

# **U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD**



## **BUDGET JUSTIFICATION**

**Fiscal Year 2005**

# **Fiscal Year 2005 Budget Justification**

## **Summary**

The U. S. Chemical Safety and Hazard Investigation Board (CSB) significantly increased its activity in fiscal year (FY) 2003. For the first time in its history, the CSB had a full complement of Board members and the Board increased its staffing in the Office of Investigations and Safety Programs. As a result, in FY 2003 the CSB initiated a total of twelve incident investigations, completed six investigations, and issued a safety bulletin on the hazards of nitrogen. In addition, the CSB issued 90 new recommendations to improve safety, and successfully closed 10 previous recommendations. Corporate process safety managers and other safety professionals reported to CSB that the information and messages delivered in CSB investigation reports and safety products provide them help in preventing other major accidents.

For FY 2005, the Board requests an operating budget of \$9.45 million and an increase in the emergency reserve fund to \$847,000. This will enable the Board to carry out the core work of investigations of chemical incidents and dissemination of the lessons learned to prevent future incidents, and provide an adequate emergency fund. The increase will improve prevention efforts to save lives and protect the environment in the areas surrounding the nation's chemical facilities.

## **Mission and Goals**

The mission of the Chemical Safety Board is to investigate chemical accidents and hazards, and to recommend actions to protect workers, the public, and the environment. The CSB's independent, scientific investigations bolster efforts by government, industry, labor, and communities to prevent chemical accidents. To carry out this mission the Board has established these goals:

- **Goal #1:** Produce timely, high-quality investigations, reports, recommendations, and other technical products.
- **Goal #2:** Achieve wide implementation of CSB recommendations and related accident prevention measures.
- **Goal #3:** Maintain a high performance work organization to ensure effective mission accomplishment.

## **FY 2003 Performance**

### **Goal #1**

During FY 2003, CSB completed six major incident investigations and one safety study:

- Kaltech Industries On April 25, 2002, an explosion occurred at Kaltech Industries, a sign manufacturer in the Chelsea neighborhood of New York City, injuring 36 people seriously enough to seek hospital treatment, including 14 members of the public. The CSB found that the accident resulted from mixing two incompatible waste chemicals, lacquer thinner and nitric acid, without following basic safety requirements. The report called on the Mayor and City Council of New York to revise the Fire Prevention Code to “achieve more comprehensive control over the storage and use of hazardous materials.”
- BLSR Operating Ltd. On January 13, 2003, a vapor cloud deflagration and fire erupted at the BLSR Operating Ltd. oilfield waste disposal facility near Rosharon, Texas, south of Houston. The fire killed three and injured four other workers. The CSB concluded that the fire could have been avoided if the companies involved had recognized the hazards of the materials being handled and transported; had safer procedures for handling flammable wastes; and if the companies and regulators had better oversight of the operations.
- DPC Enterprises. On August 14, 2002, a chlorine transfer hose ruptured during a rail car unloading operation at the DPC Enterprises chlorine repackaging facility near Festus, Missouri. The hose rupture ultimately led to the release of 48,000 pounds of chlorine, causing three workers and 63 residents to seek medical treatment. The CSB found that better equipment maintenance and better quality assurance on hose supplies would have prevented the release.
- Third Coast Industries. On May 1, 2002, a fire erupted at Third Coast Industries in unincorporated Brazoria County, Texas. Despite efforts of firefighters, the fire ultimately consumed 1.2 million gallons of combustible and flammable liquids and destroyed the site. One hundred nearby residents were evacuated, a local school was closed, and significant environmental cleanup was necessary due to fumes and runoff. The CSB found that better fire protection systems could have suppressed the huge fire and that a county fire code would have required the installation of such systems. One week after the report was formally adopted, the county adopted a fire code for the first time.
- Georgia-Pacific Corp. On January 16, 2002, highly toxic hydrogen sulfide gas leaked from a sewer manway at the Georgia-Pacific Naheola mill in Pennington, Alabama. Several people working near the manway were exposed to the gas. Two contractors were killed and eight others were injured. The CSB concluded that plant management had not followed good engineering and process safety practices when in 1995 they connected a drain from a tank truck unloading area into an acidic process sewer system.
- Environmental Enterprises. On December 11, 2002, one maintenance employee was overcome when he inhaled hydrogen sulfide gas from a waste processing vessel at Environmental Enterprises, a hazardous waste treatment company in Cincinnati, Ohio. No other injuries or damage were reported, and the injured worker was subsequently pulled to safety. The CSB found the incident could

have been avoided if alarms had been installed or if the wastes had been treated in appropriate tanks instead of in uncovered tanks.

- Nitrogen Study. In FY 2003 the CSB also completed a nationwide review of incidents similar to the March 1998 nitrogen asphyxiation incident at Union Carbide in Hahnville, Louisiana. The CSB study identified a total of 85 incidents that occurred in the U.S. between 1992 and 2002 and involved exposure to a nitrogen-enriched atmosphere. Together these incidents caused 80 deaths and 50 injuries. The CSB developed a safety bulletin on nitrogen asphyxiation hazards, highlighting a variety of good practices to avoid such incidents.

In addition to these activities, CSB launched twelve new incident investigations in FY 2003. Significant new investigations include:

- First Chemical Corp. On October 13, 2002, a violent explosion occurred in a chemical distillation tower at First Chemical Corporation in Pascagoula, Mississippi, sending heavy debris over a wide area. The CSB issued a report on this incident in early FY 2004 that concluded the explosion occurred because First Chemical Corporation had not effectively evaluated the hazards of a chemical process and that plant operators were unaware that a dangerous chemical reaction was taking place inside the tower.
- West Pharmaceutical Services On January 29, 2003, an explosion and fire destroyed the West Pharmaceutical Services plant in Kinston, North Carolina, causing six deaths, dozens of injuries, and hundreds of job losses. CSB investigators found that the fuel for the explosion was a fine plastic powder used to coat rubber goods. The dust had collected above a false ceiling.
- CTA Acoustics On February 20, 2003, an explosion and fire damaged the CTA Acoustics manufacturing plant in Corbin, Kentucky, fatally injuring seven workers. The facility produced fiberglass insulation for the automotive industry. CSB investigators found that the explosion was fueled by resin dust accumulated in a production area, likely ignited by flames from a malfunctioning oven.

## **Goal #2**

Investigation report recommendations are CSB's principal tool for promoting chemical safety. Each recommendation has one or more specific recipients, who are the parties best able to carry out the recommended action to improve safety. Once CSB has issued a recommendation, the CSB encourages implementation and tracks completion. The Board ensures that the recommendation is effectively communicated to the recipient(s), together with any needed justifications or explanations. In FY 2003, the CSB issued a total of 90 recommendations.

The CSB meets periodically with recipients as appropriate to encourage positive action. In due course, staff evaluates recipients' responses and advises the Board members who vote independently to approve closure of the recommendations. In FY 2003, the CSB

closed 10 recommendations. One of these recommendations, the adoption of a fire code in Brazoria County, Texas, was implemented within one week of the release of the CSB recommendation. The new fire code will help to prevent future destructive fires such as the one that demolished the Third Coast Packaging plant in Pearland, Texas in May 2002.

In response to our recommendations in the Kaltech investigation, a bill has been introduced in the New York City Council requiring the Fire Department to assess annually the adequacy of the City Fire Code and the Council has held two hearings on the subject. The CSB testified in support of our recommendation on reform of the fire code.

In addition to these activities, the CSB convened a roundtable meeting with industry, labor and government representatives to discuss how regulatory agencies could implement CSB recommendations on controlling reactive chemical hazards. A second joint roundtable focused on improving the reporting of chemical accidents to government agencies. One hundred fifty people attended the two roundtables.

As a new initiative this year, the Board held four community meetings and one public hearing to inform the communities affected by chemical incidents of the progress of investigations and to respond to the concerns of workers, the public and business owners. The meetings allowed interested parties to hear preliminary findings before recommendations are developed. These sessions also allowed the Board to hear from workers and the community regarding any issues of concern, and thereby strengthening the content and impact of our investigations.

Along with these Board actions, individual Board members and staff disseminated the recommendations and findings from CSB investigations throughout the country, giving dozens of presentations to business, labor, and public interest groups. The CSB also completed a significant redesign of its website to provide easier electronic access to important safety information.

The safety information and lessons disseminated through CSB's reports have been valuable to companies and unions in their efforts to prevent chemical incidents. Responding to the CSB report on the chlorine incident at DPC Enterprises in Missouri, the president of York Rubber Company, also involved in chlorine distribution, wrote, "The CSB report was thorough, the findings and recommendations incisive...the CSB is both a capable investigative entity and a valuable conduit for information."

The president of the International Chemical Workers Union Council (ICWU) wrote, "The CSB reports of industrial chemical accidents have been of significant help to both our members and management at [chemical] facilities. These investigations have been used in our training activities at the ICWU Center for Worker Health and Safety Education to help build an informed workforce to prevent future tragedies."

The CSB continues to be an effective agency working to prevent death, injury and environmental damage at chemical processing, storage and handling facilities throughout the nation.

### **Goal #3**

In FY 2003, the CSB revised its strategic plan for FY 2004 through FY 2008. This plan continues to recognize that high performing employees are essential to accomplishing our mission. The revised plan builds on the foundation work that has been completed in this area and focuses the CSB on improving the training, performance, productivity and satisfaction of its current workforce.

In FY 2003, the CSB implemented all six recommendations from a November 2002 Office of Inspector General report on our Human Resource Management (HRM) Program, including the hiring of an HRM Director. Specific accomplishments include the development of a manager training program, an employee handbook, teambuilding for staff, development of behavioral-based interviewing and the beginning of a comprehensive Human Capital review.

### **FY 2004 Activities**

In the current fiscal year, the Board has continued its active pace of completing investigations and initiating new ones.

- On October 15, the Board held a public meeting in Pascagoula, Mississippi and issued its final report on the incident at the First Chemical Corp discussed above.
- On October 29, the Board released a case study of an incident that occurred at Catalyst Systems, Inc. in Gnadenuhnten, Ohio on January 2, 2003. There, a vacuum dryer exploded injuring one employee and damaging the facility.
- On October 30, the Board initiated an investigation into an aluminum dust explosion and fire at the Hayes Lemmerz plant in Huntington, Indiana. In this incident one worker died, another was severely burned and the plant was heavily damaged.
- On November 17, the Board began an investigation into a chlorine gas leak at the DPC Enterprise plant in Glendale, Arizona. In this incident fourteen people, including ten police officers, required treatment for chlorine exposure. People in a three square mile area were evacuated or sheltered in place as a result of the incident.
- On December 30, the Board conducted a preliminary review of a magnesium fire at the Garfield Alloys plant near Cleveland, Ohio. No one was injured in the incident, but residents within a quarter-mile of the plant were evacuated.
- On January 11, 2004, an explosion and fire at Huntsman Chemical Company in Port Neches, TX, injured six workers and caused millions of dollars in damage. CSB launched a preliminary investigation and determined that a failure to purge chemicals from the piping system caused the explosion.

- In March, the Board will hold a meeting in Louisville, Kentucky to issue a report on an April 11, 2003 incident at the D.D. Williamson & Co., plant, in which one worker was killed when a process vessel became over pressurized and exploded, releasing aqueous ammonia and damaging the plant.
- Stimulated by dust explosions at West Pharmaceutical Services and CTA Acoustics, the CSB has initiated a study of dust hazards in the chemical processing industry and how to prevent them.

### **FY 2005 – Proposed Budget**

For FY 2005, the CSB's proposed operating budget of \$9.45 million will provide funding to maintain the pace established in FY 2003 and allow for activities related to the growing number of safety recommendations. The Board will initiate 12 investigations and studies and complete 12, disseminate the results, and work to get safety recommendations implemented. In addition, this funding level will allow the agency to continue upgrading staff investigative and technical skills, which will enable CSB to conduct more investigations and to issue reports faster. This funding level will also allow the CSB to fill critically needed positions and fund an information technology (IT) contract support position that was suspended in FY 2004 due to budget constraints. The "Analysis of Change" section of this document provides a detailed explanation of increases to the operating budget over the FY 2004 level.

The most important challenge the Board faces in FY 2005 and future years is communicating the safety lessons learned and the recommendations from investigations to the chemical industry and others who can benefit from the information. With more than 100 recommendations open and new recommendations being made at the rate of nearly 100 per year, implementing these recommendations throughout the chemical industry is a matter of primary concern for the Board. In the seventh year of existence, the Board has a growing body of knowledge of how to prevent deaths, injuries and environmental damage from chemical processing, storage and handling incidents. The public benefit of this knowledge and the lessons learned will only be realized when this information is distributed to those who can use it to prevent future incidents.

Company managers generally address recognized hazards, since running a safe operation is good business. But often there are hidden hazards beyond the recognition of operating managers. The CSB is requesting \$450,000 in FY 2005 to enhance our recommendation program by getting information on chemical hazards and better safety practices to the appropriate managers. Under this program, the CSB would hire three technical experts to develop and deliver specific safety information resulting from our investigations through a carefully targeted communications program.

The first hazard to be addressed by this program is dust, which caused explosions, fires and 13 deaths at West Pharmaceutical Services and CTA Acoustics plants in FY 2003. The Board believes there are dust hazards at hundreds, perhaps thousands of plants in the chemical processing and related industries. In addition to the loss of human life, these

hazards have exceptional economic consequences. The West Pharmaceutical Services explosion cost the company an estimated \$35 million in operating losses, \$18 million in rebuilding costs, and the cost of litigation is still to be determined. The community suffered severe economic losses as well from the extended loss of this major employer. Upon the conclusion of the dust hazard study begun this year, the CSB will initiate a campaign to inform the chemical business community, particularly small business, which may not have expert safety managers on staff, of the hazards of dust explosions. By preventing even a few dust explosions, just the dollar benefits of this project will far exceed its costs.

Finally, in FY 2004 we are working on an IT capital plan that addresses the CSB's IT requirements over the next 5 years. Key components of the plan are to develop, modernize and enhance the IT infrastructure; improve information security; and provide our investigators with tools to assist them in conducting investigations. The plan will require significant funding the first year to replace and update infrastructure. An initial IT capital plan was approved by OMB and we will present the plan as a major request for FY 2006.

We urge the OMB and the Congress to support our proposed budget for FY 2005.



## **FY 2005 APPROPRIATION 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, \$9,451,000, to be available until September 30, 2005: Provided, that the Chemical Safety and Hazard Investigation Board shall have not more than three career Senior Executive Service Positions.

#### **EMERGENCY FUND**

For necessary expenses of the Chemical Safety and Hazard Investigation Board for accident investigations not otherwise provided for, \$400,000 to remain available until expended.

**CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD**

**FISCAL YEAR SALARIES & EXPENSES**

(in thousands of dollars)

	<b>FY 2003 Actual<sup>1</sup></b>	<b>FY 2004 Budget</b>	<b>FY 2005 Request</b>
<b>Personnel Compensation &amp; Benefits</b>	<b>\$ 5,065</b>	<b>\$ 5,409</b>	<b>\$ 6,207</b>
<b>Contract Employees</b>	<b>752</b>	<b>531</b>	<b>640</b>
<b>Fixed Costs</b>			
Rent, Communications, & Utilities	666	697	712
Interagency Services	421	373	379
Maintenance	14	26	39
<b>Total Fixed Costs</b>	<b>1,101</b>	<b>1,096</b>	<b>1,130</b>
<b>Variable Costs</b>			
Travel & Transportation	259	325	345
Rent, Communications, & Utilities	70	77	93
Printing	29	46	53
Other Services	843	592	835
Supplies	133	109	132
Equipment	38	16	16
<b>Total Variable Costs</b>	<b>1,372</b>	<b>1,165</b>	<b>1,474</b>
<b>Total Costs</b>	<b>\$ 8,290</b>	<b>\$ 8,201</b>	<b>\$ 9,451</b>

<sup>1</sup> Actual costs include funds from the FY 2003 appropriation of \$7.5 million and approximately \$800,000 in contracts and agreements that were funded using the two-year portion of the FY 2002 appropriation.

**Emergency Fund**

(in thousands of dollars)

	<b>FY 2003 Actual</b>	<b>FY 2004 Budget</b>	<b>FY 2005 Request</b>
<b>Emergency Fund</b>	<b>\$ 0</b>	<b>\$ 447</b>	<b>\$ 400</b>

**Analysis of Change**  
(in thousands of dollars)

**FY 2004 Appropriation (Salaries & Expenses).....\$ 8,201**

**Summary of Adjustments to Base and Built-In Changes:**

***Personnel Cost Increases<sup>1</sup>***

Cost of FY 2005 Hires .....579

Estimated Cost of January 2005 Pay Increase<sup>2</sup> .....219

***Total increase to personnel costs..... 798***

***Contract Employee Cost Increases ..... 109***

***Fixed Cost Increases***

Rent, Communications, & Utilities.....15

Interagency Services .....6

Maintenance.....13

***Total increase to fixed costs..... 34***

***Variable Cost Increases***

Travel & Transportation .....20

Rent, Communications, & Utilities.....16

Printing and reproduction .....7

Other services.....243

Supplies.....23

Equipment.....0

***Total increase to variable costs..... 309***

***Total Adjustments to FY 2004 Salaries & Expenses ..... 1,250***

***FY 2005 Salaries & Expenses ..... 9,451***

***FY 2005 Emergency Fund Increase ..... 400***

**Total FY 2005 Appropriation Request .....\$ 9,851**

<sup>1</sup> Benefits are calculated at 27 percent of base pay.

<sup>2</sup> FY 2005 pay increase estimated at 4 percent of base pay.

## **Analysis of Change** (Significant Adjustments)

**Personnel costs:** The FY 2005 budget for personnel costs reflects increases for additional positions to carry out the existing programs, and for the projected January 2005 pay increase.

The enhanced recommendation program is described earlier in this justification. This will strengthen the agency's ability to deliver to industry audiences prevention lessons learned from investigations. Personnel costs increases for this program are \$325,000.

Two additional positions needed to carry out the investigations program are a human factors investigator and a writer/editor. As illustrated by the Columbia shuttle investigation and the on-going work of the National Transportation Safety Board (NTSB), accident investigations are increasingly focusing on the human factors that contribute to accidents – factors such as information sharing within management systems, qualifications of key personnel, workplace conditions that affect human performance. NTSB employs human factors engineers in each of its investigative areas; this will be a first for the CSB.

We currently have one writer/editor on staff, and one person is not enough to process the growing number of investigation reports and other products we are producing. We plan to complete 12 products a year, which cannot be done by one editor and maintain high quality standards. By FY 2005 filling another writer/editor position will be critical to avoid delays in the issuance of reports and safety products.

In addition to these new positions, the agency proposes to convert one position providing administrative services to employee status rather than contractor status. The total for these three new positions is \$254,000.

Finally, an increase of \$219,000 is required to fund a projected January 2005 pay increase.

**Contract Employees:** A net increase of \$109,000 is requested. This results from a decrease of \$93,000 from converting one administrative service position to an employee and eliminating another administrative service position. An increase of \$94,000 is requested for an IT support contractor that was not funded in FY 2004 due to budget limitations. It is critical for continuity of operations that we fill this position to provide back up to our one IT employee. An increase of \$95,000 is requested for the communications contract related to the board's work. The increase in investigations has increased the demand for clear communications from the agency concerning deployments, work in progress, and public board meetings (These functions are fulfilled by the agency's public affairs contractor). Finally an increase of about \$13,000 is requested for as-needed, part-time support to help process Freedom of Information Act requests.

***Other Services:*** An increase of \$101,000 is requested to raise the budget per investigation for technical support, testing of materials, and expert consultation from \$182,000 to \$283,000. As CSB has grown more active in conducting investigations, the need has grown for specialized assistance, such as testing of chemicals and equipment, expert knowledge of ventilation systems, and experts in control room technology. The cost of expert assistance continues to rise, and CSB must be able to contract for this assistance if the reports are to continue to meet the highest technical standards. An additional increase of \$123,000 is primarily for services to enhance the recommendations program. We estimate \$100,000 will be needed for software and equipment for the presentations, travel and training for the specialists, and development costs for materials. The remaining \$19,000 is to fund expected small increases in a variety of areas including consultants, desktop publishing, and training.