

**Statement of CSB Investigations Supervisor Don Holmstrom Updating the Public  
on the CSB's Investigation of the Catastrophic Accident at Kleen Energy,  
Middletown, Connecticut**

**Embargoed Until 11:00 a.m. Eastern Standard Time  
Thursday, February 25, 2010**

Good morning I am CSB Lead Investigator Don Holmstrom; thank you for coming to this CSB news conference. The Chemical Safety Board is an independent federal agency that investigates and reports to the public on the causes of major chemical accidents at industrial sites across the country. The CSB is headed by five board members appointed by the president and confirmed by the Senate.

The CSB's reports and safety recommendations to Congress, federal and state regulators, and industry are widely followed and applied throughout the United States. Our mission is to prevent disastrous accidents of the kind that occurred here less than three weeks ago.

The safety issues raised by this accident are not limited to Connecticut. These issues are larger than any particular company, facility, or individual. The U.S. has embarked an ambitious construction effort for new natural gas power plants. Thousands and thousands of workers across the country will be involved in constructing these plants. The safety of these workers and the nation's energy independence are at stake as these gas-fired plants are built over the next 20 years.

The CSB has a team of ten here investigating at the Kleen Energy accident site. On behalf of all of us at the CSB, we extend our deepest condolences to the families of Ronald Crabb, Peter Chepulis, Raymond Dobratz, Kenneth Haskell, Christopher Walters and Roy Rushton. The goal of the CSB investigation is that terrible accidents like this will not happen again and that no families will suffer such tremendous losses in the future.

The CSB team arrived at the site on February 8th. Since that time, the CSB team has conducted a large number of interviews, reviewed documents, and closely examined the accident site on numerous occasions. We appreciate the outstanding cooperation from the workers at this facility, who despite living through such a horrible ordeal have provided valuable information to CSB investigators.

This accident occurred during a planned work activity to clean debris from natural gas pipes at the plant. To remove the debris, workers used natural gas at a high pressure of approximately 650 pounds per square inch. The high velocity of the natural gas flow was intended to remove any debris in the new piping. At pre-determined locations, this gas was vented to the atmosphere through open pipe ends which were located less than 20 feet off the ground. These vents were adjacent to the main power generation building and along the south wall. The open pipe ends are visible here in the photographs.

You can actually see the high-pressure gas venting out of one of these open pipe ends in this photograph taken a short time before the accident on February 7.

This cleaning practice is known within the natural gas power industry as a “gas blow.” Industry personnel have indicated to CSB investigators that gas blows are a common practice during the commissioning of new or modified gas pipes at their facilities.

CSB investigators have reviewed gas utility records for the morning of the accident. These records together with written pipe cleaning procedures and witness testimony confirm that the gas blows occurred intermittently over the course of the morning. At the same time that gas blows were underway, there were potential ignition sources present in the surrounding area, including inside the power plant building. There were many construction-related activities underway inside the building.

Determining the exact ignition source is not a major focus of our investigation at this point. In most industrial worksites, ignition sources are abundant and efforts at accident prevention focus first and foremost on avoiding or controlling the release of flammable gas or vapor.

Initial calculations by CSB investigators reveal that approximately 400,000 standard cubic feet of gas were released to the atmosphere near the building in the final ten minutes before the blast.

That is enough natural gas to fill the entire volume of a pro-basketball arena with an explosive natural gas-air mixture, from the floor to the ceiling.

This gas was released into a congested area next to the power block building. This congested area likely slowed the dispersion of the gas. The gas built up above the lower explosive limit of approximately 4% in air and was ignited by an undetermined ignition source.

In the days since the accident, companies and safety regulators from around the world have contacted the CSB asking about the circumstances of this devastating accident. Some companies, including a power plant here in the region, indicated that they themselves have been planning similar gas blows as part of commissioning pipes in the very near future.

A major focus of the CSB investigation is to determine what regulations, codes, and good practices might apply to these gas blows. To this point, no specific codes have been identified, but we are continuing our research.

In the meantime, we strongly caution natural gas power plants and other industries against the venting of high-pressure natural gas in or near work sites. This practice, although common, is inherently unsafe.

The CSB is investigating possible alternatives to this practice, including the use of air, steam, nitrogen, or water or the use of combustion devices to safely destroy the gas. Combustion devices like flares can safely burn up flammable gas or vapor, preventing the possibility of an explosion.

Recommending safer alternatives will be a primary focus of the CSB investigation as we move forward.

Just three days prior to this tragic accident, the Chemical Safety Board recommended changes to the National Fuel Gas Code to prevent disastrous explosions involving gas purging. We note with great appreciation that just yesterday, at a meeting in San Francisco, the NFPA panel responsible for the fuel gas code voted to move forward with the CSB's recommendations to make purging practices safer at work sites across America. These provisions will apply at hundreds of thousands of facilities, once fully adopted.

The type of purging described in that code is different from the gas blows used in the power industry, and power plants remain exempt from the national fuel gas code. However, gas purging as defined in the code has certain similarities to gas blows, in that gas is applied at one end of a pipe and gas is intentionally vented at the other end to the atmosphere.

There is an underlying common theme among the tragic accidents at Kleen Energy, the ConAgra Slim Jim plant in North Carolina, the Ford River Rouge power plant in Michigan, the Hilton Hotel in San Diego, and many other purging-related accidents. Companies must ensure that flammable gases are not vented into close proximity with ignition sources and workers. That is a vital safety message from all these tragedies.

We encourage the gas power industry to closely study the very positive actions recommended by the NFPA and the American Gas Association committees yesterday. The CSB investigation will focus on determining what permanent changes in standards or practices are needed to prevent future accidents involving gas blows.

Thank you for attending this morning and we will be happy to answer questions from members of the media. Please state your name and affiliation with your questions.