



U.S. Chemical Safety and Hazard Investigation Board

BUDGET JUSTIFICATION

Fiscal Year 2009

Budget Justification for Fiscal Year 2009
U.S. Chemical Safety and Hazard Investigation Board
February 4, 2008

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Summary

For fiscal year (FY) 2009, the Chemical Safety and Hazard Investigation Board (CSB) requests a budget of \$10.6 million,¹ an increase of \$1,337,000 above the FY 2008 level of \$9.263 million.² The majority of the increase, \$920,000, supports personnel increases, including fully funding positions that are budgeted for part of FY 2008. The increase includes funding for three investigative positions that were recommended by the House for FY 2008 but not funded in the conference report. The CSB also requests funds for a new knowledge manager position to coordinate the handling of extensive electronic records and address information security and privacy requirements. The remainder of the personnel increase funds an anticipated January 2009 cost of living increase and other adjustments to the agency's payroll and expenses. In addition to personnel increases, the FY 2009 request also includes \$250,000 to establish a funding line for the CSB's successful safety video program. The remainder of the FY 2009 increase will fund smaller fixed cost increases and an unavoidable fixed cost increase of \$123,000 in fees from the Bureau of the Public Debt, which provides the accounting, procurement, and travel services to the CSB by interagency agreement.

¹ Under Section 112(r) of the Clean Air Act Amendments of 1990, the CSB prepares its budget request and justification independently from the Office of Management and Budget; as a result, the requested amounts differ from those in the President's budget

² Public Law 110-161

Proposed New Initiatives for FY 2009

The CSB continues to fulfill its mission to prevent chemical accidents by deploying to major accidents, presenting testimony in several congressional hearings, convening public meetings throughout the country, and effecting positive change in federal and local regulations, standards, and chemical industry guidelines.

The Board's investigation of the fatal explosion at the BP refinery in Texas City, Texas, in 2005 has continued to have a global impact since it was issued in March 2007. The agency's outreach effort for the BP report and recommendations will continue through FY 2009 with the development of a major safety video on the subject. The CSB report and the report of the independent Baker panel, which was the direct result of a CSB urgent recommendation, are being read and studied by companies and corporate boards around the world.

To continue these highly influential chemical safety investigations, the Board requests funds to expand the Office of Investigations by hiring three additional incident investigators in fiscal year 2009. The Board also seeks funds for a new knowledge manager position, for safety videos production, and for other small agency costs.

The CSB's independent budget request to Congress for 2008 likewise included the three new investigator positions. Although House-passed appropriations bill and committee report included supportive language and funding³ for this request, the final budget for the agency contained in the omnibus bill did not fund the full cost of the positions.

Expanding the Office of Investigations

During calendar year 2007, the agency received notification of 937 chemical incidents from sources including the National Response Center, media reports, and other federal agencies. Thirty-one out of the 937 reported incidents were serious or even fatal events that were considered "deployable" – or likely warranting the commitment of CSB investigators if available. However, due to personnel and resource limitations, the CSB was able to send investigators to a total of just eight sites.⁴

³ The overall funding in the initial House bill was \$9.5 million, and made no allowance for inflation or fixed cost increases. Ultimately, the FY 2008 appropriation bill that was enacted was for \$9.26 million, just \$150,000 more than FY 2007 and not sufficient to recruit the three new investigators.

⁴ A detailed report on the agency's incident screening system and data was provided to Congress and OMB in February 2006.

Incident Summary
Calendar Year 2007

Score	Notifications	Deployable	Actual Deployments	Actual Investigations
Low	895	15 ⁵	2	1
Low/Medium	29	6	0	0
Medium	11	8	4	3
Medium High	2	2	2	1
High	0	0	0	0
Totals	937	31	8	5⁶

Increasing the number of investigative staff will allow the CSB to conduct root-cause investigations of a greater proportion of serious chemical accidents that may have major workplace or community impacts. The shortage of investigators was noted last year in House Report 110-187:

The Committee has provided \$361,000 for salaries and related costs of three new investigative positions, not requested by the President. According to testimony received by the Committee, the Board is unable to investigate more than half of the accidents scoring high enough to warrant the Board's attention. The Committee believes that it is a wise use of funds to provide these additional investigators.

However, the FY 2008 budget, as enacted, did not include most of the funding for these positions.

The current shortage of investigative staff results in hardships such as excessive overtime requirements, deferred training and leave, and delayed publication of final reports since the same investigative team must work on several investigations at one time. The shortage also results in extensive time away from family during deployments and onsite activities, which can cause hardships in home life. Therefore, hiring more investigators will allow the agency to more rapidly deploy available investigators to accident sites, re-energize investigators' commitment to the mission of the agency through new training opportunities, produce timely reports, permit time for investigators to utilize family-friendly policies, and enhance employee retention.

CSB investigations are unique in their depth, thoroughness, and national importance based on the impact of the recommendations and outreach. Each deployment presents the opportunity to investigate a chemical accident and produce agency materials to prevent future accidents.

⁵ Although 13 deployable incidents ranked low on the screening scale, the incidents still appeared to be serious after careful evaluation.

⁶ The CSB discontinued its investigations into the July 2007 fire and explosions at Southwest Industrial Gases Inc. in Dallas, Texas, and the August 2007 trailer fire at Hughes Christensen in The Woodlands, Texas. An investigation being conducted by the National Transportation Safety Board (NTSB) of these incidents will deal with all aspects of trailer design and operating procedures. In addition, the two field deployments to fires at Barton Solvents facilities in Kansas and Iowa are being consolidated into a single CSB investigation report with recommendations.

However, continually having to deploy investigators who are currently completing work on existing investigations causes serious delays in project completion. These delays hinder the development of new safety recommendations and the dissemination of lessons learned. Due in large part to staffing limitations, the CSB did not deploy investigators to these 23 significant chemical accidents last year:

January 3, 2007, Chemical Exposure: One employee died after inhaling hydrogen fluoride gas while working in the chemical department of a manufacturing facility in Port Lavaca, Texas.

January 8, 2007, Power Plant Explosion: An explosion during a truck delivery of hydrogen to a power plant in Beverly, Ohio, killed a worker.

February 7, 2007, Chemical Explosions and Fires: A series of chemical explosions and fires occurred when a 55-gallon drum of mineral spirits exploded in Kansas City, Missouri. The city issued a mandatory evacuation order for everyone within a one-mile radius of the chemical plant.

March 8, 2007, Chemical Explosion: An explosion at a rubber manufacturing warehouse killed a man and caused considerable facility damage in Houston, Texas.

May 13, 2007, Oxygen-Deficient Atmosphere: One worker died while cleaning a tank at a chemical manufacturing facility in Taylors, South Carolina.

June 27, 2007, Chemical Exposure: One employee later died and another was injured after being exposed to titanium tetrachloride at a pigment plant in Westlake, Louisiana. Members of the surrounding community were asked to shelter in place.

July 26, 2007, Propellant System Explosion: Three workers were killed and several seriously injured when an explosion occurred during the testing of a propellant system for a space tourism vehicle in Mojave, California.

August 21, 2007, Welding Explosion: One worker was fatally injured while welding on a stainless steel transfer tank when it exploded at a chemical manufacturing facility in Augusta, Georgia.

September 4, 2007, Ammonia Release: An ammonia release at a food production facility in Waterloo, Iowa, caused one death, burned one worker severely, and hospitalized five additional workers.

October 7, 2007, Tanker Explosion: The driver of a delivery truck carrying 8,000 gallons of propane was killed in Tacoma, Washington, when a tanker hose leaked and vapors were ignited by nearby sparks. The subsequent fire led to a massive explosion of the tanker.

October 7, 2007, Chemical Release: Thirty-five people were hospitalized when a rupture in the carbon dioxide distribution system at a food manufacturing facility led to an explosion and release of carbon dioxide and ammonia in Mayaguez, Puerto Rico. Approximately 2,000 people were evacuated.

October 8, 2007, Methanol Fire: A Huntsville, Alabama, college experienced a methanol fire during a science lab experiment demonstration, injuring three.

October 15, 2007, Ammonia Release: After a tank was filled, 1700 gallons of anhydrous ammonia leaked from a truck hose at an agricultural plant in Athena, Washington, resulting in a community evacuation.

October 17, 2007, Hydrocracker Explosion: A piping malfunction on a hydrocracker unit at an oil refinery caused an explosion in Billings, Montana. The hydrocracker is used to remove sulfur from distillate in order to produce diesel fuel.

October 22, 2007, Hydrogen Sulfide Release: Eight injuries resulted from the release of hydrogen sulfide during a vacuum truck operation at a Westlake, Louisiana, oil refinery.

November 1, 2007, Hydrogen Sulfide Exposure: Four fatalities resulted from the inhalation of hydrogen sulfide at a landfill in Superior, Wisconsin.

November 2, 2007, Dust Explosion: In Baltimore, Maryland, a dust explosion and subsequent fire at a landmark sugar refinery in the Inner Harbor burned one worker and required the evacuation of approximately 175 others.

November 5, 2007, Flash Fire and Explosion: Three employees at a chemical manufacturing facility in Anniston, Alabama, were injured after a flash fire and explosion occurred in a production unit for industrial heating fluid.

November 8, 2007, Refinery Explosion and Fire: A desulfurization unit fire at a Port Arthur, Texas, refinery was caused by an ignition in the furnace. Because of the explosion and fire, the refinery was operating at approximately 60 percent of capacity, or 165,000 barrels of crude processing compared with normal daily capacity of 265,000 barrels.

November 9, 2007, Chemical Explosion: A teenage worker was killed when chemicals ignited inside a storage area at a car rental facility in Lawton, Oklahoma.

November 15, 2007, Vapor Explosion: An explosion injured five refinery employees when vapors from a raw natural gas pipeline ignited during a welding operation at a facility in LaGloria, Texas.

November 29, 2007, Aluminum Facility Explosion: One worker was fatally injured and six others were burned, some severely, in an explosion at a scrap aluminum smelter in Manchester, Georgia.

December 1, 2007, Tank Fire: A fuel oil tank fire resulted in the death of a refinery operator in St. Paul, Minnesota.

Although 31 chemical accidents likely warranted deployment of investigators, the agency's current investigative staff of 17 is barely sufficient to form three accident investigation teams, capable of deploying to only approximately 6-8 accidents each year. The Board simply has too few investigators and too few teams to conduct most of the work envisioned under its statutory authorization.⁷ In addition, the long-term shortage of investigators has potentially serious impacts resulting in fatigue, burnout, accumulation of large leave balances, and deferral of necessary training among CSB staff.

A fourth investigative team during FY 2009 will enable the CSB to deploy and conduct at least two additional accident investigations each year to promote the principles of chemical safety through lessons learned and recommendations. Additionally, the investigation process can be even more thorough in determining all accident causes, as set forth in the CSB's statutory mission.

Without a fourth investigative team, it is inevitable that there will continue to be serious accidents – many causing fatalities or life-threatening injuries – for which no public, root-cause investigations will occur. The lack of public investigations represents a significant lost opportunity for developing new findings and recommendations that could save lives in the future.

The Board has contributed to and supported the development of a new National Incident Management System (NIMS) element for Intelligence and Investigative functions and has a requirement for 10 Board and investigatory personnel to obtain SECRET level security clearances. The CSB is seeking funding support (\$3,800 - \$4,000 per employee) to provide necessary personnel security background investigations. There will also be a minimal fee of up to \$500 per employee paid to a third party to hold and manage CSB personnel security clearances. This total cost of approximately \$44,000 will allow the CSB to ensure properly cleared personnel are available to effectively engage in maximum information exchanges. Otherwise, under certain circumstances involving access to classified information, CSB personnel will be barred from discussions.

Expanding Outreach Efforts

Under the CSB Strategic Plan for FY 2007-2012, the agency established a new strategic goal for the broad dissemination of its findings, recommendations, and lessons learned among a multitude of stakeholders. The Board recognizes that a potent tool for achieving the agency's mission is

⁷ A 1989 version of the legislation creating the CSB authorized \$12 million in annual funding for the Board, equivalent to about \$20 million in today's dollars.

more widespread awareness of the causes of chemical accidents and the measures that can prevent them. The agency's vision for outreach is that one day, the CSB's findings and recommendations will be able to reach the majority of all companies, agencies, and other organizations operating with hazardous chemicals so that they all can benefit.

In late 2005, we began complementing our lengthy written reports with short, computer-animated safety videos. These videos can be viewed or downloaded over the Internet or obtained free of charge by filling out a web-based request form. The videos are also provided at speaking engagements of board members and staff, and through file sharing sites like YouTube and Apple iTunes.

The FY 2009 budget request seeks an increase of \$250,000 to formalize the funding for production of approximately seven short safety videos based on CSB investigations. As noted in the FY 2008 House Report 110-187:

The Committee agrees that the availability of videos will facilitate improvements in training, engineering and process design and help to prevent multiple tragic and costly workplace accidents around the country.

However, the FY 2008 budget, as enacted, did not include any funding specifically for the video program.

The response to the video program has been remarkable. For each person who accesses one of the CSB's written reports, roughly a hundred people watch the videos and use them for improved training, engineering, and process design. Since the program was launched in December 2005, the safety videos have been viewed almost a million times over the Internet, and the CSB has distributed more than 40,000 DVD copies to large and small companies, labor unions, and trade organizations.

The agency has received DVD requests from 40 companies on the 2007 Fortune 100 list – including food, automotive, insurance, and electronics giants as well as all the nation's largest oil and chemical companies. The CSB has received video requests from 47 of the top 50 U.S. chemical companies as ranked by *Chemical and Engineering News*, including all but one of the 17 chemical companies listed on the Fortune 500. Thousands of fire chiefs, marshals, and first responders are also using the videos for training to protect themselves from hazardous material accidents.

Companies that receive the safety videos, their employees, and the communities where they operate share a strong interest in avoiding major chemical accidents that cost lives, tarnish reputations, destroy production capacity, and often result in expensive litigation. But many companies, particularly smaller businesses, are not aware of all high-consequence, low-probability risks they face in operating their facilities, characteristic of the accidents the CSB investigates.

For example, major industrial dust explosions are rare events but when they occur, they can cause multiple fatalities and destroy or damage large facilities. The culprit is often a thin layer of

accumulated combustible powder, such as a fine resin dust, in concealed or hard-to-reach places. A minor event can then dislodge and ignite the accumulated dust, causing a disastrous explosion.

This hazard was responsible for devastating explosions in North Carolina and Kentucky in 2003 that cost 13 lives and caused tens of millions in property damage. In both cases, the companies were not fully aware of the catastrophic nature of the combustible dust hazard. If they had been, they would likely have taken relatively inexpensive control and housekeeping measures before the tragedies occurred.

While outreach is a shared responsibility among many federal agencies involved in chemical safety, the CSB has a unique body of knowledge and insight gained from its approximately 50 detailed accident investigations and safety studies. The agency's experience over the past several years is that modest and achievable outreach campaigns can greatly increase the dissemination of its reports, findings, and recommended safety practices.

At costs that are a fraction of those expended on the investigations themselves, the agency can effectively disseminate its safety information to thousands of facilities and millions of individuals in locations all over the world. The CSB's outreach programs have reached not only the traditional audiences in the oil and chemical industries but also hospitals, national parks, nuclear power plants, schools and universities, fire departments, and many other organizations. Perhaps most importantly, outreach efforts provide communities around the country with essential information they need to promote improved safety at chemical facilities in their midst.

The CSB funded the initial group of experimental videos by reallocating funds from its existing public affairs program, temporarily decreasing the number of community public meetings, and reprogramming unspent compensation from vacant board seats and other sources. Since the videos have been shown to be the most popular and widely used CSB products by far, the Board proposes establishing an official safety video production funding line in FY 2009. The budgeted cost of each video, including computer animation, production, and editing, is approximately \$35,000.

Knowledge Manager

As the CSB approaches a decade in existence, it houses a substantial amount of information including investigation and recommendation records, correspondence, staff experience, and incident data. Recently, most investigative records have been scanned and managed electronically using a commercial software package. However, there is no central manager for this program or any formal set of procedures for its use. The CSB therefore seeks funding for one full-time knowledge manager position, at a cost of \$98,000.

With each passing year, hundreds of thousands of pages of new investigative information flow into the agency. In the BP investigation alone, millions of pages of documents were provided to the agency by BP and other parties. The management of such vast quantities of information is beyond the unassisted skills of the agency's approximately 40 staff.

Knowledge management can have many benefits, including better generation, dissemination, and accessibility of information; developing better shared understanding of existing information; and filtering shared understandings into degrees of potential value. A knowledge manager, in addition to facilitating more organized electronic recordkeeping, will assist the agency in making electronic discovery requests to various parties in an investigation, which is an increasingly common and necessary investigative tool. In addition, the knowledge manager can help ensure compliance with information security and privacy requirements of the Federal Information Security Management Act (FISMA). The CSB also faces an ever growing volume of Freedom of Information Act (FOIA) requests for its investigative information. Better organization of CSB investigative records will improve the speed and efficiency of the FOIA process.

Finally, the knowledge manager will also be positioned to mine the CSB's existing reports and documents for common themes or issues, to which the agency should draw public or stakeholder attention.

Fixed Cost Increases

Since FY 2000, the CSB has obtained accounting, procurement, and travel services under an interagency agreement with the Bureau of the Public Debt (BPD) of the Treasury Department, and this agreement maintains a critical continuity in operations that the CSB depends upon. Late in FY 2007, the BPD advised the Board and other agencies that it will be significantly increasing its pricing in future years. According to BPD officials, the increases are due to accounting system changes that will directly assign shared costs to customers. In addition, the BPD has incurred higher costs to meet mandates from improved physical and IT security. Finally, the BPD is establishing a capital operating reserve which it will use to offset future system improvements and IT initiatives.

The following table shows the current and projected costs for the services the Board obtains from BPD:

Fiscal Year	Amount	Increase
2007	300,360	n/a
2008	327,500	27,140
2009	450,275	122,775
2010	472,788	22,513

Future Issues

Rental of office space is a major component of the CSB budget, accounting for approximately \$773,000 in FY 2009. For almost ten years, the CSB has been located in commercial office space in downtown Washington, DC. During FY 2010, the agency's ten-year lease is set to expire. With continued strong demand for office space in the Washington metropolitan region, the agency anticipates that rental costs may more than double beginning in FY 2010, whether or not the agency decides to relocate to a different building. The CSB is evaluating cost effective alternatives and possible lease renegotiation prior to 2010 in order to control increases in rent

over the next decade. The CSB will keep Congress and the Office of Management and Budget informed on the outlook for its space rental costs for FY 2010 and succeeding years.

Status of Emergency Fund

The CSB currently has a no-year emergency fund for investigations totaling \$844,000. The agency is not currently requesting any change to this fund. Thus far, the CSB has been able to fund investigation costs through reprogramming of existing funds without drawing down the emergency fund. Should the need arise for the Board to draw upon the fund due to an emergency circumstance, the agency will immediately inform Congress and the Office of Management and Budget.

Conclusion

The Board's modest budget is literally dwarfed by the costs – both human and financial – of the accidents it investigates. The CSB's last five years have been at least three times as productive as the first five. This tripling of productivity occurred on an annual budget that essentially remained flat for the entire five-year period. The 2002 budget of \$7.8 million is equivalent to about nine million in today's dollars – just 1.7% less than the current appropriation. For FY 2009, the Board seeks an additional investment in its mission, which the agency will repay by further strengthening its vital safety efforts in workplaces and communities.

Over the past two and half years, the CSB's value to the nation has been demonstrated as never before. The Board's investigation of the tragic explosion at the BP Texas City refinery has had and continues to have an international impact. Major multinational corporations and their workforces are benefiting from the Board's safety findings through better facility siting, enhanced process safety measures, elimination of unsafe equipment, and greater attention to maintaining favorable safety cultures and effective corporate oversight. Furthermore, the CSB's efforts at broadly disseminating its findings are succeeding to an unprecedented degree, with hundreds of thousands of oil and chemical executives, managers, and workers using the Board's products in their front-line efforts to prevent major accidents.

The CSB Safety Videos DVD provides a graphic overview of the kinds of investigations the CSB does, and the recommendations that have resulted – all aimed at chemical accident prevention. Thousands of positive comments from all industry sectors have been received on the effectiveness of the videos. The establishment of a formal funding line for this outreach program will enable the CSB to share its lessons learned for the prevention of fatalities and injuries caused by tragic chemical accidents.

The CSB seeks support in this budget justification to accommodate increasing costs, a new investigative team, formalized funding for outreach, and future needs of the agency. This increase will be a wise investment that benefits U.S. industries, workers, and communities.

Appendices

Appendix A: Recent Major Activities of the Chemical Safety and Hazard Investigation Board

The numerous potentially fatal accidents investigated by the CSB occur across a variety of industries including petrochemicals and refining, chemical manufacturing, gas distribution, wastewater treatment, and ink manufacturing. In 2007, the CSB deployed to the chemical accidents below.

Deployments to Accident Sites

January 30, 2007, Propane Tank Explosion: Four people died and five people were seriously injured when gas from a leaking propane storage tank exploded at a convenience store in Ghent, West Virginia. Among the dead were two volunteer firefighters who responded to initial reports of the leak, only to fall victim when the gas cloud exploded. The CSB investigation is examining evacuation and emergency response procedures, propane tank and valve safety, and training requirements for propane gas fitters.

February 16, 2007, Propane Release and Fire: Three workers were seriously burned when a propane release and fire occurred in a processing unit at the Valero refinery in Sunray, Texas. This important facility supplied gasoline to the U.S. Midwest and was forced to shut down completely for several months, causing regional gasoline prices to increase sharply. In addition, toxic chlorine gas was released when the fire engulfed several chlorine storage tanks used for water treatment. The CSB investigation is examining what equipment failures caused the propane to be released and ignited, why the failures occurred, and what can be done to mitigate the effects of such fires in refineries.

July 17, 2007, Chemical Solvent Explosion: An explosion at a solvent distribution facility in a Wichita, Kansas, suburb forced officials to ask for the evacuation of approximately 6,000 people. Tank fragments rocketed from the facility, causing damage off site. A CSB investigative team was deployed and is examining practices to ensure safer loading and unloading of flammable liquids and to mitigate the consequences of tank farm fires.

July 25, 2007, Gas Cylinder Explosions: CSB investigators were deployed to the site of major explosions and a fire at a Dallas gas cylinder distributor, which caused three injuries, destroyed the facility, and forced the temporary closure of major downtown highways when cylinder fragments were hurled over a wide area.

August 9, 2007, Acetylene Fire: Approximately eight hundred employees were evacuated when a fire occurred on an acetylene delivery trailer at a drill bit

manufacturing facility in a Houston suburb. An investigative team from the CSB deployed to the site to examine the involvement of a similar delivery trailer as the fire that occurred in Dallas on July 25.⁸

October 3, 2007, Chemical Solvent Explosion: The CSB deployed to Georgetown, Colorado, where a chemical fire killed five workers in an underground pipeline at a hydroelectric plant. The fatally injured workers had become trapped deep underground when a fire ignited during an operation to coat the inside of a four foot diameter pipe with epoxy. The underground pipe is several thousand feet long and connects a reservoir with electricity-generating turbines.

October 29, 2007, Chemical Solvent Fire: Investigators from the CSB were deployed to the site of a solvent fire at a distribution facility in Des Moines, Iowa. The fire occurred during a loading operation and led to an evacuation and the closure of major roadways. The CSB is also investigating the July 17 solvent fire that heavily damaged another distribution facility owned by the same company in Kansas, causing the evacuation of thousands of residents and sending projectiles into the surrounding community.

December 19, 2007, Reactive Chemical Explosion: A CSB investigative team flew to Jacksonville, Florida, where a chemical reactor ruptured and exploded, killing four people and injuring 33 others. The facility, which manufactured the gasoline additive MCMT, was devastated by the explosion, estimated to have the force of approximately 2,000 pounds of TNT. Workers in other businesses were also injured by the powerful shock wave, which caused structural damage to buildings off site.

Major Public Meetings and Events

January 16, 2007, CSB-recommended Baker Panel Report: An independent review panel – chaired by former Secretary of State James A. Baker III and created by BP in response to an urgent recommendation of the CSB – issued a 374-page final report that found safety problems at all five of BP's North American refineries. The safety problems included inadequate maintenance, near-miss investigation, training, staffing, and investment. Pointing to a lack of process safety leadership at the highest levels of BP, the panel issued 10 major recommendations to the company, including recommendations to the global board of directors for greater safety accountability.

March 20, 2007, Public Meeting on Final Investigation Report on BP Accident: The CSB held a public meeting for the release of its final investigation report on the fatal 2005 explosion at the BP Texas City facility that killed 15 workers and injured 180 others. The meeting was attended by over 200 community members and others in Texas City.

⁸ The CSB announced in January 2008 that since both the Dallas and Houston accidents involved acetylene delivery trailers, the NTSB will carry forward the investigation.

May 9, 2007, Community Meeting on Danvers Solvent Explosion: At a CSB community meeting in Danvers, Massachusetts, investigators concluded that the November 2006 explosion at an area ink and paint company was most likely caused by the inadvertent overheating of solvents left stirring overnight in an unsealed mixing tank, releasing a flammable vapor cloud. Investigators found that the facility lacked adequate ventilation systems and did not comply with federal and state codes. Approximately 200 people attended the hearing, including many who had lost the use of homes and businesses due to the blast.

March 22, 2007, Testimony at Congressional Hearing: The House Committee on Education and Labor convened a hearing on “The BP-Texas City Disaster and Worker Safety.” The Chairman⁹ told the committee there should be increased oversight of the oil refining industry by OSHA.

May 16, 2007, Testimony at Congressional Hearing: The oversight subcommittee of the House Committee on Energy and Commerce conducted hearing entitled “2006 Prudhoe Bay Shutdown: Will Recent Regulatory Changes and BP Management Reforms Prevent Future Failures?” The testimony stated that the CSB investigation of the Texas City accident and a separate investigation of the Prudhoe Bay accident both found deficiencies in how BP managed the safety of process changes. For example, abnormal startups were not investigated and became routine, while critical equipment was allowed to decay.

May 24, 2007, Testimony at Congressional Hearing: The House Committee on Education and Labor Subcommittee on Workforce Protections held a hearing entitled “Workplace Safety: Why do Millions of Workers Remain Without OSHA Coverage?” The Board’s written testimony called for new measures to cover America’s public employees under OSHA standards. The testimony cited the CSB’s investigation of a January 2006 methanol fire and explosion at a Florida municipal wastewater treatment plant that killed two public employees and seriously injured a third.

July 10, 2007, Testimony at Congressional Hearing: The CSB’s authorizing subcommittee in the Senate Committee on Environment and Public Works convened a hearing on “Lessons Learned from Chemical Safety Board (CSB) Investigations, Including Texas City, Texas.” The CSB’s testimony discussed how federal regulatory oversight of the petrochemical industry could be strengthened.

December 20, 2007, CSB Commends New York City Fire Code Overhaul: In December 2007, New York City announced that, after a three-year review process, it is adopting the International Fire Code to regulate fire and hazardous material safety in the city. Four years earlier, the CSB called upon New York City to revise its nearly 90-year old-fire code following a CSB investigation into 2002 chemical explosion at a downtown

⁹ Carolyn W. Merritt, then-chairman of the CSB, was the opening witness at all three hearings. Chairman Merritt’s five-year term expired on August 2, 2007; the position is currently vacant pending Senate action on the president’s nomination of a new chair. The Board has followed its standing procedures by delegating the chairperson’s responsibilities on an interim basis to one of the sitting members.

sign manufacturer. The accident injured 36 people and caused extensive building damage. Firefighters were among the injured. The CSB's investigation concluded the accident occurred when employees improperly mixed hazardous material and that the New York City Fire Code did not adequately address storage, handling and use of hazardous chemicals. The CSB commended the code overhaul at an FDNY public meeting in Brooklyn.

Reports and Videos Issued

In calendar year 2007, the CSB released eight investigation reports or bulletins and three new safety videos, including a detailed video on chemical reaction hazards in industry. These products contain significant new recommendations to federal, state, and industry bodies.

March 6, 2007, Final Report and Video on Fatal Vinyl Chloride Explosion: The CSB issued its final report on a 2004 explosion at a PVC manufacturing facility in Illiopolis, Illinois. Five workers died, and the facility was heavily damaged and never reopened. The CSB concluded that a worker had mistakenly bypassed a safety interlock on a vessel filled with flammable vinyl chloride, resulting in a release. The investigation also found that the company had experienced other similar incidents and the facility lacked important safeguards to prevent such mistakes. Coinciding with the final report, the CSB issued a new computer animated safety video to educate others in industry about the importance of designing facilities to minimize the effects of human errors.

March 13, 2007, Final Report and Video on Fatal Methanol Fire: The CSB's final report on a Daytona Beach, Florida, wastewater plant explosion in 2006, was issued at a news conference in Tallahassee. The report called on the Florida governor and legislature to enact OSHA protections for state and local public employees. The Board also called on the National Fire Protection Association to revise the national fire code to further restrict the use of plastic piping for flammable liquid systems; fracturing of plastic pipe contributed to the severity of the fire in Daytona Beach. The CSB released a new safety video focusing on the accident, which was distributed to the public and to all the members of the Florida state legislature.

March 20, 2007, Final Report on BP Texas City Explosion: The March 2005 explosion during the restart of a refinery unit killed and injured 15 people in nearby work trailers and cost billions of dollars in victims' compensation, property damage, and lost production. In addition, 180 people were injured. Almost three years after the explosion, gasoline production remains depressed at the refinery - the nation's third largest – contributing to the ongoing hardship of America's driving public.

The Board uncovered extensive evidence of a flawed safety culture that tolerated near-miss accidents for many years, failed to invest adequately in safety, and allowed budget cuts that compromised training, staffing, and maintenance. The Board recommended stronger OSHA enforcement at refineries, new standards for preventing operator fatigue and measure process safety using indicators, and safer disposal systems for flammable hydrocarbons.

In October 2005, the CSB recommended new industry standards to protect workers in trailers from fire and blast dangers. In June 2007, the American Petroleum Institute (API) issued a new guidance document, which for the first time establishes industry-wide minimum setback distances for trailers away from process hazards. In addition, OSHA responded to the CSB's investigation and recommendations by establishing a new special emphasis enforcement program for oil refinery process safety.

April 10, 2007, Final Report on Fatal Solvent Explosion: In a final report issued at a news conference in Chicago, the CSB found that inadequate building code reviews and evacuation plans were among the causes of a fatal explosion at an Illinois concrete products firm. In June 2006, a bystander was killed and two employees were injured when solvent vapors escaped from an open-top heated mixing tank that lacked appropriate ventilation equipment. The report called on OSHA to require employers to conduct practice evacuation drills at least annually.

June 12, 2007, Final Report on Fatal Oilfield Explosion: The CSB's final case study report on an oilfield explosion that killed three contract workers in Mississippi in June 2006 found unsafe work practices, including a failure to seal off a tank containing flammable vapors before initiating high-temperature welding. The Board called on the Mississippi State Oil & Gas Board to establish a program to identify and refer unsafe operations to OSHA and called on the regional OSHA office to establish an enforcement emphasis program for oil and gas production facilities.

June 14, 2007, Safety Bulletin and DOT Recommendation on Chlorine Emergency Shutdown: The CSB released a safety bulletin warning that a number of chlorine railcar transfer systems around the country lack effective detection and emergency shutdown devices, leaving the public vulnerable to potential large-scale toxic releases. The Board recommended that the U.S. Department of Transportation (DOT) require facilities that unload chlorine railcars to install remotely operated emergency isolation devices to quickly shut down the flow of chlorine in the event of a hose rupture or other failure in the unloading equipment. The safety bulletin cited two previous incidents of accidental chlorine releases that occurred as a result of ruptured transfer hoses.

June 27, 2007, Safety Advisory and Urgent Recommendation on Unspent Oxygen Generators: The CSB issued a new safety advisory concerning the dangers of transporting and handling unspent aircraft chemical oxygen generators – similar to those that caused the 1996 ValuJet airline crash in the Everglades. CSB investigators found that unspent oxygen generators most likely contributed to the rapid spread of the hazardous waste facility fire that forced the evacuation of thousands of residents from Apex, North Carolina, in October 2006.

July 31, 2007, Final Report and Video on Fatal Reactive Chemical Explosion: The CSB issued its final report on a fatal chemical explosion at a North Carolina chemical plant in January 2006. The report traced the runaway chemical reaction caused by an increase in product batch size that was undertaken without adequate testing, review, or oversight. The Board accompanied the report with a new, 20-minute safety video on

reactive chemical hazards, including computer animations of four reactive accidents investigated by the CSB. The video immediately found a large worldwide audience in the chemical and process industries.

Appendix B: Recommended Appropriations Language

CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD *Federal Funds*

General and special funds

CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

SALARIES AND EXPENSES

For necessary expenses in carrying out activities pursuant to section 112(r)(6) of the Clean Air Act, as amended, including hire of passenger vehicles, uniforms or allowances therefore, as authorized by 5 U.S.C. 5901-5902, and for services authorized by 5 U.S.C. 3109 but at rates for individuals not to exceed the per diem equivalent to the maximum rate payable for senior level positions under 5 U.S.C. 5376, ~~[\$9,410,000]~~ \$10,600,000 of which up to \$3,000 may be used for official reception and representation expenses:¹⁰ *Provided, that in fiscal year 2009 and thereafter, notwithstanding any other provision of law, the Environmental Protection Agency Inspector General shall not serve as the Inspector General for the Board.* That the Chemical Safety and Hazard Investigation Board (Board) shall have not more than three career Senior Executive Service positions:¹¹ *Provided further, that notwithstanding any other provision of law, the individual appointed to the position of Inspector General of the Environmental Protection Agency (EPA) shall, by virtue of such appointment, also hold the position of Inspector General of the Board.* *Provided further, That notwithstanding any other provision of law, the Inspector General of the Board shall utilize personnel of the Office of Inspector General of EPA in performing the duties of the Inspector General of the Board, and shall not appoint any individuals to positions within the Board.*

¹⁰ The requested reception and representation funds will be primarily used to support the CSB's public and community meetings around the country.

¹¹ This longstanding and unusual provision is moot since the number of Senior Executive Service (SES) positions is set for the CSB and other agencies by the U.S. Office of Personnel Management (OPM); the CSB currently has two OPM-allocated SES slots, of which only one has been in use since 2004.

Appendix C: Fiscal Year 2007-2009 Salaries & Expenses

(Dollars in Thousands)

	FY 2007 Actual	FY 2008 Budget	FY 2009 Request
Personnel Compensation & Benefits	\$5,305	\$5,811	\$6,731
Contractors	575	491	491
Fixed Costs			
Rent, Communications, & Utilities	776	787	807
Interagency Services	576	521	650
Maintenance	23	54	56
Total Fixed Costs	1,375	1,362	1,513
Variable Costs			
Travel & Transportation	326	324	324
Rent, Communications, & Utilities	83	85	85
Printing	39	35	35
Other Services	1,044	1,008	1,274
Supplies	106	137	137
Equipment	95	10	10
Total Variable Costs	1,693	1,599	1,865
Total Costs	\$8,948	\$9,263	\$10,600

Appendix D: Analysis of Change FY 2008 to FY2009

Salaries & Expenses

(Dollars in Thousands)

FY 2008 Appropriation (Salaries & Expenses)\$ 9,263

Summary of Adjustments to Base and Built-In Changes

Personnel Cost Increases¹

Full Year FY 2009 Cost of Positions Filled During FY 2008	250
FY 2009 Cost for New FY 2008 Investigator Positions ²	379
Cost of New Knowledge Manager Position	98
Estimated Cost of January 2009 Pay Increase ³	145
Miscellaneous Benefits Changes	48
TOTAL INCREASE.....	920

Fixed Cost Increases

Rent, Communications, & Utilities.....	20
Interagency Services	129
Maintenance.....	2
TOTAL INCREASE.....	151

Variable Cost Increases

Travel & Transportation	0
Rent, Communications, & Utilities.....	0
Printing and reproduction	0
Other services.....	266
Supplies.....	0
Equipment	0
TOTAL INCREASE.....	266

Total Adjustments to FY 2008 Salaries & Expenses1,337

Total FY 2009 Appropriation Request\$ 10,600

¹ Benefits are calculated at 28.39 percent of base pay.

² House Report 110-187 provided funding for 3 new investigative positions in FY 2008. However, the final appropriation was not sufficient to fill these positions in FY 2008.

³ FY 2009 pay increase estimated at 2.90 percent of base pay.

Appendix E: Significant Adjustments to Analysis of Change FY 2008-2009

Personnel Costs: The FY 2009 budget for personnel costs reflects an increase of \$920,000 in order to:

- Fully fund two Board Members and three investigative positions which were partly funded in FY 2008. Four of these positions, including the two Board Members, were vacant as of January 31, 2008. The full year FY 2009 cost for these positions is \$250,000 more than the partial year funding budgeted for FY 2008.
- Fund three investigative positions, which were provided for in House Report 110-187. However, the final FY 2008 appropriation was not sufficient to fill these positions. The full year FY 2009 cost of these positions is \$379,000.
- Fund one new Knowledge Manager position at \$98,000.
- Provide for the projected January 2009 pay increase and miscellaneous benefit increases totaling \$193,000.

Rent, Communications, & Utilities: In accordance with our lease the CSB will have an \$18,000 increase in office rent in FY 2009, along with an increase in communication cost of \$2,000.

Interagency Services: The CSB has been informed that there will be \$123,000 in increases to our interagency agreement for accounting, procurement, and travel services. Other interagency agreements for services will increase by a projected \$6,000 for FY 2009.

Other Services: The net increase of \$266,000 is a result of miscellaneous reductions of \$28,000, provide \$250,000 in line item funding for safety videos and \$44,000 for security clearances. Previously, the production of safety videos has been paid using vacant position funds with no program funding line established to fully fund this vital outreach program in future years. The videos use advanced computer animation to explain in just a few minutes precisely how a major chemical accident occurred. The videos present the specific findings and recommendations from CSB reports and feature interviews with CSB Board Members and investigators discussing appropriate good safety practices for all similar companies to follow. Safety videos facilitate improvements in training, engineering and process design, and help to prevent multiple tragic and costly workplace accidents around the country.

However, without a dedicated funding source, it is uncertain how the program can be continued once vacant positions have been filled.

CSB APPROPRIATIONS BY FISCAL YEAR
(DOLLARS IN MILLIONS)

Appendix F: Salaries & Expenses

Fiscal Year	One-Year Funds	Two-Year Funds	Total Funds
1998	\$4.00	\$0.00	\$4.00
1999	6.50	0.00	6.50
2000	7.97	0.00	7.97
2001	4.99	2.49	7.48
2002	5.34	2.50	7.84
2003	7.31	0.50	7.81
2004	8.20	0.00	8.20
2005	9.03	0.00	9.03
2006	9.06	0.00	9.06
2007	9.11	0.00	9.11
2008	9.26	0.00	9.26
2009 ^a	10.60	0.00	10.60

^a Request

Emergency Fund^b

Fiscal Year	New Funding	Amount Spent to Date	Total Available
2004	\$0.44	\$0.00	\$0.44
2005	0.40	0.00	0.84

^b The Emergency Fund was established in FY 2004. It provides a funding mechanism so periodic accident investigation cost fluctuations can be met without delaying critical phases of the investigations. It is no-year funding, meaning it is available until expended.

CSB PERSONNEL DATA

Grade	On Board 9/30/2006	On Board 9/30/2007	On Board 1/31/2008	Projected 9/30/2008	Requested FY 2009
GS-7	6	7	7	7	7
GS-9	3	3	3	3	3
GS-11	1	2	2	3	3
GS-12	1	1	1	1	2
GS-13	3	2	2	3	6
GS-14	13	11	9	9	9
GS-15	8	8	11	11	11
Executive	5	3	3	5	5
SES	1	1	1	1	1
Totals	41	38	39	43	47