



U.S. Chemical Safety and
Hazard Investigation Board

STATEMENT
U.S. CHEMICAL SAFETY BOARD
August 11, 2010

**Statement of CSB Board Member John Bresland
Commending the Action by the National Fire Protection
Association (NFPA) to Prohibit Indoor Purging
of Gas Pipes**

**Emergency Change to National Fuel Gas Code Addresses Cause of Fatal
June 2009 Blast at ConAgra Slim Jim Plant in North Carolina**

On February 4, 2010, I presided at a Chemical Safety Board public meeting in Raleigh, North Carolina, to present the CSB's findings on the June 9, 2009, natural gas explosion at the ConAgra Slim Jim manufacturing plant in the nearby community of Garner.

That tragic and preventable accident cost four lives, injured 67 others, and led to a decision to close the plant, with the loss of hundreds of jobs in the region. The accident occurred during an operation to purge (or clear air) from a new steel gas-supply pipe that was connected to a newly installed industrial water heater. The pipe was connected at the other end to the building's natural gas distribution system. During the purging operation, gas was allowed to flow through the pipe and exit through an open valve inside the utility room where the water heater was located. Due to difficulties in lighting the water heater, the purging operation was continued for an unusually long time, eventually causing gas to accumulate above the lower explosive limit inside the building. The gas contacted an ignition source and exploded, causing extensive sections of the large facility to collapse.

The CSB noted that the accident at ConAgra was but one of a number of similar explosions caused by an intentional, planned work activity that inadvertently led to a large and unsafe release of natural gas into a workplace.

At the time of the accident, indoor purging of natural gas systems was not prohibited under the National Fuel Gas Code, a key consensus code of the National Fire Protection Association (NFPA) that has been adopted by many states and localities across the country. At the February 4 public meeting, the Board voted to make urgent recommendations to NFPA and the International Code Council to prohibit indoor purging and require companies and installers to purge flammable fuel gases to safe locations outdoors, away from workers and ignition sources.

I am pleased that the NFPA made our recommendation a high priority and took immediate steps to improve the National Fuel Gas Code. Last week, on August 5, the NFPA Standards Council gave final approval to [an emergency code change](#), known as a Tentative Interim Amendment, that will prohibit indoor purging of industrial gas lines

operating at greater than two pounds per square inch gauge (psig) or meeting certain pipe size criteria. According to the NFPA, the new requirements are designed to require outdoor purging for industrial, large commercial, and large multifamily buildings.

These new provisions would have required the gas pipe at ConAgra to be purged outdoors, away from personnel and ignition sources. Under the new requirements, purging must be monitored using appropriate detection equipment to prevent a significant release of flammable gas. The new requirements are similar to new safety procedures developed and implemented by both ConAgra and the State of North Carolina in the months following the tragedy.

Outdoor purging is inherently safer than venting gas into a building. Had the gas pipe at ConAgra been safely purged outdoors, the explosion and resulting deaths and injuries could have been avoided.

I encourage all companies to study the new code recommendations and to purge flammable gases outdoors whenever possible. I urge the NFPA to ensure that a prohibition on indoor purging and other safeguards are permanently incorporated into the National Fuel Gas Code, and I thank the NFPA leadership and members for their positive actions to promote worker safety.

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Note to reporters and editors: on June 28, 2010, the CSB made 18 additional urgent recommendations to OSHA, the NFPA, and other parties arising from the ConAgra explosion and the February 7, 2010, natural gas explosion at the Kleen Energy power plant under construction in Middletown, Connecticut. The recent code changes approved by the NFPA do not affect high-pressure pipe cleaning operations using natural gas (known as “gas blows”), which the CSB concluded are inherently unsafe and should be discontinued in favor of safer alternatives using noncombustible gases. The explosion at Kleen Energy resulted from a natural gas blow that released about 400,000 standard cubic feet of gas into a congested area outside the power generation building.

The CSB is an independent federal agency charged with investigating serious chemical accidents. The agency's board members are appointed by the president and confirmed by the Senate. CSB investigations look into all aspects of chemical accidents, including physical causes such as equipment failure as well as inadequacies in regulations, industry standards, and safety management systems.

The Board does not issue citations or fines but does make safety recommendations to plants, industry organizations, labor groups, and regulatory agencies such as OSHA and EPA. Visit our website, www.csb.gov.

For more information, contact Daniel Horowitz at (202) 261-7613 / (202) 441-6074 cell.