating proper training, proper tracking of near incidents, of near misses. It is those types of common sense issues. Removal of open ventilation systems. Obviously, the blow-

down drums here are antiquated technology and those types of things should all be removed.

Most all of those are common sense protocols. We go before the Texas legislature tomorrow. We have sponsors of this bill in both the House and the Senate, and we are using tomorrow, the anniversary, as the platform to publicize that legislation.

Chairman MILLER. Thank you.

Ms. Rowe, did you want to say something else?

Ms. ROWE. I think maybe you guys should consider making an OSHA for every State, not just one worldwide one, that every State has itself—

Chairman MILLER. That was one of the plans.

Mr. Sestak.

Mr. SESTAK. Thank you again, Ms. Rowe. Just 30 seconds.

The question I was going to ask was the same one Mr. Holt asked almost, although he always speaks better than I can.

But that is what I am interested in since in Marcus Hook we have Conoco and Sunoco, and I wasn't here for Admiral Bowman's comments, but I am sure that I have seen a system in the U.S. Navy that truly understood that no accident can be done. You have done it. And there is a system, and that type of attention to detail, you know, sometimes you get—you can expect what you inspect. And I am very interested in it because I have gone to both refineries.

And again, Admiral, I wasn't here for your portion of it. It was a great mentor to me. But that type of system I truly believe has to be done to walk and crawl through those spaces there and to watch what could be prevented. So I would just—and I need to conclude. I would be very interested in the answer that the chairman really looks forward to.

Chairman MILLER. Thank you very much, Mr. Sestak. Let me thank you all for your testimony.

Mr. Nibarger, we didn't really get to you. I am going to ask if you can come back because I have a whole set of questions that I wanted to ask you about trying to put together what Mr. Cavaney has talked about in terms of finally getting these workers and employers together not in an adversarial—not related to contracts. And I was just visited by Kaiser, which I believe is the largest HMO in the country, and SEIU, and since they joined forces here over the last several years, we have seen accident rates go down, litigation rates go down, quality go up, death rates go down. And the fact of the matter is we can develop workplaces, as Admiral Sestak pointed out, we do it all of the time in the military where these are just unacceptable losses and to be avoided. But so my apologies that we didn't get a chance to ask you a question.

I have a whole series of additional questions, but we are going to be about 45 minutes on this vote. You have been very generous with your time, with your expertise. So I am going to adjourn the committee, but I would hope, you know, that we plan to follow up with each of you as we progress through this. I think you can tell this is a very, very serious matter for the members of this committee on both sides of the aisle.

But clearly the status quo is unacceptable and again my thanks to the Chemical Safety Board. I can't tell you the value of your



independence and what it has meant to workers, and I hope to employers, across this country as you have led these investigations and to you and your staff and your persistence. Thank you so very, very much.

With that, the committee will stand adjourned.

Thank you.

[The prepared statement of Mr. Marchant follows:]

**Prepared Statement of Hon. Kenny Marchant, a Representative in Congress  
From the State of Texas**

Mr. Chairman, thank you for convening this hearing.

There is no doubt that BP's Texas City incident was tragic and inexcusable. I support the work of the Chairman and the CSB in examining this matter. However, I find it interesting that two of the subjects of this hearing—BP and OSHA—are not here to speak for themselves. I want to be very clear, I don't defend or condone the actions of either of these entities, but in the spirit of equal time, I'd like to submit for the record a copy of the statement that BP issued last evening stating:

"BP accepted responsibility for the March 23, 2005 explosion and fire at the Texas City refinery. We have apologized to those harmed. While we cannot change the past or repair all the damage this incident caused, we have worked diligently to provide fair compensation, without the need for lengthy court proceedings, to those who were injured and to the families of those who died. On the recommendation of the U.S. Chemical Safety and Hazard Investigation Board (CSB), we created an Independent Panel, led by Former U.S. Secretary of State James A. Baker, III to assess process safety management and safety culture at our US refineries. The Independent Panel undertook extensive investigations, and issued their report in January of this year. BP is implementing the recommendations in full. We have completed and made public the results of our own investigation of the incident and, as CSB Chairman Merritt has publicly recognized, BP cooperated in an unprecedented way with the CSB investigation. BP voluntarily produced to CSB over 6,300,000 pages of documents, made over 300 witnesses available for CSB interviews, including some of its most senior executives and, importantly, agreed to form the Independent Panel. Notwithstanding the Company's strong disagreement with some of the content of the CSB report, particularly many of the findings and conclusions, BP will give full and careful consideration to CSB's recommendations, in conjunction with the many activities already underway to improve process safety management."

Thank you, Mr. Chairman.

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[Whereupon, at 11:50 a.m., the committee was adjourned.]

