



MEMORANDUM

September 25, 2021

To: Subcommittee on Oversight and Investigations Members and Staff

Fr: Committee on Energy and Commerce Staff

Re: Hearing on “Protecting Communities from Industrial Accidents: Revitalizing the Chemical Safety Board”

On Wednesday, September 29, 2021, at 10:30 a.m. (EDT), in the John D. Dingell Room, 2123 of the Rayburn House Office Building, and via Cisco WebEx online video conferencing, the Subcommittee on Oversight and Investigations will hold a hearing entitled, “Protecting Communities from Industrial Accidents: Revitalizing the Chemical Safety Board.” The hearing will examine the ongoing mission, governance, staffing, and other challenges at the Chemical Safety and Hazard Investigations Board.

I. BACKGROUND ON THE CSB

The Chemical Safety and Hazards Investigations Board, commonly referred to as the Chemical Safety Board (CSB), is an independent federal agency responsible for investigating industrial chemical accidents.¹ CSB was authorized by the Clean Air Act Amendments of 1990,² but only funded in 1998 after a series of industrial accidents led to a renewed impetus to secure appropriations for the organization.³

CSB’s mission is to “drive chemical safety change through independent investigation to protect people and the environment.”⁴ More specifically, CSB investigates and determines the root causes of major industrial incidents involving chemical substances, including petrochemicals, that result in serious injury, loss of life, or substantial property damage. Once the root causes are determined, CSB makes formal recommendations so that other facilities can

¹ U.S. Chemical Safety and Hazard Investigation Board, *Fact Sheet* (www.csb.gov/assets/1/6/csb_fact_sheet.pdf) (accessed Sept. 20, 2021).

² 42 U.S.C. § 7412(r)(6).

³ House Committee on Oversight and Government Reform, Testimony of Rick Engler, Member, U.S. Chemical Safety Board, *Hearing: Rebuilding the Chemical Safety Board: Finding a Solution to the CSB’s Governance and Management Challenges*, 114th Cong. (Mar. 4, 2015).

⁴ U.S. Chemical Safety and Hazard Investigation Board, *Mission* (www.csb.gov/about-the-csb/mission/) (accessed Sept. 20, 2021).

learn from these industrial accidents and make changes to prevent future loss of life or threats to the community.⁵

CSB's mission is becoming more complex as climate change and extreme weather events increasingly threaten chemical facilities, including through heightened flood risk due to their proximity to waterways.⁶ For instance, during the recent Hurricane Ida, several chemical leaks occurred in Louisiana's industrial corridor,⁷ and EPA is assessing damage at a number of industrial sites in New York and New Jersey.⁸

II. CSB INVESTIGATIONS AND SAFETY RECOMMENDATIONS

Since its inception, CSB has conducted dozens of investigations into devastating industrial accidents, including:

- The 2005 BP America Refinery Explosion in Texas City, Texas, which killed 15 workers and injured 180 others during the restarting of a hydrocarbon isomerization unit;⁹
- The 2008 Bayer CropScience Pesticide Waste Tank Explosion in Charleston, West Virginia, which killed two workers, injured two others, and nearly caused a release of Methyl Isocyanate (MIC): the same chemical that killed 3,000 people in Bhopal, India, in 1984;¹⁰
- The 2012 BP Deepwater Horizon / Macondo Well Blowout, which killed 11 workers, seriously injured 17 others, and caused approximately four million barrels of oil to spill into the Gulf of Mexico over an 87-day period;¹¹
- The 2017 Arkema Chemical Plant Fire in Crosby, Texas, which forced an evacuation of

⁵ U.S. Chemical Safety and Hazard Investigation Board, Mission (www.csb.gov/about-the-csb/mission/) (accessed Sept. 20, 2021); 42 U.S.C. § 7412(r)(6)(C).

⁶ World Health Organization, *Chemical Releases Associated With Floods* (WHO/CED/PHE/EPE/18.02) (accessed Sept. 20, 2021).

⁷ *At least 350 oil and chemical spills reported in Louisiana waters after Hurricane Ida*, Nola.com (Sept. 6, 2021).

⁸ U.S. Environmental Protection Agency, *EPA Responds to Damage from Storm Remnants of Hurricane Ida in New Jersey and New York* (Sept. 2, 2021) (press release).

⁹ U.S. Chemical Safety and Hazard Investigation Board, BP America Refinery Explosion (Mar. 23, 2020) (www.csb.gov/bp-america-refinery-explosion/).

¹⁰ U.S. Chemical Safety and Hazard Investigation Board, Bayer CropScience Pesticide Waste Tank Explosion (Jan. 20, 2011) (www.csb.gov/bayer-cropscience-pesticide-waste-tank-explosion/).

¹¹ U.S. Chemical Safety and Hazard Investigation Board, Macondo Blowout and Explosion (Apr. 20, 2016) (www.csb.gov/macondo-blowout-and-explosion/).

the community within a one-and-a-half-mile radius after floodwaters from Hurricane Harvey cut the power to refrigerated storage units that were housing hazardous chemicals;¹² and

- The 2019 Philadelphia Energy Solutions (PES) Refinery Fire and Explosions, which released a cloud of potentially deadly hydrofluoric acid and, due to the quick actions of workers that significantly limited the amount of hydrofluoric acid released, narrowly avoided placing the surrounding communities at considerable risk.¹³

As part of an investigation, CSB investigators typically deploy to incident sites to collect physical evidence, including chemical samples and equipment, and conduct on-site interviews of witnesses.¹⁴ A full investigation involves reviewing evidence, studying relevant regulations and industry practice, and consulting with Board members and other government authorities and stakeholders, after which CSB staff submit their report to the Board for approval.¹⁵

Within its reports, CSB includes safety recommendations for subject companies, trade associations, and other stakeholders, such as the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA).¹⁶ CSB then coordinates with those agencies and entities on implementation and tracks the recommendations until their completion.¹⁷ Since 1998, CSB has been deployed to over 130 chemical incidents and issued 850 recommendations to companies operating in a variety of industries, over 700 of which have been implemented, leading to safer plants, workers, and communities.¹⁸

In addition to preparing board reports, CSB also publishes safety videos on its findings and recommendations to promote public awareness of incidents and help facilitate accident

¹² U.S. Chemical Safety and Hazard Investigation Board, Arkema Inc. Chemical Plant Fire (May 24, 2018) (www.csb.gov/arkema-inc-chemical-plant-fire/).

¹³ U.S. Chemical Safety and Hazard Investigation Board, Philadelphia Energy Solutions (PES) Refinery Fire and Explosions (June 21, 2019) (<https://www.csb.gov/philadelphia-energy-solutions-pes-refinery-fire-and-explosions/>).

¹⁴ U.S. Chemical Safety and Hazard Investigation Board, About the CSB (www.csb.gov/about-the-csb) (accessed Sept. 20, 2021).

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ U.S. Chemical Safety and Hazard Investigation Board, History and Statistics board (www.csb.gov/about-the-csb/history/) (accessed Sept. 20, 2021); U.S. Chemical Safety and Hazard Investigation Board, About the CSB (www.csb.gov/about-the-csb) (accessed Sept. 20, 2021); U.S. Chemical Safety and Hazard Investigation Board, Home Page (<https://www.csb.gov/>) (accessed Sept. 20, 2021).

prevention.¹⁹ CSB safety videos are widely used for training, hazard analysis, and plant engineering in and among several industries.²⁰ For example, CSB recently released an updated safety video on the 15th anniversary of the 2005 BP Texas City Explosion, which will be used for a new interactive safety training application focused on OSHA's Process Safety Management (PSM) regulation.²¹

III. CSB EXPERTISE AND BOARD STRUCTURE

CSB is led by a five-member board of experts who are appointed individually by the President and confirmed by the Senate.²² Currently, there are four vacancies on the Board. The sole active Board member, Katherine A. Lemos, Ph.D., was confirmed in March 2020 and has served as Chairman and Chief Executive Officer of CSB since April 2020.²³ In April 2021, President Biden nominated three individuals to the Chemical Safety Board: Stephen A. Owens, Jennifer Beth Sass, Ph.D., and Sylvia E. Johnson, Ph.D.,²⁴ all of whom are currently proceeding through the confirmation process.²⁵

When fully staffed, the CSB board and staff represent expertise across several fields, such as chemical and mechanical engineering, industrial safety, accident reconstruction, and toxicology.²⁶ CSB leverages this diverse expertise to examine all potential root causes leading to chemical incidents, which can range from deficiencies in safety management systems to equipment failures, human errors, or unforeseen chemical reactions, among others.²⁷

¹⁹ U.S. Chemical Safety and Hazard Investigation Board, *Safety Videos* (www.csb.gov/videos/) (accessed Sept. 20, 2021).

²⁰ American Institute of Chemical Engineers, *CSB safety videos: A new and effective communication tool for accident investigation findings* (July 24, 2007).

²¹ U.S. Chemical Safety and Hazard Investigation Board, *BP America Refinery Explosion* (Mar. 23, 2020) (www.csb.gov/bp-america-refinery-explosion/).

²² U.S. Chemical Safety and Hazard Investigation Board, *Fact Sheet* (www.csb.gov/assets/1/6/csb_fact_sheet.pdf) (accessed Sept. 20, 2021).

²³ U.S. Chemical Safety and Hazard Investigation Board, *Chairperson Dr. Lemos* (www.csb.gov/about-us/board-memberschairperson-dr-lemos-/) (accessed Sept. 20, 2021).

²⁴ The White House, *President Biden Announces 16 Key Administration Nominations* (Apr. 28, 2021) (www.whitehouse.gov/briefing-room/statements-releases/2021/04/28/president-biden-announces-16-key-administration-nominations/).

²⁵ The nominees received a hearing in the Senate Environment and Public Works (EPW) Committee in July 2021, and are awaiting a vote in the Senate EPW Committee and the full Senate before they can begin their term.

²⁶ U.S. Chemical Safety and Hazard Investigation Board, *About the CSB* (www.csb.gov/about-the-csb) (accessed Sept. 20, 2021); 42 U.S.C. § 7412(r)(6)(C).

²⁷ U.S. Chemical Safety and Hazard Investigation Board, *About the CSB* (www.csb.gov/about-the-csb) (accessed Sept. 20, 2021).

IV. PERSISTENT MANAGEMENT, STAFFING, AND GOVERNANCE ISSUES HAVE IMPAIRED THE MISSION OF THE CSB

CSB has faced consistent challenges at both the board and staff levels since its inception in 1998.²⁸ Board member vacancies, persistent understaffing, low staff morale, and now the coronavirus disease of 2019 (COVID-19) pandemic have contributed to underproductivity at CSB. As a result, CSB currently has a backlog of 18 open investigations, including one from 2016 and two from 2017.²⁹ CSB has completed seven investigations since 2019: four were completed in 2019, none in 2020, and three so far in 2021. Correspondingly, the number of safety recommendations issued has also dwindled in recent years.³⁰

At the staff level, new hiring has not kept up with the rate of attrition. While the organization's \$12 million annual budget supports a staff of approximately 40 full-time employees, previously including up to 20 investigators,³¹ many of the investigator positions have been unfilled for years.³²

At the board level, CSB's ability to accomplish its mission has been impaired by board vacancies and, at times, considerable discord.³³ There have also been reported inconsistencies in

²⁸ Government Accountability Office, *Chemical Safety Board Improved Policies and Additional Oversight Are Needed* (July 2000) (GAO/RCED-00-192); Government Accountability Office, *Chemical Safety Board: Improvements in Management and Oversight are Needed* (Aug. 22, 2008) (GAO-08-864R).

²⁹ U.S. Chemical Safety and Hazard Investigation Board, *Current Investigations* (www.csb.gov/investigations/current-investigations/?Type=1&pg=3) (accessed Sept. 20, 2021).

³⁰ U.S. Chemical Safety and Hazard Investigations Board, *Recommendations Search* (www.csb.gov/recommendations/?F_ReportIssueDateLBound=01/01/2020&F_ReportIssueDateUBound=12/31/2021&F_InvestigationStatus=1134,1133,1135) (accessed Sept. 20, 2021); Public Employees for Environmental Responsibility, *Federal Industrial Safety Agency Withering Away* (Dec. 17, 2020).

³¹ U.S. Chemical Safety and Hazard Investigation Board, *Fact Sheet* (www.csb.gov/assets/1/6/csb_fact_sheet.pdf) (accessed Sept. 20, 2021); U.S. Chemical Safety and Hazard Investigation Board, *Budget Justification Fiscal Year 2021* (www.csb.gov/assets/1/17/fy_2021_budget_request.pdf?16549) (accessed Sept. 20, 2021).

³² *US Chemical Safety Board remains short-staffed*, *Chemical & Engineering News* (May 4, 2020).

³³ U.S. Environmental Protection Agency, Office of Inspector General, *FY 2020 U.S. Chemical Safety and Hazard Investigation Board Management Challenges* (Mar. 2020) (20-N-0218); *see, e.g., Head of U.S. Chemical Safety Board Resigns*, *Scientific American* (Mar. 30, 2015).

board members' practices due to lack of clarity with regard to their responsibilities.³⁴ EPA's Office of Inspector General (EPA-OIG), which also serves as the OIG for the CSB, has documented its concerns regarding board vacancies and board member responsibilities over the past several years in its annual Management Challenges report.³⁵

The lack of clarity in board member responsibilities is accompanied by a similar lack of statutory clarity with regard to the organizational structure of the board, both of which have led to various controversies within the board over the years.³⁶ Unlike the National Transportation Safety Board (NTSB), after which it was originally modeled,³⁷ CSB's statute provides very limited organizational structure for the board. For example, where NTSB's statute sets out a clearly established quorum and specific instruction regarding hiring authority among board members, CSB's statute is silent on these issues.³⁸

In April 2021, CSB sought to address some of its governance challenges through a revised board order (Board Order 28), which clarified board member responsibilities and authorized delegation of certain administrative responsibilities directly to staff members.³⁹ However, revised Board Order 28 has created concerns about the limits placed on non-Chairperson board members' oversight of certain administrative functions, such as review of the budget, and potential conflicts of interest created by the delegation of authority to staff.⁴⁰

V. PRIOR COMMITTEE ACTIVITY

The Committee on Energy and Commerce has conducted bipartisan oversight of CSB over the last decade, including sending a bipartisan letter on long-standing management

³⁴ U.S. Environmental Protection Agency, Office of Inspector General, *FY 2020 U.S. Chemical Safety and Hazard Investigation Board Management Challenges* (Mar. 2020) (20-N-0218).

³⁵ U.S. Environmental Protection Agency, Office of Inspector General, *Top Management Challenges for EPA and CSB* (www.epa.gov/office-inspector-general/top-management-challenges-epa-and-csb) (accessed Sept. 20, 2021).

³⁶ *US Chemical Safety Board Controversy Continues*, Chemistry World (June 28, 2015); U.S. Environmental Protection Agency, Office of Inspector General, *FY 2018 U.S. Chemical Safety and Hazard Investigation Board Management Challenges* (June 2018) (18-N-0218).

³⁷ U.S. Government Accountability Office, *Chemical Safety Board: Improvements in Management and Oversight are Needed* (Aug. 22, 2008) (GAO-08-864R).

³⁸ 49 U.S.C. § 1111; 42 U.S.C. § 7412(r)(6).

³⁹ U.S. Chemical Safety and Hazard Investigation Board, *Board Order 28 Board Member Roles and Responsibilities* (Apr. 1, 2021) (www.csb.gov/assets/record/b0_028docx.pdf).

⁴⁰ Letter from 22 labor, environmental, community, and scientific organizations, to Katherine A. Lemos, Ph.D., Chairperson and CEO, U.S. Chemical Safety and Hazard Investigation (July 8, 2021) (www.nationalcosh.org/sites/default/files/2021-07-08_CSBI_Letter.pdf).

challenges in 2015.⁴¹ The Committee sent another bipartisan letter to CSB in May 2021 regarding its concerns about persistent and emergent staff and board-level challenges that undermine the agency's ability to conduct and complete investigations.⁴² That letter, to which CSB replied in June 2021, requested information on CSB's progress in addressing these issues.⁴³

IV. WITNESS

Katherine A. Lemos, Ph. D.

Chairperson and Chief Executive Officer
U.S. Chemical Safety and Hazard Investigation Board

⁴¹ Letter from Rep. Fred Upton, Chairman, Rep. Frank Pallone, Jr., Ranking Member, Rep. Tim Murphy, Chairman, Subcommittee on Oversight and Investigations, Rep. Diana DeGette, Ranking Member, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, to Mark Griffon, Board Member, Manual Ehrlich, Board Member, Rick Engler, Board Member, U.S. Chemical Safety Board (Mar. 27, 2015).

⁴² Letter from Rep. Frank Pallone, Jr., Chairman, Rep. Cathy McMorris Rodgers, Ranking Member, Rep. Diana DeGette, Chair, Subcommittee on Oversight and Investigations, Rep. H. Morgan Griffith, Ranking Member, Subcommittee on Oversight and Investigations, Rep. Paul D. Tonko, Chairman, Subcommittee on Environment and Climate Change, Rep. David B. McKinley, Ranking Member, Subcommittee on Environment and Climate Change, to Katherine A. Lemos, Ph.D., Chairman and CEO, U.S. Chemical Safety and Hazard Investigation Board (May 20, 2021).

⁴³ Letter from Rep. Frank Pallone, Jr., Chairman, Rep. Cathy McMorris Rodgers, Ranking Member, Rep. Diana DeGette, Chair, Subcommittee on Oversight and Investigations, Rep. H. Morgan Griffith, Ranking Member, Subcommittee on Oversight and Investigations, Rep. Paul D. Tonko, Chairman, Subcommittee on Environment and Climate Change, Rep. David B. McKinley, Ranking Member, Subcommittee on Environment and Climate Change, to Katherine A. Lemos, Ph.D., Chairman and CEO, U.S. Chemical Safety and Hazard Investigation Board (May 20, 2021).; Letter from Katherine A. Lemos, Ph.D., Chairman and CEO, U.S. Chemical Safety and Hazard Investigation Board, to Rep. Frank Pallone, Jr., Rep. Cathy McMorris Rodgers, Ranking Member, Rep. Diana DeGette, Chair, Subcommittee on Oversight and Investigations, Rep. H. Morgan Griffith, Ranking Member, Subcommittee on Oversight and Investigations, Rep. Paul D. Tonko, Chairman, Subcommittee on Environment and Climate Change, Rep. David B. McKinley, Ranking Member, Subcommittee on Environment and Climate Change (June 20, 2021).