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

What have we learned from these tragic events? Certainly we have learned that in our nation's energy producing industry, the status quo is not working. In the past four months alone, at least 58 workers have died in explosions, fires and collapses at refineries, coal mines, an oil drilling rig, and a natural-gas-fired power plant construction site. Not all of

these tragedies are within OSHA's jurisdiction; the *Deepwater Horizon* was an offshore drilling facility, technically a "vessel" not subject to OSHA requirements, while mine safety is within the purview of OSHA's sister agency, the Mine Safety and Health Administration (MSHA). Nevertheless, the toll of worker deaths and injuries on the job is sounding an alarm about a major problem throughout the energy industries — a problem that OSHA must help address.

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

OSHA's Experience with refineries illustrates widespread problems

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

I am sorry to report that the results of this NEP are deeply troubling. Not only are we finding a significant lack of compliance during our inspections, but time and again, our

inspectors are finding the same violations in multiple refineries, including those with common ownership, and sometimes even in different units in the same refinery. This is a clear indication that essential safety lessons are not being communicated within the industry, and often not even within a single corporation or facility. The old adage that those who do not learn from the past are doomed to repeat it is as true in the refinery industry as it is elsewhere. So we are particularly disturbed to find even refineries that have already suffered serious incidents or received major OSHA citations making the same mistakes again.

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

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

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

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

Chemical process safety management

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

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

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

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

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

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

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

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

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

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

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

And it may seem obvious, but it bears emphasizing: *Organizational safety culture must start at the top*. It is vitally important for corporate leadership to create an environment within the workplace where workers feel they can report safety and health concerns without repercussions. Since OSHA inspectors cannot visit more than a fraction of the nation's workplaces, we rely on the eyes and ears of workers to help identify workplace hazards. To this end, OSHA must protect whistleblowers from retaliation or

discrimination. The need for effective whistleblower protection is especially important in process safety management, because PSM systems rely upon effective communication of hazard information to and from workers involved in these hazardous operations. We applaud the Subcommittee's work on the Protecting America's Workers Act to strengthen and expand protections for worker voice in the workplace.

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

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

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

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

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

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

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

accurate. That is why we are paying special attention to incentive and discipline programs that discourage workers from reporting injuries and illnesses.

Conclusion

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

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

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

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

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

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

stated earlier, we also support Congress passing the Protecting America's Workers Act to give OSHA the tools needed to improve and expand its PSM enforcement and more effectively deter safety and health violations.

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