U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

2001 - 2005 STRATEGIC PLAN

T O C O N G R E S S

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September 29, 2000

Dear Reader:

Conceived by Congress in the aftermath of major chemical catastrophes in Bhopal, India and Pasadena, Texas, the Chemical Safety and Hazard Investigation Board's mission is to promote the prevention of major chemical accidents at fixed facilities. Over the next five years, we will be working in partnership with others to ensure that the board:

- Conducts state-of -the art investigations of carefully selected major incidents involving the accidental release of hazardous chemicals.
- Produces high quality, easy-to-read, and timely investigation reports that identify the root and contributing causes of these incidents.
- Conducts hazard investigations and data studies designed to complement investigation report and recommendation activities.
- Issues well-reasoned and precisely targeted recommendations.
- Conducts effective advocacy activities for these recommendations.
- Develops metrics to assess the progress being made in reducing major chemical accidents at fixed facilities
- Develops, manages and maintains a diverse and highly skilled workforce in a functional federal agency.

In our third year of operations, we are pleased to present the board's first strategic plan that will guide the agency over the next five years. Building upon the board's long-term Mission Goal to promote the prevention of chemical accidents, the plan outlines our long-term goals and the strategies that we will employ toward attaining those goals.

America's system of chemical safety is dependent upon the expertise, professionalism and public interest of many stakeholders, including: plant managers, process safety engineers, line operators, local, federal and state regulatory and non-regulatory agencies, professional societies, labor unions, trade associations, emergency responders, insurers, public advocates and community representatives. Board members and staff have sought the input of many leaders from each of these groups in the development of our first strategic plan.

This effort is a work in progress. As the board completes additional investigations, gains acceptance of its safety recommendations and builds additional technical competency, its vision will evolve. We welcome your input. Comments may be forwarded to Anna Johnson via email at Anna.Johnson@csb.gov or to Ms. Johnson's attention at the above- mentioned address.

Gerald V. Poje , Ph.D. Irv Rosenthal, Ph.D. Andrea Kidd Taylor, Dr. P.H.

EXECUTIVE SUMMARY

CONGRESS ENVISIONED THE U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD AS A LEADING FEDERAL AGENCY IN THE PROMOTION OF CHEMICAL ACCIDENT PREVENTION.

The United States Chemical Safety and Hazard Investigation Board (CSB) is an independent federal agency with the mission of promoting the prevention of major chemical accidents at fixed facilities. The CSB is modeled after the National Transportation Safety Board (NTSB), which investigates transportation-related accidents.

Like the NTSB, the CSB is a scientific investigatory agency; it is not an enforcement or regulatory organization. The CSB is responsible for investigating the causes of chemical accidents at fixed facilities and issuing recommendations to prevent their recurrence. The CSB also conducts research, advises industry and labor on actions they should take to improve safety, and makes recommendations to local, federal, and state agencies such as the U.S. Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) at the U.S. Department of Labor, the key federal entities regulating industries using chemicals.

The CSB works through multi-faceted, collaborative partnerships with stakeholders including chemical companies, labor unions, trade and professional associations, insurance companies, environmental groups and local, federal, and state agencies to promote the prevention of chemical accidents and to make this country a safer place in which to live.

Out of 14,500 facilities that filed risk management plans in 1999 under the EPA's new Risk Management Program (RMP) rule, 1,145 of these facilities (7.9 percent) reported approximately 1,913 accidents over the five-year period from June 21, 1994, through June 20, 1999. These accidents resulted in a total of 1,897 injuries and 33 deaths to workers/employees and over $1 billion dollars of property damage.

While the accidents reported under EPA's rule did not result in deaths to members of the public or public responders, other accidents falling within the CSB's purview have resulted in multiple deaths to public responders. Over the five-year period, at least 200,000 members of the public had to evacuate or shelter in place. There was off-site property damage in about 3% of the cases with 217 people requiring hospitalization and 6,025 requiring medical treatment.

Members of the insurance industry have recently estimated direct losses from chemical releases as being about $1 billion dollars per year. Taking into account indirect losses and losses not covered by insurance companies, the number would be conservatively estimated at least three to four times larger or three to four billion dollars annually.

In order to provide a clear road map for the future, the CSB has developed this Strategic Plan in accordance with the Government Performance and Results Act (GPRA) of 1993. The plan is organized around two overarching goals, a mission goal and an enabling goal. The plan describes expected accomplishments over the next five years, FY 2001 through FY 2005.

Mission Goal

The mission goal focuses on the principal role of the CSB to promote prevention of chemical accidents at fixed facilities.

The CSB accomplishes this goal by:

- Producing timely, high quality investigation reports, recommendations and other technical products;
- Developing effective outreach and partnerships with stakeholders; and
- Developing and implementing a system for chemical accident data collection that can be used to measure prevention effectiveness.

By 2005, the CSB expects to initiate five major accident investigations and one hazard investigation per year. Investigations will benefit from effective coordination and partnering with industry, union, federal, state, and local entities. From these investigations will come reports that contain well-reasoned and precisely targeted recommendations that promote prevention of chemical accidents and worker and public safety. Measuring the results of this mission goal – promoting the prevention of chemical accidents – is a difficult task. The CSB uses intermediate measures such as the adoption of investigation recommendations as an indicator of success.

Enabling Goal

The enabling goal focuses on enhancing the management of CSB and improving the organization effectiveness through workforce planning, hiring and training; cooperative working relationships; and information resource security and management.

The CSB accomplishes this goal by:

- Clearly delineating roles, responsibilities and accountabilities for Board members and staff;
- Developing and implementing administrative and personnel policies including family-friendly policies; and
- Completing organizational, information technology, and physical infrastructure.

The CSB has already taken significant steps in this area in FY 2000 and is committed to steady improvement in the management of its human and fiscal resources. The CSB employees remain highly motivated and committed to the agency's mission. Given adequate resources, the CSB believes it can accomplish its FY 2005 goal of a well-managed and productive agency.

U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

STRATEGIC PLAN

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I. INTRODUCTION

In its third year of operation, the CSB is committed to being a results-based organization that serves the American people and wisely stewards its resources to promote the prevention of chemical accidents at fixed facilities. This Strategic Plan sets the vision and direction for the CSB for the next five years.

Elements of the Strategic Plan

CSB's Strategic Plan contains the following elements: Mission Statement; overarching goals (mission and enabling goals), performance goals and strategies for achieving the goals; a description of how CSB's goals and strategies are to be achieved, including a description of the operational processes, skills and technology, and the human, capital, information, and other resources required to meet those goals and strategies; an identification of those key factors external to the agency and beyond its control that could significantly affect the achievement of the goals and strategies; and a description of the program evaluations used in establishing or revising the goals and strategies. As specified in Section 306 of the Government Performance and Results Act, each long-term goal has up to a five-year timeframe for completion, as well as a quantitative target for the cumulative accomplishment by the final year. The progress toward achievement of the long-term goals will be tracked through annual performance goals for year one (FY 2001) through year five (FY 2005). These one-year targets will be published in the applicable Annual Performance Plans. Each year, progress toward the goals will be reported to Congress and the public through CSB's Annual Performance Report.

How the CSB Will Use the Strategic Plan

The CSB will use this Strategic Plan as a guide in setting priorities, allocating resources and making decisions that produce the specific outcomes identified in the Strategic Plan. It sets the long-term direction and foundation from which day-to-day decisions will be made to move the organization forward. It will provide the long-range targets and outcomes from which annual performance plans will be implemented to make the organization successful.

Organization of the Plan

The first section provides the context of the Plan and the second section reviews the legislative mandate for CSB. This is followed by an overview that highlights CSB's mission, vision, goals, key results, strategies and metrics. Section IV describes each of the performance goals in greater detail. Sections V through VII provide the context and key challenges facing the CSB in achieving the goals. Finally, the last two sections summarize CSB's program evaluations and consultations that are an essential part of the planning process.

II. LEGISLATIVE MANDATES

The U.S. Chemical Safety and Hazard Investigation Board (CSB) is an independent agency created under the Clean Air Act Amendments of 1990. This legislation created an independent safety board to investigate chemical accidents, which cause death, serious injury or substantial property damage, and to recommend measures to prevent the risk of catastrophic events. The record before Congress in 1989 demonstrated that while accident prevention had great promise *"no agency of the United States Government was actively engaged in efforts to prevent chemical accidents . . . "* [Senate Report No. 101-228 (1989); page 143].

Although Congress concluded that there were 14 different agencies engaged in accident prevention-related activities, it determined there was a need to *"improve the effectiveness of accident prevention programs and reduce the burden of duplicative requirements on regulated entities."* (Senate Report 1989) The chemical industry agreed with this finding in hearings before Congress. The industry voiced its support *"for a coordinated Federal approach to accident prevention and suggested that an agency like the Board might most effectively carry out that responsibility."* (Senate Report 1989)

Recognizing the need for a new and focused Federal strategy in lieu of the status quo, Congress modeled the CSB after the highly respected National Transportation Safety Board (NTSB). As defined by Congress, the CSB's mission is to enhance the safety of workers and the public by uncovering the underlying causes of accidental chemical releases at fixed facilities and motivating remedial action by both the private and public sectors. The CSB accomplishes its mission by:

(1) conducting investigations and reporting on findings regarding causes of chemical accidents;
(2) conducting special studies, such as hazard investigations; and
(3) developing, communicating, and advocating recommended actions based on research and investigative findings.

Congress first funded the CSB in November 1997 as an independent agency that would provide a focal point for the Federal Government's effort to prevent major chemical accidents and mitigate their effects if they should occur. The Congress assigned the CSB a separate and distinct mission and authorities from those of regulatory agencies with chemical safety responsibilities, such as EPA and OSHA. OSHA and EPA conduct inspections after chemical accidents to determine compliance with specific regulations. The focus of these inspections is the breach of regulatory compliance, and generally not the root causes of the accident. In most instances, the inspection is generally localized in scope to the noncompliant entity.

The CSB is unique in that its primary focus is conducting investigations to determine the root and contributing causes of chemical accidents for the purpose of making recommendations that may be widely applicable throughout the chemical industry. Recommendations aimed at eliminating the accident's root causes provide information that can help owners, managers, regulators, and workers make more effective contributions to preventing and mitigating all chemical accidents, not just the specific phenomena and specific operational failures which may be particular to that industry segment or facility.

Because the CSB may be involved in the same accident being investigated by regulatory bodies such as EPA and OSHA, it has Memoranda of Understanding (MOUs) with these agencies to address information sharing and to minimize duplication.

III. OVERVIEW OF PLAN

CSB MISSION STATEMENT

THE MISSION OF THE U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD IS TO PROMOTE THE PREVENTION OF MAJOR CHEMICAL ACCIDENTS AT FIXED FACILITIES.

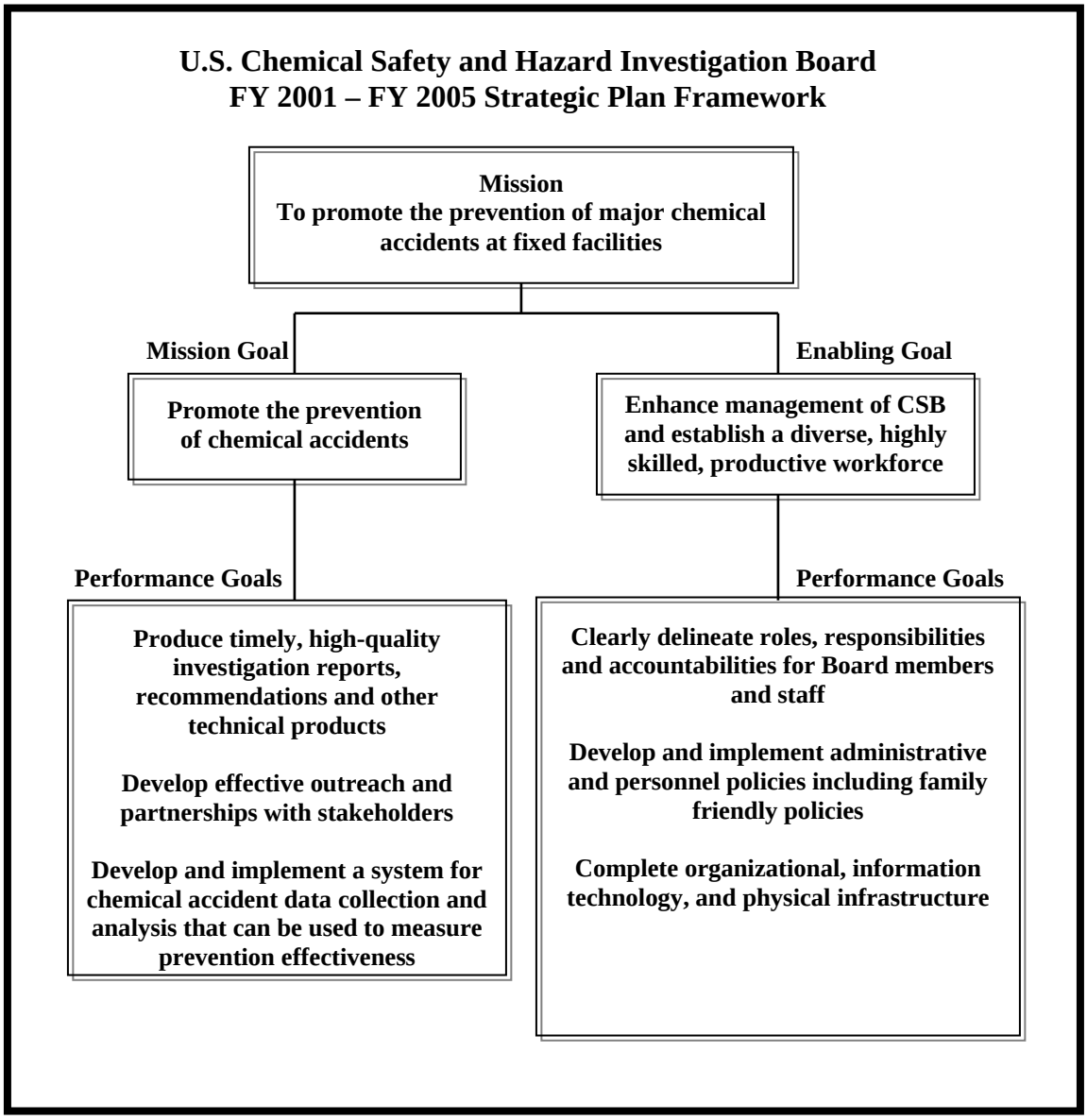
CSB VISION

To achieve the mission, the CSB has established the following vision of the organization for 2005:

- **Produce an average of five accident investigation reports and one hazard investigation report each year.**
- **Have an effective recommendations program.**
- **Have a diverse, highly trained, productive workforce committed to continuous improvement and prevention of chemical accidents.**
- **Have an effective five-member Board providing strategic direction and oversight.**
- **Have shared commitment with key stakeholders and customers on CSB mission, vision and goals.**
- **Have well-established public and private partnerships.**
- **Maintain a publicly accessible data system on chemical accidents.**

SUMMARY OF FY 2001 – FY 2005 STRATEGIC PLAN FRAMEWORK

The following figure shows the overarching goals and the performance goals for FY 2001 – FY 2005.



MISSION GOAL

1.0 PROMOTE PREVENTION OF CHEMICAL ACCIDENTS

The performance goals relative to this mission goal that the CSB has set for achievement by FY 2005 are:

1.1 Produce timely, high-quality investigation reports, recommendations and other technical products.

1.2 Develop effective outreach and partnerships with stakeholders.

1.3 Develop and implement a system for chemical accident data collection and analysis that can be used to measure prevention effectiveness.

ENABLING GOAL

2.0 ENHANCE MANAGEMENT OF CSB AND ESTABLISH A DIVERSE, HIGHLY SKILLED, PRODUCTIVE WORKFORCE

The performance goals relative to this enabling goal that the CSB has set for achievement by year five of its Strategic Plan are:

2.1 Clearly delineate roles, responsibilities and accountabilities for Board members and staff.

2.2 Develop and implement administrative and personnel policies including family friendly policies.

2.3 Complete organizational, information technology, and physical infrastructure.

MISSION GOAL

1.0 PROMOTE PREVENTION OF CHEMICAL ACCIDENTS

PERFORMANCE GOAL

1.1 Produce timely, high-quality investigation reports, recommendations and other technical products

KEY RESULTS

1.1.1 Five major accident investigations initiated per year by FY 2005.
1.1.2 At least one hazard investigation report completed and released per year.
1.1.3 Effective coordination of industry, labor, federal, state, and local entities in the conduct of investigations.
1.1.4 Implementation of the majority of the CSB's recommendations.

KEY STRATEGIES (Resources, Skills and Technology Needed)

- Develop a team of highly skilled investigations and safety staff.
- Develop and implement a training program for staff.
- Develop and implement CSB recommendations program.
- Implement and update Investigation Protocol and Accident Selection Procedures as needed.
- Develop partnerships with public and private entities to improve the efficiency and effectiveness of chemical accident investigations.
- Build and maintain effective partnerships with stakeholder groups and representatives to achieve implementation of accident investigation recommendations.

METRICS

- Number of accident investigations initiated and reports issued each year.
- Number of hazard investigations initiated and completed each fiscal year.
- Data from surveys, questionnaires and documented interviews of cooperating agencies such as EPA, OSHA, and NTSB on effectiveness of coordination effects in the conduct of each investigation.
- Data on number of safety recommendations adopted.
- Surveys and data analyses on the effectiveness of CSB's recommendations.

MISSION GOAL

1.0 PROMOTE PREVENTION OF CHEMICAL ACCIDENTS

PERFORMANCE GOAL

1.2 Develop effective outreach and partnerships with stakeholders

KEY RESULTS

1.2.1 National recognition for taking steps that contribute to the prevention of chemical accidents.

1.2.2 Partnerships with stakeholders which promote the prevention of chemical accidents.

1.2.3 Wide distribution of CSB's papers and publications.

KEY STRATEGIES (Resources, Skills and Technology Needed)

- Build awareness of safety issues with timely safety alerts.
- Develop effective outreach plan for each investigation report and recommendations, as appropriate.
- Develop, implement and evaluate targeted outreach strategy for each stakeholder group.
- Participate in professional safety organizations in the development of safety guidelines, standards and regulations.
- Participate in, sponsor and plan conferences, symposiums and other actions that promote the prevention of chemical accidents.
- Publish papers and articles in journals that promote actions, which prevent chemical accidents.

METRICS

- Number of partnership plans with stakeholders on dissemination of accident prevention information and safety alert information.
- Data from surveys and documented interviews of stakeholders on effectiveness of outreach efforts.

MISSION GOAL

1.0 PROMOTE PREVENTION OF CHEMICAL ACCIDENTS

PERFORMANCE GOAL

1.3 Implement a system for chemical accident data collection and analysis that can be used to measure prevention effectiveness

KEY RESULTS

1.3.1 Stakeholder consensus on key metrics, methodologies and requirements for chemical accident data collection and analysis.

1.3.2 Development and implementation of publicly accessible system that can be used to measure prevention effectiveness.

KEY STRATEGIES (Resources, Skills and Technology Needed)

- Hire project leader to develop the design of the system.
- Develop a framework for chemical accident data collection and analysis (scope, definitions, etc.).
- Solicit Congressional support and funding for development of the data system (FY 2002-2005).
- Evaluate current accident reporting requirements and databases in regard to CSB and stakeholder needs.
- Solicit and maintain stakeholder involvement in the development and maintenance of the system.

METRICS

- Development of framework and design of system.
- Determination of data requirements for systems through survey of affected stakeholders.
- Determination of appropriate performance indicators that will measure prevention effectiveness through outreach with stakeholders (surveys, questionnaires, documented interviews and planning meetings with stakeholders).
- Implementation of system with appropriate performance indicators underway

ENABLING GOAL

2.0 ENHANCE MANAGEMENT OF CSB AND ESTABLISH A DIVERSE, HIGHLY SKILLED, PRODUCTIVE WORKFORCE

PERFORMANCE GOALS

2.1 Clearly delineate roles, responsibilities and accountabilities for Board members and staff
2.2 Develop and implement administrative and personnel policies including family friendly policies
2.3 Complete organizational, information technology, and physical infrastructure

KEY RESULTS

Efforts are underway in each of the performance goal areas addressed above; the key results will be the completion of each of the performance goals.

KEY STRATEGIES (Resources, Skills and Technology Needed)

- Establish organization structure and document operating structure and procedures.
- Implement orders on responsibilities and accountability for Board members.
- Develop and implement administrative and personnel policies and regulations like the Board orders. Implement recommendations resulting from institutional oversight of CSB.
- Hire a highly productive, diverse team-oriented staff to accomplish mission.
- Develop comprehensive training program.
- Evaluate physical and information technology infrastructure requirements annually.

METRICS

- Total personnel on board consistent with each year's annual performance staffing plan.
- Position descriptions for all employees.
- Performance appraisals on a regular basis.
- Board and Board member policies established in a timely manner.
- Annual performance plans and performance reports submitted in a timely manner.
- Training and individual development plans for all employees.
- Space acquisitions consistent with the number of employees.

IV. GOAL DISCUSSION

1.0 PROMOTE PREVENTION OF CHEMICAL ACCIDENTS

The CSB promotes prevention through the following.

Performance Goals:

1.1 Producing timely, high-quality investigation reports, recommendations and other technical products.

1.2 Developing effective outreach and partnerships with stakeholders.

1.3 Developing and implementing a system for chemical accident data collection that can be used to measure prevention effectiveness.

1.1 Produce timely investigation reports, recommendations and other technical products

Goal Description

The CSB investigates chemical releases resulting in a fatality, serious injury or substantial property damage at a fixed facility. These investigations often involve extensive site visits, evidence collection, and analytical work. Resource constraints prevent the CSB from investigating more than a small fraction of the accidents that fall within its purview. The Clean Air Act Amendments of 1990, which created the CSB, places special emphasis on accidents that affect or have the potential to affect the public. The law calls for CSB to directly investigate any accident where a member of the public is killed or seriously injured or where the accident had the potential to cause substantial property damage or a number of deaths or injuries among the general public.

Seven Were Killed, 15 injured in this fire at the Thai Oil Refinery

While the magnitude of the accidental chemical release problem is not yet well defined, more than 100 accidents are reported annually in which an accidental chemical release results in: one or more deaths, injuries/hospitalizations, evacuation/sheltering in place of citizens, or significant property damage.

To investigate a substantial portion of those mandated accidents would either exceed the limited resources of the CSB or so subdivide the resources as to result in superficial

investigations that are unlikely to establish the root causes of the accident. Investigations that are less than comprehensive are not able to adequately determine root causes or make recommendations that would have significant prevention impact.

Accordingly, the Board has established a set of criteria to aid in selecting accidents at fixed facilities for investigations. The selection process has two phases of evaluation. In the initial evaluation, primary weight is given to the actual and potential consequences of an accident. Consequences are given a specific score that serves to flag an accident for consideration. In the second phase of evaluation, the decision to launch an investigation is made, based on a broader assessment of such factors as community impact and learning potential. By making use of these selection criteria, the Board's investigation reports offer the maximum possible benefits in preventing future accidents.

Baseline Statistics

In FY 1998 (the first year of the CSB's operation) and FY 1999, the CSB issued one and two accident investigation reports respectively. In FY 2000 the CSB has used a team investigation model and has issued one report and expects to issue an additional two reports by the end of the calendar year.

Key Results

The long-term goals/results relative to this mission goal that the CSB has set for achievement by year five of its Strategic Plan are:

- Five major accident investigations initiated per year by FY 2005
- At least one hazard investigation report completed and released per year
- Effective coordination of industry, labor, federal, state, and local entities in the conduct of investigations

1.1.1 Five major accident investigations initiated per year by FY 2005

A CSB investigation incorporates not only in a causal analysis but also recommendations that seek to rectify the safety failures identified. These investigations, which are labor- and time-intensive, result in reports which are disseminated to a wide range of stakeholders including the chemical industry, professional organizations, academia, trade associations, labor unions, and Federal and State agencies. The CSB's investigation recommendations demand high levels of analytical and technical research because they potentially can affect a wide range of entities and economic activities, potentially having a greater impact than

A CSB Investigation team and company officials examine an explosion and fire scene at an oil processing facility in remote Pitkin, Louisiana

an enforcement action or a company-specific recommendation from a regulatory agency. Based on its experience and the need to discharge its other responsibilities, the CSB believes that it can initiate five full investigations annually by year five of the Strategic Plan.

1.1.2 At least one hazard investigation report completed and released per year

Hazard investigations are special studies into accident causes and methods of preventing or reducing the severity of chemical accidents. Unlike the investigation of a particular incident, the CSB hazard investigation may examine a series of related incidents to identify common incident causes and make recommendations for prevention. These investigations produce reports and, where appropriate, recommendations to stakeholders.

Baseline Statistics

In FY 1999, the CSB issued a report on potential Y2K problems among chemical manufacturers, handlers and users to the Senate Special Committee on the Year 2000 Technology Problem. In FY 2000, the CSB initiated a reactive chemical process safety effort.

1.1.3 Effective coordination of industry, union, federal, state, and local entities in the conduct of investigations

A major factor in the successful conduct of investigations is the effective coordination of industry, union, federal, state, and local entities. The CSB differs from most other government agencies that promote chemical safety and health in that it does not function as a regulatory body. Instead, the CSB is intended to contribute to safety by making specific safety recommendations to businesses and government agencies and by serving as a creator and conduit of chemical safety information and data. It works in concert with safety professionals in the public and private sectors in the conduct of the investigation; by sharing in lab results and metallurgical studies with regulatory agencies such as OSHA and EPA; by participating in joint evidence gathering and preservation; and by assisting in site control with these agencies.

1.1.4 Implementation of the majority of the CSB's recommendations

The CSB's short history demonstrates that investigation report recommendations are better received and produce greater results when based on fully-researched findings of well-documented and comprehensive causal investigations. As referenced earlier, these are time and resource intensive. While the CSB has not produced a great number of

reports in its short history, it has had significant successes with the implementation of recommendations on the reports issued.

The four completed accident investigation reports have been praised for their scientific correctness, their readability and usability, and the applicability and practicality of their safety recommendations. Specifically, there has been acceptance and use of the safety recommendations by state governors, legislators, trade associations, companies, and emergency responders, to name a few.
Each report has had a tangible impact, because one or more recommendations in the report have been accepted and implemented. In many other cases, the reports have spawned educational efforts by other organizations to enhance the safety awareness of specific audiences.

Program Evaluations

There have been two General Accounting Office (GAO) evaluations of the CSB investigation program as shown below.

- Status of Implementation Effort, GAO/T-RCED-99-167. This evaluation addressed the CSB's budget request for fiscal year 2000 in three areas, one of which was investigations and recommendations. The GAO found that the CSB had an unanticipated backlog of ongoing investigations. The GAO made no recommendations but commented that *"Critical to any effective plan for addressing this backlog is an examination of how the Board chooses cases to investigate and how it allocates its existing and future resources."* The CSB acted on this comment in FY 2000 by issuing a Process for Selecting Accident Investigations which is now being utilized by the staff. The CSB has addressed the resource issue in this Strategic Plan by the allocation of the majority of its funding (82 percent) to investigation and prevention activities. See Appendix A for details concerning the FY 2001 CSB budget allocation by strategic goals. However, the level of implementation success is dependent on the funding of the CSB over the next five years.

- Chemical Safety Board: Improved Policies and Additional Oversight Are Needed, GAO/RCED-00-19. The report recommended that the CSB develop and implement clear policies and procedures in the investigation protocol to further ensure impartiality and thoroughness. In response to this recommendation, the CSB developed an investigation protocol in late 1999 and more recently has initiated additional expert analysis to further enhance the protocol. The CSB projects implementation of the revised Investigation Protocol in FY 2001.

1.2 Develop effective outreach and partnerships with stakeholders

Goal Description

The purpose of the CSB's investigation of accidents is to prevent future similar events. This mission is accomplished through effective outreach and partnerships with its stakeholders since the CSB has no enforcement powers. CSB investigations must, therefore, generate findings and recommendations that influence and/or teach responsible parties to improve designs, operations, or practices in order to prevent future similar accidents.

CSB recommendations may be issued to stakeholders such as chemical firms, equipment suppliers, contractors, insurance companies, local authorities, trade associations, or unions as well as regulatory agencies. The EPA and OSHA are required to inform the CSB how they intend to respond to CSB recommendations. Other stakeholders have no such legal obligation.

The ability to influence relevant parties depends on:

- How well the CSB develops and presents its findings and recommendations.
- How seriously the affected stakeholders view the accident in question.

Baseline Statistics

The CSB has determined through surveys and interviews that 85 percent of its recommendations from previous reports have been adopted or closed-out or acceptable progress is being made in implementing the recommendations.

In addition to accident report recommendations and findings, the CSB promotes prevention through its outreach activities with its stakeholders (industry, labor, citizen groups, emergency responders, and government agencies) and other partners in chemical safety (academia, professional societies and trade associations), the international community, the media and the general public. Relationship development and two-way communication are crucial to delivering accident prevention information along with keeping abreast of technology, safety systems development, and public concerns.

Key Results

The long-term goals/results relative to this mission goal that the CSB has set for achievement by year five of its Strategic Plan are:

- National recognition for taking steps that contribute to the prevention of chemical accidents
- Partnerships with stakeholders which promote prevention of chemical accidents
- Wide distribution of CSB papers/publications

1.2.1 National recognition for taking steps that contribute to the prevention of chemical accidents

Congress directed the CSB to use its unique authorities to provide insight to regulatory agencies and to other business and government interests on trends and opportunities in chemical safety, stimulating continuous improvement in their chemical accident prevention efforts. The CSB was envisioned as a catalyst for improving the performance of the government and business chemical safety initiatives through eliminating duplication and facilitating exchange of safety related research and technology.

The CSB is committed to using the best scientific and technical data available in making recommendations and sharing information with its partners, directly and through the media. Through these mechanisms, the CSB believes it can attain its long-term goal of national recognition in chemical accident prevention. Like the other long-term goals in the Strategic Plan, the CSB has set up annual performance goals to meet this long-term objective such as developing and implementing outreach plans on all investigations/recommendations to stakeholders who can effect change, developing and implementing partnership plans with individual stakeholders for dissemination of accident prevention information, and issuing timely safety alerts as appropriate on current investigations.

1.2.2 Partnerships with stakeholders which promote prevention of chemical accidents

An important element to the success of CSB's prevention mission is its partnership activities with stakeholders. Although the CSB makes recommendations on chemical safety, only such stakeholders as industry, trade unions, trade associations and regulatory bodies (local, federal, and state) can ensure the implementation of these recommendations. Other stakeholders, like academic and professional organizations, can support and influence the implementation of recommendations. Therefore, effective partnerships with these stakeholders are an important component of CSB's success in promoting prevention of chemical accidents.

To facilitate these partnership activities, CSB

- Conducts public meetings to inform citizens of its prevention activities and the conclusion/recommendations on accident and hazard investigations

- Holds roundtables with all its stakeholders to discuss common activities and to build coalitions on common concerns

- Conducts individual meetings with academia, industry, pro associations, union and regulatory bodies to discuss ways i can support CSB recommendations and partner with CSB

A Standing Room only audience in the Patterson, New Jersey City Council chambers for the CSB's Public Review of Findings concerning the Morton Specialty Chemical Explosion and Fire Investigation.

Appendix B is a listing of the partnership activities in which the CSB participated in FY 2000.

1.2.3 Wide distribution of CSB's papers/publications

The CSB's website has proven to be an important avenue for reaching a large and diverse public audience. There are few, if any, websites devoted solely to providing information on chemical accidents and chemical accident prevention. In 1999 *Government Executive* magazine named the site one of the 16 best federal websites.

The CSB has used its website extensively to distribute its papers and publications in the promotion of chemical accident prevention. The CSB website is intended to serve as a virtual library on chemical safety, which safety experts and others can consult on a broad range of issues, from the general to very specific technical works. The CSB updates the site regularly with new information on chemical accidents, chemical safety publications from various sources, investigation news, links to other sites with chemical safety information, and events related to chemical safety.

CSB also discusses and distributes its papers through its stakeholder outreach activities and through trade, professional and union association publications.

Program Evaluation

There have been no evaluations related to this goal area.

1.3 Implement a system for chemical accident data collection and analysis that can be used to measure prevention effectiveness

Goal Description

The Strategic Plan is addressing the prevention metrics issue through the development of a system for data collection and analysis. In the interim, before the system is developed and goes on-line, the CSB plans to use surveys and interviews with stakeholders extensively to track its progress in accomplishing the long-term goals. By FY 2005, the CSB anticipates that it will have in place a publicly accessible data collection and analysis system that can be used to measure prevention effectiveness. In

order to achieve this goal, the CSB must be able to achieve stakeholder consensus on key metrics, methodologies and requirements for chemical accident data collection and analysis.

The CSB plans to hire a project leader for this initiative in FY 2001 to manage the five-year design and development of the system. The project leader's primary charges in FY 2001 will be to work with CSB stakeholders in proposing a framework for the system. During the out-years of the plan, the CSB will work with its stakeholders in the development of the data requirements, in the assimilation of existing data, in the completion of the data system requirements and in the implementation of the data system.

Baseline Statistics

Unfortunately, while multiple databases exist on a variety of different types of accidental releases there is no accepted measure of the frequency of chemical accidents that are within the purview of the CSB. In addition, there is currently no way of estimating the CSB's contribution to any reductions in accident frequency that might be achieved. In 1998, the CSB initiated a baseline study of reported commercial incidents occurring within the United States over a ten-year period (1987 through 1996) in order to identify trends. The CSB compiled and used existing data from five federal databases. Key elements from these five databases were merged into a composite database to conduct this study. It was the CSB's first step in attempting to understand what information is currently available. The CSB is currently in the process of evaluating this data.

Key Results

The five-year goals related to this mission goal are:

- Stakeholder consensus on key metrics, methodologies and requirements for chemical accident data collection and analysis;

- Development and implementation of a publicly accessible system that can be used to measure prevention effectiveness.

Program Evaluations

- House Committee Conference Report on the CSB's FY 2000 Appropriation. The Appropriation Act on the FY 2000 budget directed the CSB to reduce its expenditures on Information Technology. A substantial portion of the funding about which Congress was concerned was spent in the development of databases that lacked Board member oversight, staff consensus or stakeholder input. The CSB responded to this directive by substantially redirecting the funding of those database projects and substantially reducing its spending in Information Technology as discussed under Enabling Goal 2. The CSB is sensitive to the concerns raised by Congress on spending levels for Information Technology. The CSB is also aware of the need to determine its effectiveness in promoting

the prevention of chemical accidents, the purpose for which it was established. With that in mind, the CSB is working with staff and stakeholders to develop key metrics, methodologies and requirements for a database that can be used expressly for the mission of prevention.

2.0 ENHANCE MANAGEMENT OF CSB AND ESTABLISH A DIVERSE, HIGHLY SKILLED, PRODUCTIVE WORKFORCE

The five-year performance goals related to this enabling goal are:

2.1 Clearly delineate roles, responsibilities and accountabilities for Board members and staff.

2.2 Develop and implement administrative and personnel policies including family friendly policies.

2.3 Complete organizational, information technology, and physical infrastructure.

Goal Description

The CSB began operations in November 1998 as a new federal entity, without transference of staff and infrastructure from an existing federal agency. An earlier business plan anticipated a three-year start up period. The CSB underestimated the size of this task and limited resources have been available for establishing the needed infrastructure. As a result, the CSB may not reach full operational capacity until FY 2005. The CSB staff will have to promulgate proposed final regulations, continue entering into interagency memoranda of understanding (MOU), develop and finalize internal operating procedures, and conduct strategic planning for future program emphasis and resource requirements. The CSB will continue to focus its attention on personnel management, particularly in the hiring and training of investigation and safety program staff. The hiring and training activities will continue into the out-years of the Strategic Plan, and will affect the expected workload in the investigation and related activities function.

Effective organization management and internal processes are essential for achieving CSB's mission. The challenge is to determine decision-support approaches that best fit CSB's unique mission, stakeholders, and resources. These decision-support systems involve participation in effective partnerships with stakeholders that will enable the CSB to utilize its limited resources in the most effective manner. Over the past two years the CSB has developed MOUs and formed partnerships to facilitate and promote its various program activities.

Prevention of chemical accidents requires the careful application of resources to the conduct of quality scientific investigations, formulation of sound safety recommendations, and effective advocacy in support of them.

Performance goals under this strategic goal include clearly delineating the roles and responsibilities of staff, attracting and keeping the best and brightest employees, developing appropriate personnel polices, promulgating federally required administrative regulations, and completing the physical infrastructure.

2.1 Clearly delineate roles, responsibilities and accountabilities for Board members and staff

This workforce planning process involves developing an organizational structure that reflects the CSB's mission and accomplishes CSB's long-term performance goals. Defining and formalizing the roles, responsibilities and accountabilities of staff and Board members is an essential step for ensuring the success of the CSB. The CSB already has in place several orders relative to Board members' responsibilities such as the Board Quorum and Voting Procedures and Interim Board Operating Procedures. Others are under development and will be implemented in FY 2001. The CSB is in the process of revising its position descriptions for its new organization structure to be implemented in FY 2001. These position descriptions will be written to clearly describe the roles and responsibilities of staff.

CSB's Strategic Planning Team develop the agency's FY 2001-FY 2005 Strategic Plan

2.2 Develop and implement administrative and personnel policies including family friendly policies

The CSB has already developed many of the personnel policies required by OPM such as Absence and Leave Policy, Performance Appraisal Program, and Incentive Awards. The CSB has also developed an Equal Employment Opportunity policy and is implementing an EEO program. During FY 2001, the CSB will continue developing and implementing required policies as well as family friendly policies. This includes development of policies on recommendations from the institutional oversight of CSB.

2.3 Complete organizational, information technology, and physical infrastructure

This goal involves hiring a highly productive, diverse team oriented staff to accomplish the mission. The CSB has developed a hiring strategy to meet its goal of five investigations initiated and completed annually by FY 2005. The hiring strategy is dependent on funding increases over the next several years as managers identify skill needs and evaluate alternative possibilities for acquiring these skills, including contracting and term appointments. Managers will also be focusing on good management practices that encourage teamwork and the consensus approach to decision making.

Training (both formal and on-the-job) is essential to the development of a skilled, proficient staff who can carry out line and support programs related to the mission of the CSB. The CSB will be implementing its agency-wide staff-training program in FY 2001, consistent with its development of a personnel infrastructure to support the mission of the CSB.

As information systems are an integral part of today's business processes, information reliability and security are very important for an agency like the CSB. This goal involves the following key security and control areas: evaluating and improving information resources and security; training on the information systems' resources and audit functions.

This goal also involves defining and developing the space and resource requirements of the CSB commensurate with its hiring strategy and its budget allocations over the next five years.

Program Evaluations

- Status of Implementation Efforts, GAO/T-RCED-99-167. In this report, the GAO commented that the CSB had not instituted formal, written procedures for its staff to follow in managing and awarding contracts. In response to this concern, the CSB issued formal written procedures for awarding and managing contracts in December 1999.

- Report to Congressional Requesters on the CSB's Management Problems, GAO/RCED-00-19. This GAO report recommended that the CSB "*develop an agreement with an existing Office of Inspector General to investigate the Board's operations and programs and monitor and report on the Board's progress in improving its organizational effectiveness.*" The CSB sought assistance from the Offices of Inspector General for the Departments of Energy and Treasury. To date, efforts to develop such an agreement have been unsuccessful. The CSB is in the process of identifying an Inspector General who is willing to take on this responsibility.

- House Committee Conference Report on the CSB's FY 2000 Appropriation. The Appropriation Act on the CSB's FY 2000 budget directed the CSB to spend

the preponderance of its resources on investigations and safety rather than on information technology. In response to this directive, the CSB reduced its FY 2000 information technology budget substantially, reallocating approximately 70 percent of its total funding in this area to investigations and safety. In the CSB's FY 2001 budget, it anticipates a similar reduction in its spending level on information technology.

V. KEY FACTORS AFFECTING GOAL ACHIEVEMENT

Goal 1 – Promotion of prevention

- A major catastrophic accident could occur without CSB having the resources to respond. The CSB is building a good working relationship with NTSB and other governmental agencies as potential sources on which to draw, in the event of an unanticipated investigation drain of available funding and expertise. The CSB is also working with a broader base of expert contract support for current investigation and safety work that will better enable the agency in the event of a very large catastrophic accident.

- Level of cooperation in on-going accident investigations, changes in regulation or policy, development of new national initiatives, and level of interest and involvement of stakeholders could have major influences on the effectiveness of the CSB in promoting the prevention of chemical accidents.

- CSB coordinates its activities with a diverse set of external stakeholders who could disagree on the goals/strategies of the CSB to promote prevention.

- Congressional support and funding for outreach efforts could decrease if CSB is unable to demonstrate tangible results in fiscal year cycles.

- Data system development may be delayed or undermined by (1) the inability to gain consensus from stakeholders on key requirements and metrics and (2) stakeholder opposition to what may be perceived as "another data reporting burden."

Goal 2 – Management and Organizational Structure

- This goal assumes funding and staffing increases over the next five years. Significant funding increases or decreases may raise or lower the ability of the CSB to achieve this enabling goal.

- This goal assumes a stable workforce and the appointment of a chairperson to the Board. As a relatively small agency, significant turnover in professional and support staff, managers and Board members will erode the CSB's ability to accomplish this goal.

VI. MANAGEMENT CHALLENGES AND OPPORTUNITIES

Recruitment of qualified applicants

Recruiting and hiring qualified investigations and safety programs staff remains one of the Board's most difficult challenges. The small talent pool available for the Board's investigations and safety recruitment needs is primarily found in the chemical process and oil industries. These potential recruits are highly paid and typically live in areas located far from Washington, DC. The Board, therefore, must now devote extensive time and resources to recruit in order to hire and retain staff with chemical-process safety expertise.

This challenge directly impacts the CSB's effectiveness in (1) performing its primary mission of promoting the prevention of chemical accidents and (2) in addressing concerns raised by Congress on the CSB's productivity and effectiveness.

The CSB has developed a strategic hiring plan for recruitment of qualified applicants and has had recent successes in finding experienced candidates willing to relocate to the Washington area. The CSB expects its applicant pool to increase with the chemical industry's downsizing and merger activities. Since March 2000, the CSB has received approximately 600 applications, following a new series of job advertisements.

Goverance Issues

The CSB has functioned without a Chief Executive Officer (CEO) and Chairperson since the first chairperson stepped down from that position in January 2000. The authorizing statute provides for five Board members including a chairperson, each appointed by the President. The CSB currently has four Board members with the position of chairperson vacant. The CSB is now run by the Board members collectively, using majority voting rules. In June 2000, the Office of Legal Counsel of the U.S. Department of Justice issued a decision concerning the governance of the CSB. The Acting Assistant Attorney General confirmed that the CSB, like all other similar multi-member federal agencies, is governed by majority vote.

Disagreements between three of the Board members and the former chairperson have generated negative media coverage and have raised questions concerning the Board's management of the CSB. The CSB is addressing these concerns, in part through the development and implementation of this Five-Year Strategic Plan that focuses on measurable performance activities and target dates for accomplishment of these activities.

The CSB continues to have broad-based stakeholder support as demonstrated by public statements from such constituents as the American Petroleum Institute, the American Chemistry Council, the National Association of Chemical Distributors, the Chlorine Institute, the International Union of Operating Engineers, the Environmental Defense Fund and the Working Group on Community Right to Know. This support was further demonstrated by a recent stakeholder meeting, well attended by key players in chemical accident prevention.

Although the CSB has received stakeholder support, it has been accompanied by concerns about the Board's ability to move beyond its governance disputes and to refocus its energies on its mission. Congress has raised similar concerns.

The CSB plans to address these concerns by placing its highest priority on completing investigations and issuing safety recommendations and through the development of coalitions and partnerships with its key stakeholders to facilitate accident prevention. Another avenue is the completion of the CSB personnel infrastructure through a recruitment strategy, which targets the hiring of talented, highly skilled staff to carry out the mission and through a personnel plan, which focuses on the maintenance of a stable workforce.

VII. CROSSCUTTING RELATIONSHIPS TO OTHER BUREAUS AND AGENCIES

- The CSB works closely with EPA and OSHA on accident investigations to minimize duplication of activities. As referenced earlier, this is accomplished through sharing of chemical and metallurgical laboratory test results, coordinating accident site control and insuring evidence preservation.

- The CSB has Memoranda of Understandings (MOUs) with EPA and OSHA addressing coordination of investigation activities and minimization of potential areas of duplication. The CSB is in the process of completing an MOU with the NTSB (which should be finalized in FY 2001) concerning the same issues. By early FY 2001, the CSB expects to finalize an MOU with the Agency for Toxic Substances and Disease Registry (ATSDR) for consultation on human health impacts of chemical exposures.

- The EPA and OSHA are partners with CSB in data collection and analysis since both agencies have similar data collection and analysis needs.

- The CSB is working with OSHA, EPA and NTSB in strategic planning and GPRA activities relating to defined roles and contributions in promoting the prevention of chemical accidents at fixed facilities. Efforts will continue in this area.

VIII. PROGRAM EVALUATIONS

The CSB plans to implement an active evaluation and review program in FY 2001. The goals of CSB's review program are to:

- Increase CSB's success in mission accomplishment and meeting its performance goals, stakeholder requirements, and fiscal responsibilities;

- Help managers and staff improve their work processes, functions, and programs;
- Align programs and resources and protect from waste, fraud, and mismanagement;

- Ensure compliance with the Federal Managers' Financial Integrity Act (FMFIA) standards and guidelines and GPRA requirements to verify and validate actual performance.

The CSB will utilize three methods for evaluations and reviews by:

- Self-Assessment: CSB will monitor and continuously improve its work processes, functions, and program results through data collection, analysis and targeted solutions.

- Assessment by Key Stakeholders: Stakeholders will assess the effectiveness of the CSB through questionnaires, surveys and interviews, following (1) completion of key assignments, (2) public hearings, (3) public meetings, and (4) roundtables. The results of this information will identify the strengths and weaknesses of the programs and the areas to target for improvements.

- Independent Assessment by External Parties: In February 2000, the CSB contracted with Cotton and Cotton LLP to conduct a financial management review. Results from assessments of this nature will provide an independent analysis of programs and activities to determine material weaknesses and to make areas for improvements.

IX. CONSULTATIONS

Within the past year, the CSB has devoted significant time and attention to aligning the performance of its staff and Board with CSB's mission to promote prevention of future chemical accidents. The Board and staff participated in a comprehensive, structured strategic planning process involving collaboration with all staff in retreats, interviews, and all hands meetings.

Furthermore, the CSB also conducted extensive outreach activities with key stakeholders to solicit input and feedback from professionals working in the fields most impacted by CSB's activities. Outreach and coordination included:

- Presentations by Board members at scientific, industry trade association and labor union meetings,
- Periodic public meetings with the entire range of stakeholders,
- Discussions with key Congressional staff, and
- A Strategic Planning Stakeholder Roundtable.

In many of these discussions, Congressional staff and others suggested that the key activities of the CSB be merged under a single Mission Goal to promote the prevention of chemical accidents. This recommendation has been incorporated into the CSB's

Strategic Plan. Other recommendations from stakeholders led to the reordering of strategies and key results within each goal.

One consistent theme from all stakeholders was the essential nature of partnerships and outreach to the agency's successful mission accomplishment. As a result, the Strategic Planning process itself helped to assure that the CSB continues to be inclusive, accountable and responsive to all who have a stake in the prevention of chemical accidents.

APPENDICES

APPENDIX A

BUDGET ALLOCATIONS BY STRATEGIC GOALS*
Fiscal Year 2001

Office	FY 2001 Budget	Goal 1	Goal 2	% Of Total
Board Members	$ 838,337	$ 631,965	$ 206,372	11.2%
Chief Operating Officer	436,216	191,752	244,464	5.8%
External Relations	306,395	282,530	23,865	4.1%
General Counsel	481,324	433,192	48,132	6.4%
Management Operations	1,841,069	1,424,957	416,112	24.5%
Financial Operations	400,426	173,228	227,198	5.3%
Investigations & Safety Programs	3,033,133	2,891,479	141,654	40.5%
Equal Employment Office	163,100	-	163,100	2.2%
Total	**$ 7,500,000**	**$ 6,029,103**	**$ 1,470,897**	**100.0%**

* Revised to reflect the$7.5 million appropriation for fiscal year 2001.

APPENDIX B

STAKEHOLDER OUTREACH ACTIVITIES IN FY 2000

Consultations

CSB Stakeholder Roundtable on the FY 2001 – FY 2005 Strategic Plan and Incident Selection Criteria Presented by CSB to Industry, Labor Unions, Trade Associations, Federal Agencies with cross-cutting functions, the Office of Management and Budget (OMB), Professional Associations, Academia and Environmental Groups to obtain input on both documents, Washington, DC, July 25, 2000.

Meeting with Senate Staffer on the FY 2001 – FY 2005 Strategic Plan to obtain input on the CSB's goals and strategies for the upcoming five years, Washington, DC, August 14, 2000.

Chemical Release Prevention Initiative Meeting by the National Safety Council, Washington, DC, October 6, 1999

Presentations

Chemical Safety Board: Morton Investigation and Beyond. Presented with Dave Heller at the Synthetic Organic Chemical Manufacturers Association's Employee and Process Safety Committee, Washington, DC, August 24, 2000

Chemical Safety Program Assessment (Steering and Advisory Committee). Mary Kay O'Connor Process Safety Center, Texas A&M University, Freeport, TX, June 13-14 and August 7-8, 2000.

Chemical Safety Board: Investigation Outlook Through 2001. Presented at the Texas Chemical Council - Safety Seminar, Galveston, TX, June 22, 2000

Chemical Safety Board: Investigation Outlook Through 2001. Presented at the Technical Steering Committee, Center for Chemical Process Safety, American Institute of Chemical Engineers, Montreal, Canada, May 16, 2000

Chemical Safety Board: Our Vision for Surveillance. Presented to the Responsible Care ® Conference, Orlando, FL, May 2, 2000

Chemical Safety Board: Outlook Through 2001. Presented to the American Society of Safety Engineers, Washington, DC, April 4, 2000

Chemical Safety Board: Outlook Through 2001. Presented to the Working Group on Community Right-To-Know and U.S. Public Interest Research Group, Washington, DC, April 4, 2000

Propane Tank Explosion Resulting in Fire Fighter Fatalities / Herrig Bros. Farm Investigation. HAZMAT 2000, U.S. EPA Spills Prevention Conference, St. Louis, MO, April 5, 2000

Chemical Safety Board: Investigation Outlook Through 2001. Presented to the Citgo Petroleum Corporation Safety Seminar, Houston, TX, March 22, 2000

Chemical Safety Board: Outlook Through 2001. Presented to the Chemical Manufacturers'Association, Plant Operations Safety Workgroup, Rosslyn, VA, February 16, 2000

Chemical Safety Board: Outlook Through 2001. Presented to the National Association of Chemical Distributers, Board of Directors, Rosslyn, VA, February 16, 2000

Chemical Accident Prevention: The U.S. Chemical Safety and Hazard Investigation Board. Presented to the AFL-CIO Health and Safety Conference, Chemical Accident Prevention Workshop, New Orleans, LA, December 13 - 15, 1999.

Chemical Accident Prevention: New Initiatives. Presented to the National Environmental Justice Advisory Council, Health and Research Subcommittee, Crystal City, VA, December 1, 1999

The New Chemical Safety Board: Inter-agency Cooperation for Chemical Incident Prevention. Presented to U.S. EPA Criminal Investigation Division, Simultaneous Criminal and Safety Investigations Meeting, Washington, DC, December 1, 1999

The Year 2000 Technology Problem and Chemical Safety: Prevention Recommendations. Presented to the Federal Bar Association Luncheon Seminar, Washington, DC, September 30, 1999.

The U.S. Chemical Safety and Hazard Investigation Board. Presented to the International Conference and Workshop on Modeling the Consequences of Accidental Releases of Hazardous Materials, San Francisco, CA, September 30, 1999.

CSB Update: Tosco, Equilon and Sonat Investigations. American Petroleum Institute's Safety and Fire Protection Conference, Tulsa, OK, September 29, 1999

The U.S. Chemical Safety and Hazard Investigation Board. Presented to the State of Pennsylvania Conference for Local Emergency Responders, Harrisburg, PA, September 27, 1999.

The Year 2000 Technology problem and Chemical Safety: Prevention Recommendations. Presented to the Brainstorm Group Year 2000 Conference and Expo, Chicago, IL, September 23, 1999.

The New Chemical Safety Board: A 21st Century Approach to Accident Prevention. U.S. EPA Region III 1999 Chemical Emergency Preparedness and Prevention Conference, Washington, DC, September 22, 1999

The New Chemical Safety Board: Inter-agency Cooperation for Chemical Incident Prevention. Presented to the National Governor's Association State Emergency Response Commission Conference, Ogunquit, ME, September 14, 1999

The Year 2000 Technology problem and Chemical Safety: Prevention Recommendations. Presented to the National Governors' Association, State Emergency Response Commission Conference, Ogunquit, ME, September 13, 1999.

The Chemical Safety Board: A New Agency, A Unique Role. U.S. FEMA Region VII LEPC Conference, Kansas City, MO, September 10, 1999

The Chemical Safety Board: Status and Prevention Recommendations. Presented to the International Association of Fire Fighters 15th Symposium on Occupational Health and Hazards, John Redmond Foundation, Honolulu, HI, August 23, 1999.

The Chemical Safety Board: Status and Prevention Recommendations. Presented to the Canvassers Summer Conference, Ohio State University, Columbus, OH, August 13, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the NIEHS Training Clearinghouse Meeting, Washington, DC, August 4, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the Tides Foundation – Environmental Justice Leadership Meeting, Washington, DC, July 14, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the Mississippi River Basin Alliance Annual Meeting, St. Louis, MO, July 10, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the to participate at the California Office of Emergency Services Conference on Y2K for Hazmat Teams, Sacramento, CA, June 29, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the Air & Waste Management Association Meeting, St. Louis, MO, June 22, 1999.

Federal Agency Perspective: Issues Affecting Safety and Health. American Society of Safety Engineers' 1999 Professional Development Conference, Baltimore, MD, June 15, 1999

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the American Industrial Hygiene Association Annual Meeting, Toronto, Canada, June 9, 1999.

The U.S. Chemical Safety and Hazard Investigation Board and Approaches to the Y2K Problem. Presented to the Indiana Forum for Environmental Safety, Greenwood, IN, June 8, 1999.

Chemicals and the Millennium Bug: The Problem and its Prevention. Presented to the American Council of Government Industrial Hygienists – Computer Committee, Toronto, Canada, June 8, 1999.

The Chemical Safety Board: Status and Prevention Recommendations. Presented at the American Industrial Hygiene Association Meeting – Confined Space Committee, Toronto, Canada, June 6, 1999.

The New Chemical Safety Board: A 21st Century Approach to Accident Prevention. International Hazardous Materials Response Teams Conference, Baltimore, MD, June 5, 1999

Hazards and the Millenium Bug: Training for Prevention. Presented at the National Institute of Environmental Health Sciences Training Grantee Meeting, Washington, DC, June 4, 1999.

The New Chemical Safety Board: A 21st Century approach to Accident Prevention. National Petrochemical and Refiners Association's National Safety Conference, Dallas, TX, April 29, 1999

The U.S. Chemical Safety and Hazard Investigation Board. Presented to the Industrial Fire World Conference, Houston, TX, April 20, 1999

Chemicals and the Millennium Bug: The Problem and Its Prevention. Presented to the Air Force Y2K Technical Exchange Meeting, Crystal City, VA, April 20, 1999.

Chemicals and the Millennium Bug: The Problem and Its Prevention. Presented to the National Pollution Prevention Roundtable – 1999 Spring Conference, Washington, DC, April 7, 1999.

Chemicals and the Millennium Bug: The Problem and Its Prevention. Presented to the National Petrochemical and Refiners Association International Conference, San Antonio, TX, March 30, 1999.

Accident Investigation Report: Sierra Chemical Company. Mustang, NV. Presented at the American Institute of Chemical Engineers Spring Meeting, Houston, TX, March 17, 1999.

The U.S. Chemical Safety and Hazard Investigation Board. Presented to the American Bar Association Occupational Safety and Health Law Committee Meeting, Miami, FL, February 24, 1999.

Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented to the National Institute of Occupational Safety and Health – Environmental Resource Centers Winter Forum, Clearwater, FL, February 10, 1999.

Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented to the Green Group Forum, Washington, D.C, January 28, 1999.

Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented to the Washington Post Community Forum on Embedded Systems, Washington, DC, January 28, 1999.

Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented to the Mid-Atlantic pollution Prevention Conference, Baltimore, MD, January 21, 1999.
Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented to the AFL-CIO Health and Safety Directors Conference, Washington, DC, January 21, 1999.

Chemical Accidents and the Year 2000: New Preventative Approaches Needed. Presented at the South Texas AIChE Process Safety Symposium, Houston, TX, October 26-27, 1998.

Chemical Accident Prevention: Approaches to the Y2K Problem. Presented to the National Institute of Environmental Health Sciences, Research Triangle Park, NC, October 19, 1998.

Chemical Accident Prevention: Approaches to the Y2K Problem. Presented to the Chemical Manufacturers' Association, Arlington, VA, October 15, 1998.

Chemical Accidents and the Year 2000 Technology Problem. Presented to the Committee for Environment and Natural Resources, Subcommittee on Toxics and Risk, White House Conference Center, Washington, DC, September 24, 1998.

Chemical Accident Investigations: New Approaches. Presented to the U.S. Environmental Protection Agency Accident Prevention Advisory Subcommittee, Washington, DC, September 9, 1998.

The Chemical Safety and Hazard Investigation Board. Presented at the Canvassers' Conference – Ohio State University, Columbus, OH, July 30-31, 1998.

Chemical Accident Investigations: New Approaches. Presented to the National Environmental Law Center – Great Lakes Pollution Prevention and Chemical Safety Project Policy Forum, Chicago, IL, June 22, 1998.

Chemical Accident Investigations: New Approaches. Presented to Occupational Safety and Health State Plan States Association Spring Meeting, Minneapolis, MN, June 8, 1998.

Chemical Accident Investigations: New Approaches. Presented to the Twelfth Legislative Conference, Coalition for Legislative Action, Washington, DC, June 3, 1998.

The Chemical Safety and Hazard Investigation Board. Presented to the American Institute of Chemical Engineers/Center For Chemical Process Safety – Technical Advisory Group, Las Vegas, NV, May 12, 1998.

The Chemical Safety and Hazard Investigation Board. Presented to the National Institute of Environmental Health Sciences. Research Triangle Park, NC, May 5, 1998.

Chemical Accidents and Public Health: New Approaches. Presented to the Agency for Toxic Substances and Disease Registry – Board of Scientific Counselors, Atlanta, GA, April 30, 1998.

Status of Chemical Accident Prevention. Presented at the 14th International Hazardous Materials Spills Conference, Chicago, IL, April 5-6, 1998.

Public Health and Communities: Brownfields Redevelopment. Presented to the Tulane Environmental Law Conference, New Orleans, LA, March 5, 1998.

CSB's Website Activities

CSB's Website in 1999 named one of the 16 best federal Government Websites by Government Executive Magazine. Since CSB began gathering statistics in April 1999, the website has had 7.5 million hits and displayed 1.3 million page views. The CSB's Investigation Report on the Herrig Brothers explosion has been downloaded about 108,000 times.

U.S. CHEMICAL SAFETY AND HAZARD INVESTIGATION BOARD

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