



U.S. CHEMICAL SAFETY AND HAZARD
INVESTIGATION BOARD

1750 Pennsylvania Ave., NW, Suite 910
Washington, DC 20006

public@csb.gov
www.csb.gov

U.S. CHEMICAL SAFETY BOARD

Impact Report

FY 2015



U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD



The U.S. Chemical Safety and Hazard Investigation Board (CSB) is an independent federal agency charged with investigating the root cause of industrial chemical incidents.



The CSB advocates for the implementation of the resulting safety recommendations to better protect workers, the public and the environment.



The goal of the CSB is to be a recognized leader in protecting people and the environment from hazardous chemicals by issuing quality reports, high-impact recommendations, videos, and other educational tools that promote safety.

This report highlights the CSB's impact and activities undertaken in fiscal year (FY) 2015 to achieve this vision.

INVESTIGATIONS

The CSB conducts incident investigations and safety studies concerning releases of hazardous chemical substances. Throughout FY 2015, investigative field work and analysis have continued on several important open accident investigations. The CSB initiated two new investigations in FY 2015: the ExxonMobil Refinery Explosion in Torrance, California, and the DuPont La Porte toxic chemical release in La Porte, Texas. The CSB anticipates closing a number of open investigations in FY 2016 that will result in significant safety recommendations to regulators, industry, and corporations including the Macondo Gulf of Mexico Blowout and the West Fertilizer Explosion and Fire.

FY 2015 COMPLETED REPORTS

Chevron Refinery Fire Final Report (Richmond, CA): The Board approved the third and final investigation report and safety recommendations from the August 6, 2012, crude unit fire that occurred at the Chevron Refinery in Richmond, California. The CSB made recommendations to the City of Richmond, Contra Costa County and the State of California to improve their process safety management (PSM) programs.

US Ink Fire (East Rutherford, NJ): The Board approved the final investigation report into a 2012 combustible dust flash fire and explosion that burned seven workers at the U.S. Ink plant in East Rutherford, New Jersey. Among other recommendations issued, the CSB reiterated a recommendation to the Occupational Safety and Health Administration (OSHA) to issue a combustible dust standard.

Safety Bulletin—Key Lessons for Preventing Incidents from Flammable Chemicals in Educational Demonstrations: Following a series of three significant incidents that resulted in injuries to children during laboratory fire demonstrations using methanol, the CSB issued a safety bulletin on the use of flammable chemicals in educational demonstrations. A key lesson of the CSB's bulletin was the need for educators to conduct a comprehensive hazard review before performing any educational demonstration.

Safety Bulletin—Key Lessons for Preventing Hydraulic Shock in Industrial Refrigeration Systems: The Board approved a safety bulletin to inform industries that utilize anhydrous ammonia in bulk refrigeration of the dangers of hydraulic shock. The bulletin followed an investigation into a 2010 anhydrous ammonia release at Millard Refrigerated Services in Theodore, Alabama. The bulletin describes the hazards of hydraulic shock and provides guidance on the use of emergency shutdown procedures to reduce the amount of ammonia released during an incident.

Horsehead Holding Company Fatal Explosion and Fire (Monaca, Pennsylvania): The CSB released a technical analysis of a July 2010 explosion and fire at the Horsehead zinc refinery in Monaca, Pennsylvania, that resulted in the deaths of two operators.

FY 2015 OPEN INVESTIGATIONS

Investigation	Location	Incident Date
Caribbean Petroleum Refining Tank Explosion and Fire*	Bayamón, PR	October 23, 2009
Macondo Blowout and Explosion	Gulf of Mexico	April 20, 2010
West Fertilizer Explosion and Fire	West, TX	April 17, 2013
Williams Olefins Plant Fire and Explosion	Geismar, LA	June 13, 2013
Freedom Industries Chemical Release	Charleston, WV	January 9, 2014
Tesoro Martinez	Martinez, CA	February 12, 2014 & March 10, 2014
DuPont LaPorte Facility Toxic Chemical Release	La Porte, TX	November 15, 2014
Exxon Mobil Refinery Explosion	Torrance, CA	February 18, 2015

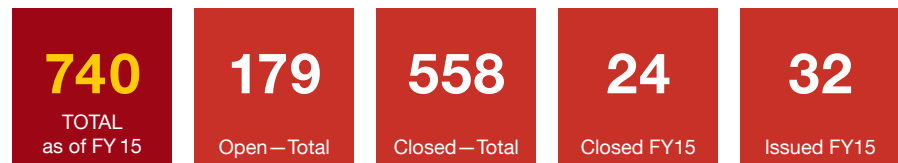
* The Board subsequently approved the investigation report in a public business meeting in October 2015 (FY 2016)

RECOMMENDATIONS

CSB investigations produce high-impact recommendations to regulatory agencies, state and local governments, corporations, industry organizations and others, aiming to improve chemical safety and environmental protection. The CSB advocates for timely implementation of these recommendations.

During FY 2015, implementation of CSB recommendations resulted in key safety improvements. For example:

The National Fire Protection Association (NFPA) revised widely used fire protection standards on ventilation systems, safe building separation distances at industrial facilities, and use of thermoplastics in plants using flammable liquids. Texas Tech University improved their chemical hygiene program and began a near-miss reporting system. These actions serve as a model for improving safety at research institutions.

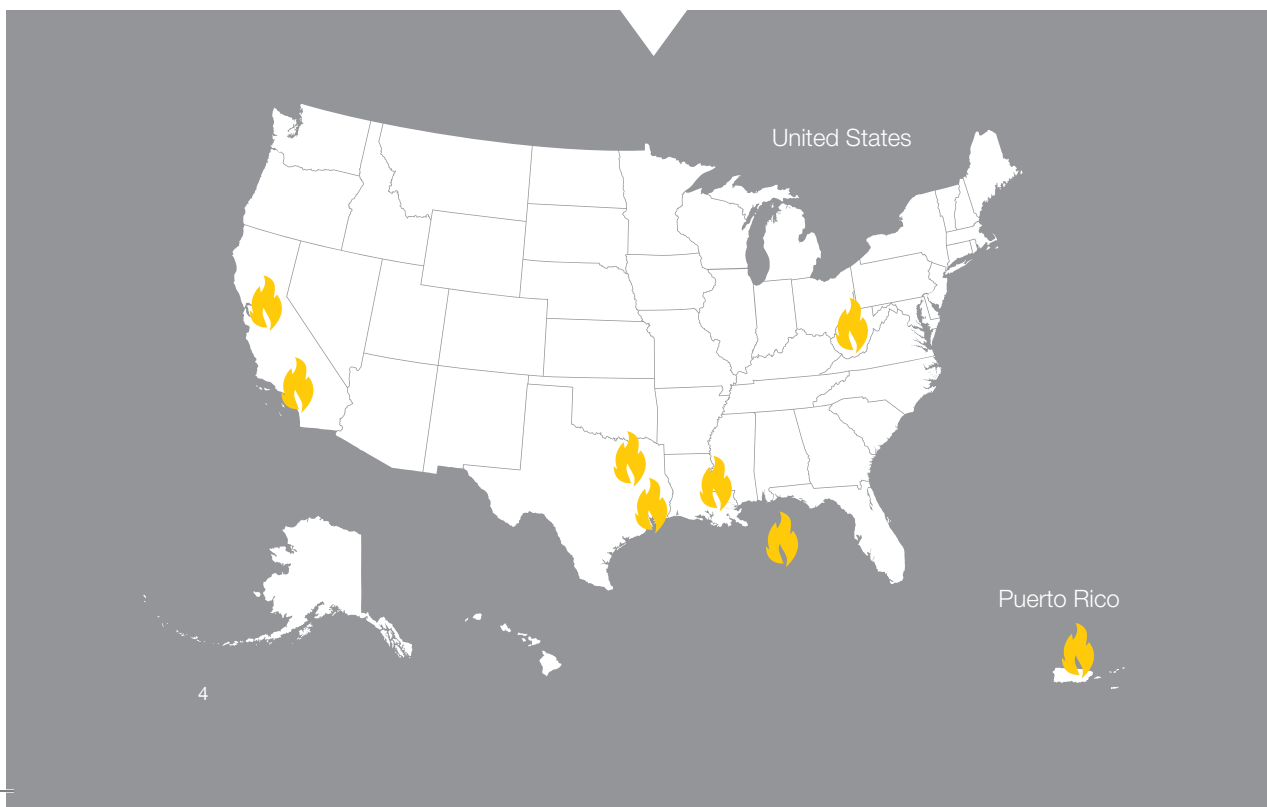


ADVOCACY AND OUTREACH INITIATIVES

During FY 2015, the CSB continued to advocate for the implementation of its safety recommendations through efforts such as: engaging with recipients and stakeholders, and presenting on safety topics at conferences, professional society and stakeholder meetings. In FY 2015, CSB Board members presented at 16 conferences, professional society or stakeholder meetings on topics including combustible dust, human factors, laboratory safety and process safety management.

MOST WANTED CHEMICAL SAFETY IMPROVEMENTS PROGRAM

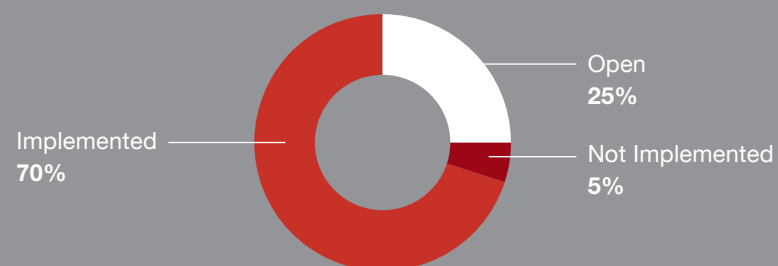
The *Most Wanted Chemical Safety Improvements Program* was created in 2013 and includes two most wanted safety issues: promulgation of a combustible dust standard and modernization of process safety management (PSM) regulations. The goal of the Most Wanted List is to pursue implementation of changes that are most likely to achieve important national-level safety improvements.



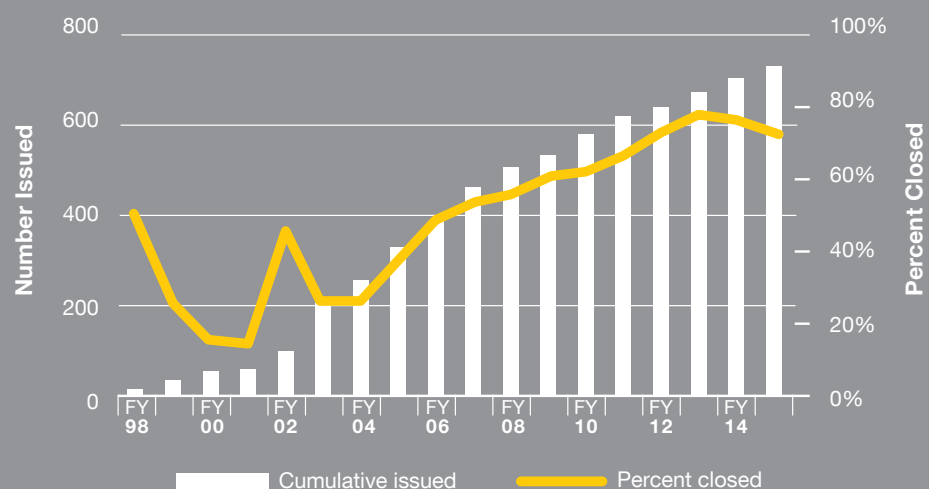
The CSB added modernizing U.S. process safety management regulations to the Most Wanted list in FY 2015. These regulations have undergone little reform since their inception in the 1990s, and more comprehensive safeguards are needed to protect workers, public health, and the environment. The Board advocated for modernizing these regulations in FY 2015 by:

- Commenting on the U.S. Environmental Protection Agency's Request for Information on potential revisions to its Risk Management Program (RMP).
- Commenting on the California Department of Industrial Relations draft regulation for PSM in refineries.
- Presenting to stakeholders and professional societies on the need for PSM reform.

Status of all Recommendations, FY 2015



Recommendations Issued and Percent Recommendations Closed



SAFETY VIDEOS

The CSB distributes computer-animated safety videos free of charge within the United States to disseminate investigative findings. The agency makes the videos available on the CSB website and on YouTube for public viewing.

In FY 2015, the CSB released six videos:

- “Shock to the System” on the hazards of hydraulic shock in industrial refrigeration systems;
- “Behind the Curve” depicting the April 2010 explosion and fire at the Tesoro refinery in Anacortes, Washington;
- A computer-generated animation of the Caribbean Petroleum incident called “Filling Blind”;
- Safety message on refinery safety for the ten-year anniversary of the BP Texas City explosion;
- Safety message on chemical facility safety 30 years after the Bhopal, India, tragedy; and
- An overview of the agency’s recommendations program.

The Television, Internet and Video Association of D.C. (TIVA-DC) recognized the CSB’s safety video program in November 2014 with three awards in the Government category for the production of educational videos. The CSB’s safety video program is also a finalist for the 2015 TIVA-DC Peer awards.

ONLINE OUTREACH

Youtube | The CSB’s safety videos have totaled over 1 million views with over 5 million minutes watched. **@USCSB:** 11,634 subscribers (as of 11/9/2015)

Twitter | **@chemsafetyboard:** 3,133 followers (as of 11/9/2015)

Facebook | **@US Chemical Safety Board:** 3,669 likes (as of 11/9/2015)

Email | Over 50,000 email users have subscribed to receive CSB news releases.

Website | **www.csb.gov** | Our website provides information on investigations, status of recommendations and information on Board activities.

FY 2015 NUMBERS

1,900
safety videos distributed

6
new safety videos

7
public meetings

16
presentations by the Board to stakeholders

32
new recommendations

24
closed recommendations

2
new investigations

2
safety bulletins issued

2
closed investigations

1
technical report released