

Refinery fires, other chemical disasters may no longer get safety investigations

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A Chevron refinery in El Segundo, Calif., burns on Oct. 3, 2025.

Allen J. Schaben/Los Angeles Times via Getty Images

When fire erupted at the Intercontinental Terminals Co. bulk liquid petroleum storage terminal, large plumes of dark smoke billowed into the clear skies over Deer Park, Texas. Despite the efforts of site staff and local firefighters, more than 70 million gallons of petroleum products burned or were otherwise released into the environment over the following three days in March 2019.

Even while the fire was still burning, investigations began looking into what had happened and what was still happening. The Environmental Protection Agency tested air and water samples to determine how much pollution was being released – both to determine cleanup efforts and to assess fines. The Occupational Safety and Health Administration reviewed what had happened, but found that with no workers injured, there was no reason to investigate further or impose fines or other penalties on the company.

A third federal agency, the Chemical Safety and Hazard Investigation Board, often known as the CSB, got to work figuring out what had gone wrong, without assigning legal or financial responsibility, but rather seeking to learn from this disaster how to prevent future accidents. It's an approach much like the National Transportation Safety Board takes toward airplane crashes, train derailments and other transportation-related tragedies: document what happened and identify every opportunity to prevent or reduce the chances of it happening again.

That deep investigative process reportedly will not happen in the wake of the October 2025 explosion and fire at a Chevron refinery in El Segundo, California, because of the federal government shutdown and lack of funding for the organization.

As scholars of chemical disasters, we believe this absence – and the potential for the board to be eliminated entirely under the proposed 2026 federal budget – raises the risk of more, and more serious, chemical disasters, not just in the U.S. but around the world.



A fire burns at Intercontinental Terminals Co. in Deer Park, Texas, in March 2019.

AP Photo/David J. Phillip

Many serious incidents

The CSB investigation of that 2019 fire that burned 15 petroleum tanks at the Intercontinental Terminals Co., near the Port of Houston, yielded key recommendations to the company, OSHA and the EPA. They included necessary updates to safety management systems, the need for flammable-gas detectors to identify leaks, and remotely operated emergency shutoff valves so workers could close tanks containing hazardous material without exposing themselves to danger. The company has addressed the first recommendation and is reportedly working on the next two.

The board also recommended to the petroleum industry that storage tanks be spaced farther apart so they would be less likely to catch each other on fire – a recommendation that is still under review.

And the Texas fire was just one of several disasters the Chemical Safety and Hazard Investigation Board investigated that year. Since its activation in 1998, the board has conducted in-depth investigations of 102 chemical disasters in the chemical and industrial sectors – an average of about four per year. And its reports are regularly used worldwide, including in France, South Korea and China.

Creation and goals of the CSB

The U.S. Chemical Safety and Hazard Investigation Board was created by Congress in a 1990 amendment to the Clean Air Act, in the wake of several high-profile chemical disasters around the world.

Those included the 1976 dioxin release in Seveso, Italy, which caused skin lesions on over 600 people and contaminated nearly 7 square miles of land; the deaths of thousands in Bhopal, India, from the 1984 release of methyl isocyanate from a Union Carbide pesticide plant; and the Chernobyl nuclear plant disaster in 1986 in what was then the Soviet Union. The goal was to prevent similar accidents from occurring on U.S. soil by investigating the causes of incidents and providing recommendations for improvement.

Specifically designed to be independent of other organizations and political influence, the CSB cannot be forced to modify its findings by other agencies, branches or political parties, ensuring its impartiality.

It has no power to issue regulations, nor any authority to impose fines or other punishments for wrongdoing. Rather, it is a fact-finding, investigative body designed to learn from past disasters and issue voluntary recommendations so chemical companies can improve their equipment and processes to prevent future tragedies. The vast majority of its recommendations are adopted by the industries affected, usually by the investigated company, though sometimes recommendations become industry standards. These recommendations can range from changes in procedure, the addition of safety devices or even overall facility design recommendations.

What does the board do?

There are several kinds of events companies must report to the federal government, including deaths and releases of particular chemicals, such as chlorine, naphthalene and vinyl chloride.

The board reviews those reports and decides on its own which to investigate. When an inquiry is opened, a group of experts who work for the board travel to the incident site to gather evidence to understand not only what happened in the big picture but a detailed view of how events unfolded.

After the investigation, the board issues a report detailing what it found and recommending specific changes to the company to reduce the risk of that sequence of events happening again. The board also delivers its information to other federal agencies, such as the EPA and OSHA, which can determine whether changes would be appropriate to federal regulations that apply to all companies in an industry.

The board's value

The board had a US\$14 million annual budget for 2025, which is a tiny part of the more than \$6 trillion the U.S. government spends each year.

The current administration's justification for eliminating the CSB is that its capabilities are duplicated by agencies such as the EPA and OSHA. But the EPA focuses specifically on environmental violations and potential threats to human life. OSHA investigates regulatory violations leading to personal injury.

In fact, the CSB has helped the EPA and OSHA evaluate and improve regulations, such as for the open burning of waste explosives, and improved methods of investigating accidental chemical releases and implementing new emergency response rules.

The CSB is the only organization that looks into improving processes to prevent future accidents instead of punishing past acts. It's the difference between investigating who robbed a bank to hold the robbers accountable and improving bank security so another robbery can't occur.

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