



News Conference Statements U.S. Chemical Safety Board October 31, 2006

Chairman Carolyn W. Merritt:

Thank you. Good morning and welcome to this news conference of the U.S. Chemical Safety Board, the CSB. I am Carolyn W. Merritt, Chairman and Chief Executive Officer of the Board.

The CSB is an independent federal agency that investigates major chemical accidents at fixed facilities. The Board is headed by five members appointed by the president and confirmed by the Senate.

For the past nineteen months, the CSB has been investigating the root causes of the tragedy at the BP Texas City refinery on March 23, 2005. The accident took fifteen lives, injured 180 others, and was the worst industrial accident in the U.S. since 1990.

This investigation has been the largest, costliest, and most complex in the agency's nine-year history. Our investigation remains ongoing.

We hope to release our final report in March 2007, around the two-year anniversary of the event.

Yesterday, the CSB investigative team released an extensive set of new findings. These findings describe BP's knowledge of widespread safety problems prior to March 2005. In 2004, BP's own auditors found serious safety problems that were common across 35 business units worldwide – including Texas City.

The CSB findings describe the drastic effects of corporate cost-cutting at the Texas City refinery, where maintenance and infrastructure deteriorated over time, setting the stage for the disaster.

BP recognized the existence of significant problems and in some cases was working to improve performance, but catastrophic hazards remained. In the words of one senior BP official, it was simply "too little, too late."

The experience of BP should serve as a cautionary tale to every oil and chemical company that hears this message. The problems at BP are not unique to one refinery, to one division, or to one corporation.

What BP experienced was a perfect storm where aging infrastructure, overzealous cost-cutting, inadequate design, and risk blindness all converged.

The result was the worst workplace catastrophe in more than a decade.

But no corporation should believe it is immune from what happened to BP. As Chairman of the Chemical Safety Board, it is my privilege to travel throughout the U.S. and the world meeting with corporate officials and safety leaders from many different industrial sectors.

Almost everywhere I go, I hear one consistent message from companies. They tell me that they worry about what happened at BP. They worry that their organizations face some of the same threats of risk blindness, cost-cutting of safety programs, and deterioration of management systems.

Back in August 2006, when I first called what happened at BP a problem of safety culture, many wondered whether our findings could be applied beyond that one corporation.

Today, I can confidently say that the safety culture message resonates deeply almost everywhere I go. Many people in positions of corporate responsibility tell me they are deeply concerned about a perceived erosion of safety culture and process safety management over the past decade.

This morning, the Chemical Safety Board is issuing new safety recommendations calling on the U.S. oil industry to improve safety practices for refinery pressure relief systems.

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PAGE 1 OF 3

We are calling on the industry to eliminate the type of atmospheric vent that caused the flammable release in Texas City.

Unfortunately, the weaknesses in design, equipment, programs, and safety investment that were identified in Texas City are not unique either to that refinery or to BP.

Federal regulators and the industry itself should take prompt action to make sure that similar unsafe conditions do not exist elsewhere.

Taken as a package, the new CSB safety recommendations we issue today will provide for effective guidance, outreach, and regulatory enforcement to reduce the risk of similar tragedies in the future.

I will now ask CSB lead investigator Don Holmstrom to describe the new findings that form the basis for the recommendations. Mr. Holmstrom?

Lead Investigator Don Holmstrom:

Thank you, Chairman Merritt.

The accident in Texas City occurred during the startup of the refinery's octane-boosting isomerization unit, or ISOM, when a distillation tower was overfilled with highly flammable liquid hydrocarbons.

The overfilling caused the tower to overpressure, opening three emergency relief valves. Liquid flowed through the relief valves into an attached blowdown drum, which was undersized, and it also then flooded.

Because the blowdown drum vented directly to the atmosphere, there was a geyser-like release of highly flammable liquid and vapor onto the grounds of the refinery, causing a series of explosions and fires that killed workers in and around nearby trailers.

Our investigation found that this one antiquated blowdown drum was connected to 58 different relief valves in the ISOM unit. BP had not conducted a required relief valve and piping study to determine if the blowdown drum was adequately sized to contain a foreseeable emergency release.

We found that this was true of many units at the Texas City refinery – the relief valve studies just hadn't been done, although they are required under federal safety regulations.

As a study could have revealed, the ISOM blowdown drum simply wasn't large enough to hold all the liquid released from the distillation tower if it flooded.

Not only could the blowdown drum not hold enough liquid, but it could not assure safe dispersion of flammable vapors through the vent stack.

Safe dispersion of flammable vapors requires a high exit velocity that can never be guaranteed when handling multiple discharges through a complex piping system.

This design weakness resulted in unsafe conditions in Texas City prior to the March 23, 2005, accident.

The CSB investigative team has documented eight previous releases of vapor from the same blowdown drum from 1994 to 2004. In six cases, dangerous flammable vapor clouds formed at ground level but did not ignite. In two other cases, the blowdown stack caught fire.

The six incidents where there were ground level vapor clouds could have had catastrophic consequences, but for the absence of an ignition source.

BP's own safety standards, adopted from Amoco and in force since 1977, stated that new blowdown drums were not allowed and that existing blowdown drums should be removed whenever major modifications were made. This policy was not effectively followed in Texas City.

In 2002, BP engineers did propose eliminating the existing ISOM blowdown drum and connecting the relief valves directly to a flare system, which would be inherently safer.

However, this was not done. Cost pressures drove this decision.

In fact, prior to the accident, BP had 17 similar blowdown drums at its five North American refineries that released flammables directly to the atmosphere.

After the accident, BP pledged to eliminate all the drums in favor of safer alternatives, such as flare systems.

A properly designed flare system includes an adequately sized vessel for containing liquids and a stack with a burner for safely combusting flammable vapors, preventing an uncontrolled fire or explosion near personnel.

Flares are the most commonly used disposal system for flammable releases in refineries.

Long before the accident, in 1992, OSHA cited what was then the Amoco Texas City refinery for operating an unsafe blowdown drum. This drum was not in the ISOM unit but was otherwise similar.

However, Amoco succeeded in having the citation and fine withdrawn. The company asserted that the drum complied with accepted industry standards. Amoco pointed specifically to American Petroleum Institute Recommended Practice 521, *Guide for Pressure Relieving and Depressuring Systems*.

The American Petroleum Institute is a leading oil industry trade association that develops safety practices that are widely used in the oil and chemical industry, both in the U.S. and elsewhere.

CSB investigators reviewed API Recommended Practice 521 and found that it has important gaps. It does not consider liquid overfilling of a vessel as a potential hazard. It does not provide adequate guidance for sizing disposal drums. Finally, it does not provide assurance that all flammable vapors released through atmospheric vents will be safely dispersed in air, avoiding the danger of explosion.

Chairman Merritt will now announce the Board's recommendations, which were just approved on a unanimous five-to-zero vote. Chairman Merritt?

Chairman Merritt:

Thank you, Mr. Holmstrom.

The first recommendation calls on the American Petroleum Institute to strengthen its Recommended Practice Number 521, *Guide for Pressure Relieving and Depressuring Systems*.

The revised guidance should warn against using blowdown drums similar to those in Texas City, urge the use of inherently safer flare systems, and ensure companies plan effectively for large-scale flammable liquid releases from process equipment.

The U.S. Chemical Safety Board is calling today on the Occupational Safety and Health Administration, OSHA, to establish a national emphasis program promoting the elimination of unsafe blowdown systems in favor of safer alternatives, such as flare systems.

OSHA should also emphasize the need for companies to conduct accurate relief valves studies and use appropriate equipment for containing liquid releases.

The OSHA national emphasis program will result in a concerted inspection and enforcement effort to eliminate hazards like those that caused the tragedy in Texas City.

Because of the importance of these recommendations, we decided they could not wait for the completion of our final report next year. Today, we are asking both OSHA and the American Petroleum Institute to take prompt actions that will help save lives in the future.

Thank you for coming today, and we'll be happy to answer your questions. Please state your name and affiliation as you begin.

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