



DEPARTMENT OF HOMELAND SECURITY  
Office of Inspector General  
Washington, DC 20528

January 7, 2004

MEMORANDUM

TO: Carolyn W. Merritt, Chairman/CEO  
U.S. Chemical Safety and Hazard Investigation Board

FROM: Robert L. Ashbaugh, Assistant Inspector General for Inspections,  
Evaluations, and Special Reviews

SUBJECT: *A Report on the Continuing Development of the U.S. Chemical Safety and  
Hazard Investigation Board, OIG-04-04*

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Attached for your review and action is our final inspection report, *A Report on the Continuing Development of the U.S. Chemical Safety and Hazard Investigation Board* (CSB). The report addresses the CSB's efforts to carry out its mission to investigate accidental chemical releases at fixed facilities and to report to the public on the causes of those accidents. We found that the CSB fulfills some but not all of its statutory responsibilities, and we identified opportunities to enhance the CSB administration. Our report makes 11 recommendations to help strengthen the CSB.

We incorporated both formal and informal comments from the CSB, as appropriate, within the body of the report. This report, including the appendix, will be posted on the Department of Homeland Security Office of Inspector General (DHS OIG) Internet and Intranet sites.

Finally, while we have completed the FY 2003 reviews begun by the Federal Emergency Management Administration OIG prior to its transfer to the DHS OIG, this report will be our last review of the CSB. We are certain that whichever OIG is chosen to succeed us will provide the necessary continued oversight, and we are prepared to share our prior work with any successor OIG to ensure a smooth transition.

If you have any questions, please call me or have your staff contact William McCarron, Senior Inspector, at (202) 254-4206.

Attachment

cc: Bea Robinson, Audit Liaison

# DEPARTMENT OF HOMELAND SECURITY

## Office of Inspector General

### A Report on the Continuing Development of the U.S. Chemical Safety and Hazard Investigation Board



Office of Inspections, Evaluations, & Special Reviews

OIG-04-04

January 2004

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## Abbreviations

ATSDR	Agency for Toxic Substances and Disease Registry
ATF	Bureau of Alcohol, Tobacco, and Firearms
BTS	Bureau of Transportation Statistics
COO	Chief Operating Officer
CSB	U.S. Chemical Safety and Hazard Investigation Board
DHS	Department of Homeland Security
DISP	Director, Office of Investigations and Safety Programs
DOT	Department of Transportation
E-FOIA	Electronic Freedom of Information Act Amendments of 1996
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FOIA	Freedom of Information Act
GAO	United States General Accounting Office
GPRA	Government Performance and Results Act
MOU	Memorandum of Understanding
NRC	National Response Center

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NTSB	National Transportation Safety Board
OIG	Office of Inspector General
OISP	Office of Investigations and Safety Programs
OSHA	Occupational Safety and Health Administration
PAR	Performance Accountability Report
RMP	Risk Management Program

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*Department of Homeland Security  
Office of Inspector General*

## **Introduction**

The Chemical Safety and Hazard Investigation Board (CSB) is an independent agency in its sixth year of operation. Headquartered in Washington, D.C., it investigates accidental chemical releases at fixed facilities and reports to the public on their causes. The CSB also is authorized to conduct general studies of chemical accident hazards. Through its reports, the CSB makes recommendations to prevent future accidents to federal, state, and local governmental entities and other parties. Although the CSB was created under the Clean Air Act Amendments of 1990, Pub. L. No. 101-549, the CSB did not receive funding or begin operations until FY 1998. In FY 2003, the CSB had an operating budget of \$7.85 million and 37 permanent full-time employees.

In FY 2001, Congress designated the Federal Emergency Management Agency Office of Inspector General (FEMA OIG) to serve as the Inspector General for the CSB.<sup>1</sup> The Homeland Security Act of 2002, Pub. L. No. 107-269, transferred the FEMA OIG to the Department of Homeland Security (DHS) on March 1, 2003. Therefore, DHS OIG assumed responsibility for completing this review. We examined the role of the CSB in federal prevention of chemical accidents at fixed facilities and the CSB's overall effectiveness in meeting its statutory responsibilities. We also reviewed the CSB's systems for incident and hazard selection, investigation and reporting, and dissemination of findings.

## **Results in Brief**

After undergoing significant management difficulties during its first four years, the CSB increased its productivity and stability under new management during the past year. The CSB is progressing toward meeting its statutory responsibilities and has increased the number of investigations it performs. However, the CSB lacks the resources to investigate all accidents within its purview and has no plan to address this shortfall. The CSB meets other responsibilities to issue recommendations, coordinate with other federal agencies, and perform discretionary studies of general chemical hazards. The CSB has intentionally refrained from meeting its responsibility to publish a regulation on accident reporting.

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<sup>1</sup> Pub. L. No. 106-377, Appendix A, H.R. 5482, Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 2001. Similar provisions were contained in subsequent appropriations acts.

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The CSB's statutory and legislative history suggest that the CSB has a broader responsibility to study whether and how chemical accidents can be prevented. This task involves data collection and analysis. With the Environmental Protection Agency, the CSB initiated a project to improve some accident data collection for analysis. However, the CSB's draft strategic plan drops previous, more ambitious data-related goals. Resuming this responsibility can help the CSB progress towards a leadership role in chemical accident prevention.

In addition to reevaluating strategic objectives, the CSB can improve its administration. The CSB's incident selection process, which the CSB uses to identify potential investigations, needs stricter management controls to ensure the accuracy, reliability, and quality of screening and screening data. Also, the CSB should revisit a tabled recommendation from the General Accounting Office on developing a policy for managing conflicts of interest. Finally, the CSB needs to publish additional records and policies to fulfill standards related to the Administrative Procedure Act, Freedom of Information Act, and Electronic Freedom of Information Act Amendments of 1996.

We recommend that the CSB:

1. Address the gap between accidents it investigates and those falling within its statutory jurisdiction that it does not investigate;
2. Define a chemical accident within its purview and publish a regulation for receiving information on accidents;
3. Improve follow-up for the CSB's safety recommendations;
4. Establish a plan linking the CSB's measurement data and strategic improvements;
5. Develop a long-term strategy to address the shortfall in national chemical accident database quality;
6. Revise the incident selection process to ensure that all accidents meeting statutory criteria are considered for deployment;
7. Revise the incident selection process to incorporate levels of supervision and separation of duties;
8. Improve its recordkeeping of the selection process;

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9. Publish an agency-specific policy regarding employee conflicts of interest;
  10. Enact required administrative regulations; and
  11. Publish policies and administrative guidance on the CSB website.

## **Background**

An influx of key managers and staff has revitalized the CSB. In the past year, the CSB gained two new board members, including a chairman/chief executive officer, and a new chief operating officer (COO). The general counsel, who functioned as the acting COO for more than two years, returned to legal duties full time. The CSB also added seven new investigators, and most recently, a management analyst to manage and oversee the CSB's human capital program. Ongoing improvements at the CSB include streamlining management, bolstering the investigations program, and intensifying efforts to get recommendations implemented. Furthermore, problems that FEMA OIG reported in March 2002—longstanding governance difficulties and internal conflict over the CSB's mission and priorities—have been resolved. The CSB is also addressing human capital management weaknesses that the FEMA OIG reported in November 2002.

The CSB has increased its investigative productivity. Since June 2002 when the influx of new staff began, the CSB has initiated 12 new investigations and two hazard studies and completed eight investigations. Generally, the CSB is completing investigations more quickly. Nine investigations beginning before January 2001 averaged 722 days, while five investigations beginning after January 2001 averaged 390 days. Building on this momentum, the CSB pledged to Congress in its FY 2004 budget request to conduct 12 investigations next year. The COO reorganized the Office of Investigations and Safety Programs (OISP) to better accommodate the CSB's investigative workload. Appendix C accounts for the CSB's investigations as of October 1, 2003, and it illustrates the increasing level of investigative activity.

Making the recommendations program a focal point of the CSB's prevention efforts, the CSB has redirected outreach activities toward promoting adoption of its recommendations. A CSB coordinating committee helps ensure that outreach activities support the safety recommendations. The CSB is also repackaging and communicating its reports in new ways. The CSB has started

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releasing incident digests, or non-technical investigation summaries, for all completed investigations dating back to 1998.

## **Purpose, Scope, and Methodology**

Congress designated the FEMA OIG to serve as the Inspector General for the CSB in Public Law No. 106-377, the Veterans Affairs-Department of Housing and Urban Development and Independent Agencies Appropriations Act for FY 2001. The Homeland Security Act of 2002 transferred the FEMA OIG to the Department of Homeland Security on March 1, 2003. Therefore, the DHS OIG assumed responsibility for completing this review.

We assessed: (1) the role of the CSB in federal prevention of chemical accidents at fixed facilities; (2) the CSB's overall effectiveness in meeting its statutory responsibilities; (3) the CSB's systems for incident and hazard selection, investigation and reporting, and dissemination of findings; and (4) whether any legislative and regulatory provisions are impeding the CSB's performance.

We reviewed the legislative history, statutes, and regulatory publications of the CSB. For comparison, we reviewed the statutes of the National Transportation Safety Board (NTSB) and regulatory publications of seven independent agencies including the NTSB (see Appendix D). We also reviewed various CSB documentation, including FY 2003 and FY 2004 budget submissions, five-year strategic plan and draft updates, investigative protocols, incident selection criteria, operational data, and organizational strategies.

We interviewed the CSB employees including the chairman, board members, chief operating officer, general counsel, deputy general counsel, the director of the Office of Investigations and Safety Programs, senior investigators, recommendation specialists, assistant to the COO, and the OISP's program analyst. We also held discussions with the director of financial operations and the CSB's new management analyst responsible for the human capital program.

We interviewed officials from the NTSB, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the Agency for Toxic Substances and Disease Registry (ATSDR), the National Institute for Occupational Safety and Health, and the National Response Center (NRC). We also interviewed representatives of various trade,



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industry, academic and union organizations, including the Massachusetts Institute of Technology; the Mary Kay O'Connor Process Safety Center at Texas A&M University; the American Chemistry Council; the American Institute of Chemical Engineers' Center for Chemical Process Safety; Union of Needletrades, Industrial and Textile Employees; the American Petroleum Institute; the Paper, Allied-Industrial, Chemical and Energy Workers International Union; the National Association of Chemical Distributors; the Dow Chemical Company; BP Amoco; Rohm & Haas; and Monsanto.

We conducted our fieldwork in Washington, D.C., from November 2002 to April 2003. In most cases, we included CSB productivity data during the remainder of FY 2003. Our inspection was conducted under the authority of the Inspector General Act of 1978, as amended, and according to the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

## **CSB Does Not Fulfill All of Its Statutory Responsibilities Including the Investigation of Major Chemical Accidents**

We examined the CSB's mission as established by its enabling statute and legislative history. The statute requires that the CSB investigate and report on the causes of serious chemical accidents, issue recommendations that help prevent future chemical accidents, publish a regulation requiring reports on accidental releases, and establish coordination with other federal agencies involved in chemical accident prevention. Additionally, the statute gives the CSB discretionary authority to perform studies of general chemical hazards. The CSB is progressing toward meeting these statutory responsibilities. We found that the CSB partly fulfills its responsibility to investigate serious chemical accidents. Without the resources to investigate all the accidents within its purview, the CSB also is without plans to identify or address its investigative gap, which we approximated as several hundred accidents per year. We found that the CSB fulfills its responsibilities to issue recommendations, coordinate with other agencies, and perform discretionary hazard studies. The CSB has deliberately refrained from publishing a regulation on accident reporting.

Finally, the CSB's statute and legislative history suggest that the CSB has a broader responsibility to learn whether and how chemical accidents can be prevented most effectively. This responsibility will involve data collection and analysis, which the CSB has not indicated it is prepared to do. Although the CSB initiated a joint project to improve EPA data collection for certain

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chemical accidents, the CSB dropped more far-reaching, data-related goals from its new strategic plan. The CSB should reconsider its plan, particularly regarding the information it collects on the chemical accident universe, to work toward national leadership in chemical accident prevention.

### **The CSB Does Not Fully Use Its Investigative Authority**

*(C) The Board shall-- (i) investigate (or cause to be investigated), determine and report to the public in writing the facts, conditions, and circumstances and the cause or probable cause of any accidental release resulting in a fatality, serious injury or substantial property damages. . . .*

*(E) . . . In no event shall the Board forego an investigation where an accidental release causes a fatality or serious injury among the general public, or had the potential to cause substantial property damage or a number of deaths or injuries among the general public.<sup>2</sup>*

The CSB's investigative output is increasing. The CSB completed six investigations in FY 2003, and the CSB plans to increase its output to level off around 12 products per year by FY 2005. Based on the CSB's incident notification records, however, we counted that the number of accidents meeting its statutory criteria for investigation under subparagraphs (C)(i) and (E) is approximately 300 per year. With annual budgets under \$8 million, the CSB has insufficient resources to investigate all the accidents within its statutory purview. Furthermore, the CSB has not measured or planned to address its investigative gap. The CSB no longer uses its "cause to be investigated" authority to tap other agencies' investigative work. Thus, for the vast majority of accidents within its purview, the CSB collects only incident notifications; it does not conduct an investigation, identify an accident's cause, or issue a report to inform industry and the public.

As of June 1, 2003, the CSB completed 12 major accident investigation reports, issued shorter safety bulletins and case studies on three other accidents, and initiated eight ongoing accident investigations. All but one of these 23 accidents caused fatalities, serious injuries, or substantial property damage, which require investigation under subparagraph (C)(i). Three accidents (Concept Sciences, Herrig Brothers Farm, and Kaltech Industries) caused fatalities or serious injuries among members of the public, which subparagraph (E) explicitly requires the CSB to investigate, or among first

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<sup>2</sup> 42 U.S.C. 7412(r)(6) (Supp. 1990).

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responders, which subparagraph (E) may cover implicitly.<sup>3</sup> Several of the 23 accidents also required investigation under subparagraph (E) because they had the potential to harm the public. This group includes the chlorine release at DPC Enterprises, the only investigated accident that did not involve actual fatalities, serious injuries, or substantial property damage.

In addition, the CSB began this year to produce digest versions of its completed reports, making them accessible to a broader audience. Also, when the CSB did not deploy to a phenol accident in Fall 2002, a board member persuaded the company involved to publicize its own investigative findings on the Internet. This is noteworthy because one of the CSB's greatest values to its industry and trade group readership involves publicizing lessons learned from accidents, which companies themselves often do not share for liability reasons.

In March 2003 congressional testimony, the chairman announced that the CSB would complete eight safety products including investigations during this fiscal year,<sup>4</sup> an increase from five in FY 2002.<sup>5</sup> The CSB plans to complete 12 safety products per year for the next five years. The CSB board members indicated that the CSB intends to keep its output in the range of 10-20 reports, a goal several industry and trade group representatives whom we interviewed also proposed. Several suggested that conducting more investigations would not be worthwhile because the CSB's audiences would become so saturated with safety messages that further investigations would lose effectiveness.

Whether or not this "saturation point" theory is valid, 12 investigations per year falls short of the responsibility imposed on the CSB in subparagraphs (C)(i) and (E). The CSB noted in its FY 2003 budget submission: "Even at its current funding level, the board is unable to investigate a number of serious chemical incidents due to a lack of resources."<sup>6</sup> The gap between the number

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<sup>3</sup> The CSB has not officially defined which accidents it considers to meet subparagraphs (C)(i) or (E). In "Process for Selecting Accident Investigations," the CSB does not distinguish whether first responder fatalities or injuries are grouped with public consequences, requiring investigation under subparagraph (E), or with consequences subject to investigation under subparagraph (C)(i). In "Incident Screening Guidance," the CSB weighted first responder fatalities equally with public fatalities, separate from employee and contractor fatalities. Therefore, for the purposes of this report, we counted first responder fatalities as meeting subparagraph (E).

<sup>4</sup> A "safety product" is how the CSB defines its output goal. The term includes accident investigation reports, hazard studies, and other products such as safety bulletins.

<sup>5</sup> In FY 2003, the CSB completed five full investigation reports, one investigation case study, and a safety bulletin, compared to four full investigation reports and one investigation case study in FY 2002.

<sup>6</sup> U.S. Chemical Safety and Hazard Investigation Board, *FY 2003 Budget Justification and Annual Performance Plan*, January 30, 2002.

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of possible investigations and the number the CSB undertakes is well known and generally accepted by the CSB and the chemical industry. However, what is less known is the size of the gap and what should be done to address it. The CSB does not have a current estimate of how many accidents it would investigate if it fully used its authority under subparagraphs (C)(i) and (E). In 2000, the CSB reported that more than 100 accidents per year result in fatalities, injuries, evacuations/sheltering in place, or significant property damage.<sup>7</sup> The CSB no longer supports this estimate of potential investigations. Federal and industry representatives we interviewed had no estimate either, but they suggested we might search the databases of EPA, OSHA, the Agency for Toxic Substances and Disease Registry, and the CSB to develop one.

We assessed the CSB's incident screening matrix, which the CSB began using in March 2001 to evaluate the incident notifications it receives for possible investigation. The data from the screening matrix must be qualified in several ways.<sup>8</sup> First, no mechanism exists to guarantee that all chemical accidents are reported; the count is likely to be incomplete. Second, the CSB has yet to develop quality control procedures to verify that notifications are recorded correctly in the screening matrix. Third, the CSB has not clearly defined which accident sites and consequences fall within its statutory jurisdiction for investigation, which means some accidents may be inappropriately included or excluded.<sup>9</sup>

The definition issue particularly complicates the CSB's efforts to identify which accidents it must investigate under subparagraph (E) due to their *potential* to harm the public. Assessing an accident's potential harm based on the limited information in an initial incident notification is imprecise. In some cases, the CSB cannot judge the potential for public harm until the investigative team begins collecting evidence. For example, the CSB deployed to an incident at First Chemical Corporation that involved a tower's explosion, which sent shrapnel into a nearby facility. Only after the investigative team arrived did the CSB learn that the shrapnel could have landed elsewhere, and released hydrogen or anhydrous ammonia, flammable and toxic gases with potential for public harm. To estimate an accident's potential for public harm, the CSB relies on whether the accident occurred at facilities in EPA's Risk Management Program (RMP), which regulates 140 chemicals with the potential for dangerous offsite consequences. However, RMP does not cover

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<sup>7</sup> U.S. Chemical Safety and Hazard Investigation Board, *2001-2005 Strategic Plan to Congress*, September 29, 2000.

<sup>8</sup> See page 31 for a more detailed discussion of limitations of the incident screening matrix.

<sup>9</sup> The CSB's selection criteria define a serious accident as "one that results in one or more deaths, injuries, hospitalizations, evacuations/sheltering-in-place of citizens, or significant property damage." U.S. Chemical Safety and Hazard Investigation Board, *Process for Selecting Accident Investigations*, September 15, 2000.

every potential hazard, and the CSB is considering changes to its screening process to account for the bluntness of this tool.<sup>10</sup> Given these qualifications, it is plausible that estimates understate the CSB’s responsibility to address accidents that may harm the public.

However, since the screening matrix records contain most of the notifications the CSB received, they are useful because they reflect accidents to which the CSB might have deployed. The data suggest that the number of serious accidents the CSB might have investigated or caused to be investigated under subparagraphs (C)(i) and (E) totaled 294 in FY 2002.<sup>11</sup>

FIGURE 1.—*Incident Notifications Screened by the CSB*

	<b>FY 2001</b> March 13 to September 30, 2001	<b>FY 2002</b>
All notifications screened	313	613
(C)(i) Notifications involving any fatalities, serious injuries, and/or substantial property damage	132	253
(E) Notifications involving actual fatalities and/or serious injuries among members of the public (includes first responders)	3	5
(E) Notifications involving potential fatalities, serious injuries, and/or substantial property damage among members of the public	25	63
<b>Total notifications meeting (C)(i) or (E)<sup>12</sup></b>	<b>146</b>	<b>294</b>

<sup>10</sup> RMP applies to about 15,000 facilities. In contrast, OSHA’s standard on Process Safety Management of Highly Hazardous Chemicals covers 137 chemicals and about 25,000 businesses, according to initial estimates when the rule was published in 1992. The CSB’s 2002 report *Improving Reactive Hazard Management* noted that both these programs cover reactive chemicals incompletely.

<sup>11</sup> These counts are based on 1,111 notifications that the duty officer recorded in the CSB’s Incident Selection Screening Matrix between March 13, 2001, and January 3, 2003. Counts reflect the date the accident was reported to the CSB. We established a minimum count for accidents meeting subparagraph (E) by reading notifications the CSB received and accident scores the duty officer assigned. We established a minimum count for accidents meeting subparagraph (C)(i) by reviewing accident scores. Except where stated otherwise, statistics reflect the duty officer’s uncorrected records.

<sup>12</sup> Because some notifications met both (C)(i) and (E), the number of total notifications is not a sum of the individual figures for (C)(i) and (E).

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Of the 294 potential investigations in FY 2002, the CSB deployed to four (one percent). Even were the CSB to reach its goal of 12 reports per year, this production level would mean the CSB investigates less than five percent of the accidents within its statutory purview. For over 95 percent of the accidents, the CSB will not identify causes to report to the public. Nevertheless, the CSB members told us that the CSB today is missing no major deployments. Others whom we interviewed did not disagree. When we asked industry representatives about investigations the CSB should have undertaken but did not, we received three replies that cited a 2000 Phillips 66 accident that occurred during a period when the CSB temporarily stopped all new deployments in order to work off a backlog of old matters. The CSB is now more responsive in its deployments. For example, in January and February 2003, the CSB deployed to four incidents within a five-week span. However, that deployment rate, even if the CSB had the resources to sustain it, would still fall short of the 294. The CSB needs to reevaluate whether completing four to twelve of several hundred potential investigations per year meets the statute's intent.

Not only is the CSB unable to investigate all the accidents meeting subparagraphs (C)(i) and (E), but also the CSB is not meeting its mandatory requirement to investigate an important subset of the total: accidents harming the public, which, according to (E) “[i]n no event shall the Board forego.” Staff at the CSB told us that the only accident in the CSB's history that the CSB was absolutely compelled to investigate was an explosion that killed an offsite member of the public. However, the CSB's interpretation of which accidents have met (E) is an overly narrow construction. The statute does not target only fatalities but also serious injuries. Moreover, (E) does not specify that the harm must occur offsite, nor is it clear whether first responders should be counted as members of the public. Under a broader interpretation of (E), at least five accidents in FY 2002 alone had actual consequences that compelled deployment. For four of these, the CSB performed no investigative follow-up and did not even consider deployment. The CSB also did not follow up on dozens of accidents that met (E) due to potential public harm. The CSB needs to comply with subparagraph (E) or seek statutory changes.

As part of this process, CSB should reexamine how it employs its “cause to be investigated” authority. The CSB's statute allows the CSB to use investigations performed by agencies such as OSHA, EPA, and others in order to prepare its reports. However, the CSB generally prefers to investigate for itself any accident for which it might identify root causes or lessons learned. In 1999, the CSB terminated its incident review program, in which CSB staff

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analyzed others' investigations. The CSB judged that the costs in time and staff produced too little benefit compared to the CSB-controlled investigations.

This is not the stance taken by the National Transportation Safety Board, after which the CSB was patterned. The NTSB's pipeline and hazmat division, whose jurisdiction somewhat resembles the CSB's, also has limited resources to fulfill its responsibility to investigate certain accidents. Unlike the CSB, the NTSB uses its "cause to be investigated" authority to solicit others' investigations when resources or other considerations prevent it from undertaking mandatory deployments. In this manner, the NTSB builds its knowledge base about all the accidents within its statutory purview, despite resource limitations. In contrast, by not using its "cause to be investigated" authority, the CSB has an incomplete knowledge base for the majority of incident notifications within its purview.<sup>13</sup>

The CSB's small appropriations in its six-year history suggest that Congress may not expect the CSB to exercise its full statutory authority for investigations. In its first five years, the CSB struggled to demonstrate productivity. The CSB has yet to provide Congress with a clear picture of what it is not accomplishing. For example, in its FY 2003 budget justification, the CSB sketched its resource limitations by listing four serious incidents occurring over an eight-day period (July 9-17, 2001) to which the CSB might have deployed if it had more resources. Actually, during this period the CSB received 28 incident notifications, at least 14 of which met (C)(i), and one that may have met (E), involving a serious injury to a first responder.<sup>14</sup> The CSB's FY 2004 budget justification does not discuss the investigative shortfall at all. The CSB must provide Congress with a reliable description of its investigative gap and how the CSB views its statutory responsibilities.

### **The CSB Meets Requirement to Issue Report Recommendations But Should Improve Management of Issued Recommendations**

*(C) The Board shall – . . . (ii) issue periodic reports to the Congress, Federal, State and local agencies, including the Environmental Protection Agency and the Occupational Safety and Health Administration, concerned with the safety of*

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<sup>13</sup> Although the CSB reexamines selected notifications to plan hazard studies and updates records in its web-based Chemical Incident Report Center, for the majority of chemical incidents, the CSB's follow-up only consists of recording the notification and screening for deployment.

<sup>14</sup> Although the CSB did not deploy to that accident, it deployed in succession to two of the accidents that met subparagraph (C)(i): ATOFINA Chemicals, on which the NTSB reported in June 2002, and Motiva Enterprises, on which the CSB reported in August 2002.

*chemical production, processing, handling and storage, and other interested persons recommending measures to reduce the likelihood or the consequences of accidental releases and proposing corrective steps to make chemical production, processing, handling and storage as safe and free from risk of injury as is possible and may include in such reports proposed rules or orders which should be issued by the Administrator under the authority of this section or the Secretary of Labor under the Occupational Safety and Health Act (29 U.S.C. 651 et seq.) to prevent or minimize the consequences of any release of substances that may cause death, injury or other serious adverse effects on human health or substantial property damage as the result of an accidental release. . . .*

As of June 1, 2003, the CSB issued 13 investigation reports containing 176 recommendations to prevent future accidents.<sup>15</sup> Recommendations have targeted 72 different recipients. The CSB has directed the largest percentage of recommendations to industry (44%), closely followed by professional and trade organizations (34%). Government agencies are next (14%), then unions (9%). Although the CSB has directed recommendations to EPA and OSHA, none has contained specific proposals for rules or orders.<sup>16</sup> The CSB began issuing recommendations in September 1998 with its first completed report, but it did not adopt a formal process to manage issued recommendations until December 2001. The CSB began closing completed recommendations in March 2002 and has closed about a quarter of its recommendations to date. Recommendations follow-up is an area that the CSB should continue to improve.

FIGURE 2.— *Recommendations Status by Recipient*

<b>Recipient</b>	<b>Issued</b>	<b>Closed</b>	<b>Open</b>
All	176	38 (22%)	138 (78%)
Industry (corporation or facility)	77 (44%)	19	58
Professional and trade associations	60 (34%)	14	46
Unions	13 (9%)	2	11
Other governmental entity	15 (9%)	1	14
OSHA	6 (3%)	1	5
EPA	4 (2%)	0	4
Academic institutions	1 (1%)	1	0

The CSB’s goal for acceptance of its safety recommendations is 80 percent. This goal resembles the NTSB’s, although the percentages are not strictly comparable. For example, the CSB issues some types of recommendations that the NTSB does not, such as a recommendation that the recipient

<sup>15</sup> The CSB also issued a case study and a bulletin, neither of which contained recommendations.

<sup>16</sup> Individual board members developed a proposal in support of the reactive hazard investigation.



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communicate the report's findings and recommendations to a target audience. A great number of the CSB's recommendations issued (51, or 29 percent) and favorably closed (12, or 44 percent) are of this type. The next most common CSB recommendation type (36, or 20 percent) involved codes, standards, and regulations. Of the 38 recommendations the CSB has closed so far, no recommendation has closed with "unacceptable response," but 11 have closed as no longer applicable. Overall, the CSB has closed few recommendations; and of those, almost two-thirds (23 out of 38) were based merely upon communication of the report or because the recommendation was no longer applicable.

The CSB is working to bring up to date the status of its growing number of recommendations, but several examples suggest the CSB could do more to monitor its recommendations:

- The CSB closed ten recommendations in FY 2003.
- Although the company informed the CSB in 2000 that it no longer manufactures Yellow Dye 96, a recommendation from the Morton report for the company to revise the dye's Material Safety Data Sheet remained open until August 2003.
- Morton recommendations for EPA and OSHA to assist in the reactive hazard investigation remained open for 11 months after the CSB completed the investigation.
- The CSB took six months to publish recommendations from the Georgia Pacific report on the CSB's Internet database; the Internet database, which is the CSB's primary means of publicizing recommendations status, was generally months out of date.
- As of May 2003, the CSB had conducted follow-up action within the past six months for less than a third of its open recommendations, according to an internal database. Several recommendations appeared not to have received follow-up attention for more than 18 months.

When the CSB revised its strategic plan in July 2002, the CSB made the execution of its recommendations one of its three mission goals. Since then, the CSB increased the role of board members in promoting the adoption of the CSB recommendations, hired additional recommendations staff, and twice revised the placement of recommendations specialists within its Office of Investigations and Safety Programs. Also, the CSB developed an internal

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recommendations tracking database and added to its website a second, searchable database to inform the public about the nature and status of its recommendations. Recently, recommendations specialists told us that they were updating the CSB's records and considering information technology options to streamline record keeping. By the end of FY 2003, the CSB reported conducting follow-up actions for approximately three quarters of its open recommendations within the past six months. The program is evolving. However, the limited number of closed recommendations signals that the CSB needs to increase its attention to recommendations follow-up.

### **The CSB Has Not Established an Accident Reporting Regulation**

*(C) The Board shall - . . . (iii) establish by regulation requirements binding on persons for reporting accidental releases into the ambient air subject to the Board's investigatory jurisdiction. Reporting releases to the National Response Center, in lieu of the Board directly, shall satisfy such regulations. The National Response Center shall promptly notify the Board of any releases which are within the Board's jurisdiction.*

The CSB has not established a regulation requiring persons to report chemical accidents subject to CSB investigations. Instead, the CSB relies on reporting requirements set by other agencies, such as EPA, and it shares their incident notifications through a memorandum of understanding (MOU) with the National Response Center. The NRC furnishes about a third of the notifications the CSB receives. The CSB culls almost two-thirds of its notifications from the media, with support from the NTSB.<sup>17</sup> While this arrangement has some advantages, it does not fully satisfy the statute. Furthermore, it may lessen the quality and timeliness of the incident notification data the CSB needs for deployment decision-making and incident record keeping and analysis. The CSB needs to refine its mechanism for learning of chemical incidents, and it should publish a regulation describing how the CSB will receive the notifications it needs.

The CSB chose its current reporting arrangement for several reasons. The CSB's collection system mirrors the NTSB's and supplies more than enough notifications to exhaust the CSB's investigative resources. The CSB board members said they are satisfied that the present notification system adequately informs the CSB of incidents. Board members told the OIG it would not be cost-beneficial for the CSB to dedicate additional resources to collecting new

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<sup>17</sup> Of the 1,111 incidents in the screening matrix, the NRC was listed as sole source for 318 reports (29 percent); the media for 718 (65 percent); the NTSB for nine (one percent); and EPA and a citizen for one each (less than one percent). Remaining incident reports came from a combination of NRC, media, and NTSB sources.

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information, because the CSB lacks the resources to respond to all the incidents that are reported currently. Resources will limit what the CSB might accomplish if it does establish a stronger chemical accident reporting requirement.

However, without a regulation, the CSB has little control over the timeliness and completeness of the incident notifications it needs. A CSB reporting regulation may not guarantee that future notifications are prompt and thorough, but it would increase the CSB's influence over notification quality. We note that Congress granted the CSB a means of enforcing its reporting requirement in subparagraph (O) of its statutes:

*After the effective date of any reporting requirement promulgated pursuant to subparagraph (C)(iii) it shall be unlawful for any person to fail to report any release of any extremely hazardous substance as required by such subparagraph. The [EPA] Administrator is authorized to enforce any regulation or requirements established by the Board pursuant to subparagraph (C)(iii) using the authorities of sections 7413 and 7414 of this title. . . .*

Since the CSB has not promulgated a reporting requirement, it has not had opportunity to use this enforcement mechanism.

One reason the CSB should strive to improve chemical accident reporting is that the CSB receives many notifications that do not support timely deployment. The CSB's incident selection criteria specify that the CSB will "dispatch investigation teams within the 24 to 48 hour period following the accident."<sup>18</sup> As the CSB staff commented, the CSB prefers to begin an investigation while evidence and witnesses' recall are fresh and unadulterated. Although the CSB maintains that it could deploy to any accident no matter how late it learns of the event, and we agree, practice has shown that the CSB consistently deploys to accidents learned of within the first 48 hours after the event. All seven of the CSB's full investigations during the period covered by the screening matrix were reported on the day of or after the incident. If an incident is reported after two days or more, the CSB is not likely to deploy. Of the 449 incidents reported after two days or more, only 17 were brought to the attention of the director of OISP for deployment consideration:

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<sup>18</sup> *Process for Selecting Accident Investigations.*

FIGURE 3.—*Timeliness of Notifications Compared to Deployments*

Timeliness of Notification	Total	Consideration for deployment by director, OISP	Consideration for deployment by management team and/or board	Deployment	Full investigation
all	1,111	88	22	10	7
same day	255	33	14	7	5
next day	399	38	7	3	2
2 days later	170	5			
3 days later	98	4			
more than 3 days later	181	8	1		
unknown date	8				

Although the CSB deployments match quickly-reported accidents, the CSB has set no requirement to ensure quick reports. The CSB receives more than a third of its notifications outside the 48-hour deployment window. In comparison, OSHA has set a reporting requirement that enables it to learn about accident fatalities and multiple hospitalizations within eight hours, through a regulation that requires companies to report directly to OSHA. In 1994 OSHA lowered its reporting timeframe from 48 hours, noting one proposed rule comment that the “current time reporting requirement of forty-eight hours materially handicaps the capability of investigators to accurately establish what transpired.”<sup>19</sup> This statement further emphasizes the importance of rapid deployment. But by waiting to collect reports generated by others for other purposes, the CSB accepts later notifications than OSHA does. For example, the media is the sole source for almost two-thirds of the CSB’s notifications, yet about half the media’s reports occur two or more days after the incident.

Although the small CSB is not prepared to collect reports directly from companies as OSHA does, the CSB has other means to improve notification timeliness. More than three-quarters of the NRC’s reports arrive at the CSB within the 48-hour window. Although the NRC can collect many different types of information, the CSB has not fully tapped this ability. For example, based on criteria in the CSB-NRC MOU and the NRC's internal standard

<sup>19</sup> 59 Fed. Reg. 15595 (April 1, 1994) (amending 29 C.F.R. 1904.39.)

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operating procedures for supporting the CSB, NRC may not forward to the CSB the notifications the NRC receives regarding asphyxiations or significant on-site property damage. Furthermore, the CSB duty officer explained that only a tenth of the incidents that the CSB identifies as meeting the broadest term of a chemical incident are legally required to be reported to the NRC. The CSB has yet to set its own reporting requirement regarding the chemical accidents that parties must report to the NRC. If the CSB were to establish a reporting requirement and/or broaden the criteria in its MOU with the NRC, the CSB could likely draw more notification information from the NRC.

The CSB opposes developing a reporting requirement for additional reasons that, in our view, are less substantial. The CSB believes a new requirement to report accidents to the CSB would place an undue burden on companies, which are already obligated to report accidents to multiple government agencies whose reports the CSB can access during later research. While reducing reporting burdens on the public makes sense, (C)(iii) does not require the CSB to add its own notification collection system. Congress envisioned that the CSB might avoid duplicative requirements by using the NRC as its collection point.<sup>20</sup> The CSB must distinguish between who collects the initial report—something the CSB is not required to do—and what accident data is reported—something the CSB is required to establish in regulation.

The CSB's chairman also indicated the CSB is heeding advice from Congress not to develop accident data, as this is beyond the CSB's scope and not a good use of its resources. While Congress and OIG have encouraged the CSB to focus on ensuring the success of its investigative work, that advice should not be misconstrued as endorsing a diminution or disregard for the CSB's responsibility for chemical accident reporting. As an outcome of the FY 2000 Appropriations subcommittee hearings, Congress warned the CSB, "The Committee does not intend to augment the Board's resources until it is confident that appropriate management practices have been implemented and resources are being effectively allocated to chemical accident investigations where the Board can make useful recommendations with broad application."<sup>21</sup> However, during the hearings a representative said: "I really am taken back by the idea that the government does not have a handle on scope with regard to

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<sup>20</sup> Senate Report No. 101-228 states: "The regulations of the Board for accident reporting may provide that any person directed to make a report contact the National Response Center rather than the Board directly. This will assure coordination of such reports with responsibilities under the Comprehensive Environmental Response, Compensation and Liability Act, the Clean Water Act and the Hazardous Materials Transportation Act." 1990 CAA Leg. Hist. 8338, 8576. LEXIS, Clean Air Act Amendments of 1990.

<sup>21</sup> Senate Report 106-161 (1999), at p. 65.

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this problem [chemical accidents] before you ... That does seem to be a first step in getting a handle on this issue and trying to address it in a way that reduces incidents.”<sup>22</sup> Another encouraged the CSB to follow the NTSB’s model and “help establish patterns, insight into overall changes that can be made to reduce the likelihood of those accidents.”<sup>23</sup> Both of these aims are difficult to achieve without accident reports that are sufficiently comprehensive, accurate, and timely to support analysis.

The CSB has recognized the need for this analysis. In its reactive hazard investigation, the CSB searched 40 public and private databases and reported that its findings were limited because “existing sources of incident data are inadequate to identify the number, severity, frequency, and causes of reactive incidents.”<sup>24</sup> The report listed several key limitations, including:

- *No single data source provides a comprehensive collection of chemical incidents from which to retrieve or track reactive incident data. . . .*
- *No one comprehensive data source contains the data needed to adequately understand root causes and lessons learned from reactive incidents or other process safety incidents. . . .*
- *It is difficult to identify causes and lessons learned in existing sources of process safety incident data because industry associations, government agencies, and academia generally do not collect this information.*
- *Data sources contained incomplete and sometimes inaccurate incident information—for example, on numbers of injuries and community impacts. Descriptions of incidents and causal information were sometimes vague and incomplete.*
- *There are limited federal or state requirements to report incidents unless they involve specific consequences.*

While these comments target reactive incidents in particular, the lack of comprehensive and timely reporting on chemical accidents in general is a problem the CSB is both positioned and required to address. We commend the

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<sup>22</sup> Representative Alan B. Mollohan, House Appropriations subcommittee hearing (February 24, 1999).

<sup>23</sup> Representative Anne M. Northup, House Appropriations subcommittee hearing (February 24, 1999).

<sup>24</sup> U.S. Chemical Safety and Hazard Investigation Board, *Improving Reactive Hazard Management*, September 17, 2002.

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CSB for concentrating on building its investigative program, and we acknowledge that the CSB's current incident reporting system exceeds its current investigative resources. Nevertheless, the CSB has a responsibility to comply with its statute, and there are steps the CSB can take to improve chemical accident reporting nationwide. Doing so will help the CSB prioritize its investigative and hazard research and will better enable it to identify accident patterns that might support prevention strategies. The longer it takes the CSB to develop a more sophisticated system for managing chemical accident reports, the greater the opportunity cost to the CSB; that is, the CSB forgoes the opportunity to build its knowledge base about ongoing incidents.

### **The CSB Meets Interagency Coordination Requirement**

*(E) The Board shall coordinate its activities with investigations and studies conducted by other agencies of the United States having a responsibility to protect public health and safety. The Board shall enter into a memorandum of understanding with the National Transportation Safety Board to assure coordination of functions and to limit duplication of activities which shall designate the National Transportation Safety Board as the lead agency for the investigation of releases which are transportation related. The Board shall not be authorized to investigate marine oil spills, which the National Transportation Safety Board is authorized to investigate. The Board shall enter into a memorandum of understanding with the Occupational Safety and Health Administration so as to limit duplication of activities.*

The CSB has met the specific requirements of subparagraph (E). The CSB developed its required memoranda of understanding with OSHA in September 1998 and with the NTSB in December 2002. Both MOUs address how the agencies may reduce duplication of investigative activities, coordinate efforts on an investigation site, and share information and resources.

The general requirement to coordinate its activities with other federal agencies will remain an ongoing responsibility for the CSB. OSHA and the NTSB are not the only federal agencies that conduct investigations or studies concerning health and safety. The United States General Accounting Office (GAO) reported in 2000 that more than 15 federal agencies or components work to protect health and safety in the workplace.<sup>25</sup> Most commonly, incidents that the CSB might investigate also involve OSHA, but some have also been investigated by EPA; the Bureau of Alcohol, Tobacco, and Firearms (ATF); National Institute for Occupational Safety and Health; the U.S. Coast Guard; and state, local, and private entities. The CSB has developed MOUs with the

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<sup>25</sup> *Federal Agencies and Workplace Safety* (GAO/HEHS-00-45R, January 31, 2000). GAO based its work on federal legislation and regulations, agency missions and strategic plans, and MOUs among the studied agencies.

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EPA and ATF that are similar to its agreement with OSHA. The CSB has also developed an MOU with the Agency for Toxic Substances and Disease Registry, which allows the CSB to tap technical support from ATSDR for its investigations and health and safety program. The CSB has incorporated information from ATSDR, OSHA, EPA, and the ATF in some of its reports. Our discussions with the CSB and representatives of OSHA, EPA, NTSB, and the ATSDR led us to conclude that the MOUs adequately enable cooperation during investigations. We also learned that EPA and OSHA no longer produce root-cause investigation reports on the prevention of chemical accidents, as the CSB does, and neither do other federal entities.

The CSB-NTSB MOU addresses the overlap between chemical incidents that involve transportation and ones occurring at fixed facilities. While yielding to the NTSB's lead authority, the CSB has preserved its ability to look at incidents occurring at fixed facilities that involve transport. In the past year, the CSB had undertaken two such investigations, DPC Enterprises and BLSR Operating Ltd., after the NTSB declined to investigate. The DPC Enterprises investigation produced a safety advisory regarding hoses for handling chlorine, and the CSB completed a full investigation report with 22 safety recommendations in May 2003. GAO indicated that the CSB needs to clarify the focus of the CSB investigations (fixed facilities versus transportation) and the circumstances under which the CSB might investigate transportation-related accidents.<sup>26</sup> We agree that this may be helpful. The CSB's legislative history notes, "...whenever possible, the (chemical safety) board should rely on information collected by NTSB rather than conduct separate information-gathering activities."<sup>27</sup>

In addition to outlining their relationship during mutual investigations, the MOUs between the CSB, EPA, and OSHA support other forms of cooperation, such as the sharing of incident notifications and accident information. However, OSHA, EPA, and the CSB appear rarely to share notifications in the manner the MOUs outline. According to the MOUs, the agencies will inform each other when they learn of incidents involving fatalities, multiple hospitalizations, property damage in excess of \$500,000, or a significant public concern. Although more than ninety incidents in the CSB's screening matrix meet the first two criteria alone, the CSB lists the EPA as a notification source for one incident and OSHA as a source for none. For one particular worker fatality that OSHA investigated, the CSB learned of

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<sup>26</sup> *Chemical Safety Board: Improved Policies and Additional Oversight Are Needed* (GAO/RCED-00-192, July 11, 2000).

<sup>27</sup> Senate Report No. 101-228. 1990 CAA Leg. Hist. 8338, 8572.



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the incident through the media 50 days after OSHA began its investigation. Another largely unused provision of the MOUs involves incidents that EPA or OSHA but not the CSB investigates. Both allow the CSB to collect information from those investigations for further analysis, which supports the CSB's "cause to be investigated" authority. If the provisions of the existing MOUs are appropriate, then the CSB needs to work with OSHA and EPA to build their information-sharing relationship. The CSB may benefit from pursuing its MOU provision to take advantage of OSHA's more rapid notification system.

Many of the CSB's counterparts believe greater coordination and cooperation will be beneficial. Several industry and trade group representatives expressed the wish that the agencies would consolidate their investigations and reporting requirements. Still, most agreed that an independent, non-enforcement agency like the CSB has a valid interest in investigating separately from enforcement agencies like OSHA, EPA, and the ATF. The CSB anticipates further cooperation with ATSDR, which has offered to share data and analysis from its Hazardous Substances Emergency Events Surveillance program. ATSDR is also aiding the CSB in its hazard study on sodium hydrosulfide handling. According to the July 2002 update of its strategic plan, the CSB intends to revise and update its MOUs with ATSDR, NTSB, EPA, ATF, and OSHA in FY 2003. The CSB should ensure the revisions reflect the actual working relationship.

### **The CSB Conducts Authorized Research Studies**

*(F) The Board is authorized to conduct research and studies with respect to the potential for accidental releases, whether or not an accidental release has occurred, where there is evidence which indicates the presence of a potential hazard or hazards. To the extent practicable, the Board shall conduct such studies in cooperation with other Federal agencies having emergency response authorities, State and local governmental agencies and associations and organizations from the industrial, commercial, and nonprofit sectors.*

In addition to conducting incident investigations, the CSB conducts research and studies. The language in subparagraph (F) shows that hazard studies are a discretionary mission for the CSB, not a mandatory one, but CSB officials told the OIG that these studies are an effective use of its limited resources. The CSB has begun preliminary research for seven studies, an increase from its former strategic goal of one study per year.

The CSB selects studies based on crosscutting issues identified during its incident investigations. Prompted by the investigation at Morton International,

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the CSB issued its first study, *Improving Reactive Hazard Management*, in 2002. As the statute envisions, the study involved cooperation with EPA, OSHA, professional and trade associations, public advocacy organizations, and industry. More recently, based on its November 2002 Georgia Pacific Naheola Mill investigation, the CSB undertook two new, smaller studies targeting the hazards of sodium hydrosulfide handling and toxic gas emissions from industrial waste systems. In the past year, the CSB has increased its emphasis on hazard studies. Besides the two studies in progress, the CSB has identified five other potential topics for which it is conducting preliminary research before deciding whether to pursue full hazard investigations. These studies address themes of previous CSB investigations, but they emerged from internal brainstorming sessions rather than specific investigations. We were unable to obtain formal criteria used by the CSB to select a study topic.

Although the CSB has not defined when and how a discretionary hazard study might be a better use of its resources than a mandatory incident investigation, the CSB believes studies have a valuable impact on accident prevention. Several industry representatives agreed; one said that it would take far longer for the CSB to develop the information necessary to support regulatory recommendations through single incident investigations. Nonetheless, all pointed out that incident investigations must remain the CSB's priority.

The CSB board members told us that hazard studies remain subordinate to incident investigations. Although the CSB dedicated full-time staff to its first hazard study, the CSB says OISP staff now research hazards during investigative "downtime," which suggests there is little trade-off between incident investigations and hazard studies. However, we are not convinced that the time given to discretionary hazard studies could not be given to additional mandatory incident investigations. Although there may be "downtime" between incidents the CSB considers major, there are no significant breaks between incidents with consequences meeting subparagraphs (C)(i) and/or (E). The average gap between such notifications was two days.<sup>28</sup> Gaps over a week occurred only five times in 21 months, with the longest gap being 14 days. The CSB might use breaks during or between major investigations to develop smaller investigative products, but the CSB is choosing to research hazards instead.

In its 2001-2005 strategic plan, the CSB committed to one hazard study per year. In its FY 2004 appropriations request and new draft strategic plan, the

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<sup>28</sup> Based on incident screening matrix data. The CSB often receives more than one report meeting (C)(i) or (E) in a day, which this calculation takes into account.

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CSB pledged to increase its production to 12 safety products per year. The CSB has not defined what proportion of the 12 will be hazard studies. By applying a single label to both tasks, the CSB invites confusion over the number of investigations it actually undertakes. The CSB should clarify the cost-benefits of pursuing discretionary hazard studies when the CSB has insufficient resources to undertake mandatory mission components.

### **The CSB Can Pursue a Broader Strategy**

With recent accomplishments including increased productivity, the CSB has improved the fulfillment of its basic legislative responsibilities. As the CSB matures, it could expand its strategy to prevent chemical accidents for several reasons. First, the CSB statutes and legislative history describe broader responsibilities than the CSB currently meets. Second, the CSB needs data-driven measurement criteria to assess the impact of its prevention efforts. Third, the CSB can help address gaps in national chemical accident data. The CSB should pursue a broader strategy if it is to learn whether and how chemical accidents might be prevented more effectively.

The CSB's 2001-2005 strategic plan states that the CSB's core purpose is to protect workers, the public, and the environment by investigating and preventing chemical accidents. Previously, management issues hindered the conduct of investigations, its primary mission. However, based on congressional and OIG guidance, leadership changes, and a summer 2002 strategic plan revision, the CSB refocused on increasing investigative productivity and promoting its recommendations. Investigative productivity and capacity are increasing, and CSB management issues and mission disagreements have abated. Ongoing operations suggest that the CSB intends to limit an expansion of its role. New goals contained in July 2002 strategic plan revision and draft 2003-2008 strategic plan reflect a narrowed focus: the CSB has redirected former goals related to outreach and cut most goals related to data collection and analysis. While we support the idea that the CSB may need time to internalize recent positive changes, we also believe that the CSB has broader responsibilities for chemical accident prevention that the CSB should fulfill.

### **Statutes Indicate a Broader Role for the CSB**

A review of the CSB's statutory authority and legislative history led us to conclude that the CSB has responsibilities beyond its current productivity goals and strategic plans. According to subparagraphs (C)(i), (E), and (C)(iii), the CSB needs to plan to address its investigative gap and meet its statutory

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requirement to issue a reporting regulation, two tasks that will likely require the CSB to refine its relationship with EPA, OSHA, the NTSB, and other parties. Furthermore, subparagraph (S) of the CSB's statute also supports the CSB's expansion of its chemical accident prevention efforts:

*(S) The Board shall submit an annual report to the President and to the Congress which shall include, but not be limited to, information on accidental releases which have been investigated by or reported to the Board during the previous year, recommendations for legislative or administrative action which the Board has made, the actions which have been taken by the Administrator or the Secretary of Labor or the heads of other agencies to implement such recommendations, an identification of priorities for study and investigation in the succeeding year, progress in the development of risk-reduction technologies and the response to and implementation of significant research findings on chemical safety in the public and private sector.*

Although the Federal Reports Elimination and Sunset Act of 1995, Pub. L. No. 104-66, exempted the CSB from submitting an annual report, we question whether the CSB's responsibilities under (S) are fully relieved by the change. The responsibilities described in this subparagraph are substantive as well as administrative. Some of these responsibilities the CSB already meets; for example, it publishes information on the accidental releases the CSB investigates each year on the CSB website. However, the CSB does not routinely assemble other related information, including analysis of the accidental releases reported to the CSB each year, identification of priorities for investigation in the succeeding year, status of the development of risk-reduction technologies, and status of implementation of significant research findings on chemical safety. The CSB has not yet fully defined which chemical accidents it considers to be within its statutory purview for investigation, and it has not yet adopted objective means for identifying and prioritizing its hazard studies and investigations. Whether or not the CSB reports to Congress on the items in (S), the OIG concluded that the CSB would benefit by developing the information for internal and public use.

Ultimately, the elements of subparagraph (S) demonstrate that Congress intended the CSB to develop and act on a broader perspective of chemical accident prevention than the current CSB operations and plans involve. Excerpts from its legislative history support the proposition that the CSB should have a national leadership role in chemical accident prevention:<sup>29</sup>

- *The board is . . . to function as a source of expertise at the center of the chemical accident prevention and response programs of the Federal Government.*

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<sup>29</sup> Senate Report No. 101-228. 1990 CAA Leg. Hist. 8338, 8547-8548.

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- *The board, through its investigations and reports, is to drive the regulatory agenda in this field [accident prevention at facilities handling extremely hazardous substances].*
  - *The board may also serve as a point of communication among the various Federal agencies to improve the effectiveness of accident prevention programs and reduce the burden of duplicative requirements on regulated entities.*

These statements suggest the CSB should do more than produce 12 safety products per year.

### **Current Measurement Criteria Do Not Ensure the CSB Can Demonstrate Its Effectiveness**

The CSB should obtain and define measurement criteria to assess its impact. The CSB noted, “Investigative and research efforts need to be focused where they can provide the greatest benefit in preventing accidents.”<sup>30</sup> However, the CSB does not have the data to confirm that its efforts prevent accidents. The CSB does not have access to statistically valid data on the characteristics and frequency of all chemical accidents within its purview. Without benchmark data on the chemical accident universe, the CSB will be challenged to justify how it prioritizes its workload and to show it is helping to prevent chemical accidents.

The CSB’s current data indicators have limits, and measuring its effectiveness will be an increasing concern for the CSB.<sup>31</sup> To comply with the Government Performance and Results Act (GPRA), the CSB is working to demonstrate its effectiveness, such as by defining measurable goals in its strategic plan. One CSB performance goal is to “achieve industry wide implementation of the CSB recommendations and related accident prevention measures.”<sup>32</sup> This goal meets GPRA requirements that it be quantitative or directly measurable. The CSB can account for whether the recipient implements a recommendation; the measurable outcome is an implemented recommendation. However, what the

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<sup>30</sup> *FY 2003 Budget Justification and Annual Performance Plan.*

<sup>31</sup> Beginning in FY 2002, OMB required that agencies begin submitting Performance and Accountability Reports (PAR). Consequently, the CSB prepared its first PAR as part of its FY 2002 consolidated financial statement audit. The report contains financial and performance information that enables Congress, the President, and the public to assess the performance of an organization relative to its mission. The PAR satisfies several reporting requirements for agencies, including the Government Performance and Results Act.

<sup>32</sup> U.S. Chemical Safety and Hazard Investigation Board, *Strategic Plan*, July 2002.

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CSB strategic plan does not measure is the impact of this outcome: whether implementing the recommendation made a difference in preventing chemical accidents. For the CSB, using recommendation outcomes to demonstrate that the CSB achieves its impact goal of “preventing chemical accidents” is difficult, even if the CSB validates what resulted from the recommendation.

GPRA allows an agency to define a performance goal in a descriptive manner that is not self-measuring, such that one cannot determine whether the goal was met by comparing actual performance to a quantified target level. If a performance goal is not self-measuring, the agency must include in its plan one or more performance indicators for the goal. The performance indicators set out specific, measurable values or characteristics related to the performance goal, which aid in assessing goal achievement. Examples of performance indicators include common forms of measurement: incidence rates, lengths, weights, percentages affected, and frequency measurements. In fact, the CSB’s goal for recommendations adoption (80 percent) could be considered a performance indicator. The CSB can more easily assess its efforts by applying these indirect types of measurement. However, were the CSB to shift its emphasis from counting implemented recommendations to analyzing the effect of the implementation, the CSB would be nearer to measuring its impact on preventing chemical accidents.<sup>33</sup> The NTSB published a requirement to analyze its proposed recommendations in order to assess their predicted safety effect, and the CSB should emulate this practice.

Furthermore, the CSB will need benchmark data about the chemical accident universe if it is to demonstrate that accidents are being prevented. To help generate measurable chemical accident data, the CSB is working with EPA to increase the frequency of company-submitted RMP accident reports, from every five years to each year. While this is a positive improvement, even the CSB members agree that it is a small step. In a paper analyzing RMP data, an EPA staff member noted as an unanswered question: “Does the [RMP] database constitute a large enough sample of chemical facilities to determine risk distributions with significant confidence to make decisions about low-frequency, high-consequence events?”<sup>34</sup> We already have noted that RMP covers a limited number of chemicals and facilities. The scope of the CSB’s investigative work extends well beyond RMP’s scope. Of the ten investigations the CSB initiated during the 21-month period in the screening

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<sup>33</sup> For further discussion, see Ludwig Benner Jr., *Ranking Safety Recommendation Effectiveness*, International Society of Air Safety Investigators, Proceedings of 1992 conference, Dallas, Texas.

<sup>34</sup> James C. Belke, *Chemical accident risks in U.S. industry - A preliminary analysis of accident risk data from U.S. hazardous chemical facilities*, September 25, 2002.

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matrix, only five (50 percent) occurred at RMP-covered facilities. If the CSB pursues measurements of the chemical accident universe, it must look beyond RMP.

### **The CSB Can Address the National Chemical Accident Data Shortfall**

Last year, the CSB informed Congress:<sup>35</sup>

*The United States presently lacks any comprehensive national data system simply to track the occurrence of accidental chemical releases. Individual government agencies have separate reporting requirements and maintain separate databases. Efforts at uniting these databases (by the CSB and others) have not been fruitful. The lack of reliable accident data hampers the CSB and other agencies from measuring national progress in accident reduction and identifying emerging hazards.*

The lack of reliable and comprehensive chemical accident data is a national issue, and not one that the small CSB can resolve unilaterally. However, the CSB is in a position to help improve shortfalls in chemical accident data collection.

Many of our interviewees concurred that data-gathering and the lack of sound trend analysis on chemical accidents is a problem needing resolution. Multiple databases are already in place.<sup>36</sup> Although the National Response Center has the capability to serve as a consolidated collection point for incident reports, in reality, other agencies, including OSHA, ATSDR, and state and local entities, collect different information through separate reports. For several government agencies to collect reports creates duplicative work for companies and first responders. Industry and trade group representatives told the OIG they support a system to collect comprehensive and measurable data if the system relieves the burden of multiple report requirements. However, there is little consensus on how to define which data to include, a crucial step.

The CSB has its own interests in developing comprehensive chemical accident data. The ability to survey and analyze a defined chemical accident universe would permit the CSB not only to develop better measurements of the impact of accident prevention efforts, but also to develop more objective means to prioritize its work and stronger support for its safety recommendations. The

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<sup>35</sup> FY 2003 Budget Justification and Annual Performance Plan. The CSB did not reiterate this challenge in FY 2004.

<sup>36</sup> See *Feasibility of Using Federal Incident Databases to Measure and Improve Chemical Safety*, Mary Kay O'Connor Process Safety Center, (MKOPSC Report 2002-02, April 2002).

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CSB has shifted strategically in how it pursues these interests. In February 1999, the CSB attempted to produce a composite database of nationwide chemical accidents, but in December 2000, the CSB withdrew the report,<sup>37</sup> citing serious flaws in the data upon which the report was based. The CSB signaled in its 2001-2005 Strategic Plan that it would continue to pursue developing a “system for chemical accident data collection and analysis” to remedy the lack of an “accepted measure of the frequency of chemical accidents that are within the purview of the CSB.” However, more recently the CSB withdrew its goal of developing an accident data system. The CSB has removed other efforts from its recent strategic plans, including: (1) a national discussion of key metrics, methodologies, and requirements for chemical accident data collection and analysis; and (2) initiation of a design for performance metrics.

The CSB board members remain interested in addressing issues affecting the quality of incident data, but their interest now falls below a strategic level. In November 2002, the CSB convened a roundtable discussion with EPA and OSHA for the purpose of identifying measures to improve EPA’s data collection program. EPA is now considering whether to require companies who submit RMP reports every five years to add accident data to their reports quarterly. The measures are supposed to benefit the CSB and other government agencies that look at accident rates. However, because RMP covers a limited number of facilities and chemicals, the rates revealed may say little about the broader chemical accident universe within the CSB’s purview. When we asked whether the CSB was pursuing any data initiatives beyond the RMP project, the chairman referred to the CSB’s recommendation to OSHA in *Improving Reactive Hazard Management*, which calls for OSHA to (1) implement a program to define and record information on reactive incidents that OSHA investigates or requires to be investigated under OSHA regulations and (2) structure the collected information so that it can be used to measure progress in the prevention of reactive incidents that give rise to catastrophic releases. Again, the changes the CSB supports do not address the issue of assessing the chemical accident universe as a whole.

Regardless of whether the CSB sees a larger role for itself in resolving the accident data collection problem, the CSB has already represented that the problem affects its work. In its FY 2003 strategic plan, the CSB cited “data inadequacies” as one of its four challenges. The challenge arguably meets OMB’s criteria for “key factors, external to the agency that could significantly

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<sup>37</sup> *The 600K Report: Commercial Chemical Incidents in the United States 1987-1996.*



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affect the achievement of general goals.”<sup>38</sup> OMB notes that, in a strategic plan, “An agency may describe significant risks that threaten achievement of general goals.”<sup>39</sup> The CSB’s current strategic revisions do not include this information.

The CSB is uniquely positioned to coordinate federal efforts to improve chemical accident data collection. The CSB’s statutes and legislative history clearly state that the CSB should work to guide the chemical accident prevention efforts of the federal government, particularly EPA and OSHA, two of the most prominent data collectors. The legislative history charges the CSB to work to reduce duplicative reporting requirements. Existing federal databases contain useful data on chemical accidents.<sup>40</sup> However, their individualization has complicated previous attempts to create a commonly useful system. As a first step in improving chemical accident data, the CSB might coordinate an assessment of what it would take to unify existing data productively. It would be a challenge for the CSB to build consensus about how to define a reportable accident and to demonstrate the cost-effectiveness of altering data collection efforts. Nevertheless, at least according to statute and legislative history, the challenge is a CSB responsibility.

A 2002 study conducted by the NTSB is instructive. The NTSB relies on many external databases when performing accident investigations, safety studies, and special investigations. Most of these databases are sponsored and operated by the modal administrations of the U.S. Department of Transportation (DOT). The NTSB studied transportation safety databases to evaluate data quality issues and to encourage improvements in this area. The effort had four specific objectives: (1) highlight the value and potential uses of transportation safety data; (2) describe some accident and incident databases commonly used by the NTSB; (3) summarize past recommendations involving transportation data; and (4) evaluate Bureau of Transportation Statistics (BTS)<sup>41</sup> efforts to establish data quality standards, identify information gaps, and ensure compatibility among the safety data systems maintained by DOT. Finding that inadequate data reduces the ability of the federal government to understand safety problems and target safety resources,

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<sup>38</sup> OMB Circular No. A-11, Section 210.1(b).

<sup>39</sup> OMB Circular No. A-11, Section 210.2.

<sup>40</sup> Mary Kay O’Connor Process Safety Center, *Defining Indicators and Metrics for Measuring Improvements in Chemical Safety*, (MKOPSC Report 2002-03, April 2002).

<sup>41</sup> In 1991, Congress created the Bureau of Transportation Statistics (BTS) within DOT to be a central statistical agency responsible for compiling and analyzing transportation statistics, issuing data collection guidelines, making statistics accessible, identifying information needs, implementing a comprehensive long-term data collection program, and coordinating the collection of statistical information.

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the NTSB issued a recommendation to the BTS to develop a long-term program to improve the collection of data describing exposure to transportation risk in the United States. There is no equivalent to the BTS or its data collection efforts for the chemical field, and the CSB lacks the resources to create one. However, the interplay between the BTS and NTSB helps to illustrate the magnitude and importance of efforts to improve safety data collection.

The CSB does not plan to develop independent chemical accident data, as the NTSB, which has a reporting regulation, does with air carrier accident data. CSB officials generally agree that collecting information on more accidents would enable the CSB to build a data set that would make the CSB's recommendations more persuasive, but they do not agree this is an efficient use of the CSB's finite resources. The CSB chairman suggested that interested parties should work to unify, update, and streamline existing chemical accident databases. The CSB would like to see EPA and OSHA create a common database that all agencies could use to understand the accident universe and target improvements. However, the CSB has not planned to seek this change. The CSB plans instead to cull disjointed accident data from multiple sources when needed in support of CSB investigations, even though the CSB already reported on the limitations of this process in *Improving Reactive Hazard Management*. The CSB has also discussed exploring other federal incident data systems such as the ATSDR's.

The CSB's current vision speaks little to the role the CSB may play in resolving the chemical accident data collection problem. In five years, the CSB hopes to be "a nationally recognized chemical safety investigative agency, respected for our timely, high quality investigations and recommendations, our technical expertise, our products, effective management, and model work environment." While the CSB's desire to focus on investigative work and promote its recommendations is a reasonable short-term goal, other entities are keenly interested in seeing the CSB commit to enhancing the quality of chemical accident data. The OIG encourages the CSB to expand its strategic role in resolving the accident data collection problem so that the CSB may measure its impact, target its resources at the most significant accident trends, and develop stronger support for its safety recommendations.

We recommend that the Chairman:

**Recommendation 1:** Develop a plan to describe and address the gap between the number of accidents the CSB investigates and the number falling within its

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statutory investigative jurisdiction. Include this information in future budget submissions to Congress and the Office of Management and Budget.

**Recommendation 2:** Define what constitutes a chemical accident within the CSB's purview and publish a regulation that outlines how the CSB will receive information on these accidents.

**Recommendation 3:** Evaluate the CSB's performance on recommendations follow-up and consider policies and practices to improve the CSB's timeliness for closing recommendations.

**Recommendation 4:** Establish a plan linking measurement data and strategic improvements that enables the CSB to assess and enhance its impact on chemical accident prevention.

**Recommendation 5:** Develop a long-term strategy to address the shortfall in national chemical accident database quality.

## **Opportunities to Enhance the CSB Administration**

The CSB has done much to build its structure and policies to support its work as an independent federal agency since FY 1998. We identified opportunities to improve the CSB's administration. The CSB's incident selection process, which is used to identify accidents to which the CSB will deploy, needs stricter management controls to ensure the accuracy, reliability, and quality of screening and screening data. In particular, the CSB must revise the process to ensure that the CSB managers consider accidents meeting statutory criteria for deployment. In addition, the CSB should revisit a tabled 2000 recommendation from the GAO on developing a policy for managing conflicts of interest. Finally, the CSB needs to publish additional records and policies to comply with the Administrative Procedure Act, Freedom of Information Act, and Electronic Freedom of Information Act amendments.

### **Incident Selection Process Requires Improved Management Controls**

The CSB is confident that its incident selection protocol enables the CSB to select deployments that yield meaningful investigative reports. At the same time, staff has expressed interest in refining the protocol, and the CSB began considering revisions in summer 2002. We found several weaknesses that the CSB should include in reconsidering the protocol. Currently, the first phase of the selection process does not ensure that CSB managers consider for

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deployment all accidents that meet the statutory criteria for investigation. Additionally, there are inadequate management controls on the CSB duty officer's decisions to elevate or eliminate incidents for deployment consideration. Finally, there are inadequate quality controls on the incident notification and screening data, which serve as important historical records.

### **The CSB's Process Does Not Ensure Statutorily-Mandated Investigations Are Considered for Deployment**

In November 1999, the CSB followed a Senate Appropriations directive to develop a protocol for sifting through incident notifications to select and prioritize investigations. Including input from two national roundtables, the CSB developed a two-part selection process. In the first phase, a duty officer from the OISP staff receives the notifications from the media, National Response Center, NTSB, and a few other sources. Notifications are received at any time, with the NTSB's 24-hour staff contracted to provide support when the CSB employees are off-duty.<sup>42</sup> The duty officer screens the notification by deciding whether to record or discard it. If the incident is not discarded, the duty officer enters it into a spreadsheet matrix that captures qualitative background information and assigns a numerical score based on the accident's actual and potential consequences. For example, an incident receives 16 points for each public or first responder fatality. To evaluate an accident's potential consequences, the duty officer multiplies the actual consequence score by a factor of six if the facility falls under EPA's Risk Management Program, an indicator of potentially serious offsite consequences. The duty officer flags all accidents scoring above a threshold of 50 points and forwards them to the director of the Office of Investigations and Safety Programs (DISP) to consider deployment.<sup>43</sup> The objective scoring process is designed to filter out notifications that do not meet deployment criteria. As written, first-phase screening criteria leave little room for the duty officer's discretion, for the duty officer has not been delegated authority to make deployment decisions.

The DISP, a staff team including the COO, and the board members, in that order, apply managerial discretion in choosing deployments.<sup>44</sup> They evaluate the accident according to five subjective criteria: how feasible it is for the CSB to undertake the investigation at the time, the accident's community

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<sup>42</sup> While the staff member screens all notifications during duty hours, during non-duty hours the NTSB holds the notifications to submit on the next duty day, paging the CSB only when the accident involves multiple fatalities.

<sup>43</sup> When the OISP reorganized, the CSB replaced the DISP with three team leaders who report to the COO. For simplicity, this discussion refers to the DISP, which should be understood as a designated manager within the OISP.

<sup>44</sup> The COO has authority to deploy a team before board member review.

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impact, what public recognition the accident has, history of similar accidents and number of similar facilities, and how much might be learned from that particular investigation. Few notifications undergo this managerial review. About eight percent of incidents recorded in the screening matrix between March 13, 2001, and January 3, 2002, were considered by the DISP, and only one percent of the notifications rose to be considered by the board members for deployment.<sup>45</sup>

In reviewing the CSB's incident selection process, we concentrated on the first phase because in that phase over 90 percent of notifications (1,023 of 1,111) were eliminated. The CSB commented that some eliminated accidents were simply outside the CSB's jurisdiction. However, the CSB has not yet defined which accidents it considers within its jurisdiction, such as through its incident screening guidance or required reporting regulation. Therefore, for the purposes of this review, we considered accidents that the CSB logged in the incident screening matrix to be within the CSB's jurisdiction. The primary weakness of the first selection phase is that the CSB structured the scoring in a way that does not flag the accidents to which the CSB is required to deploy by subparagraphs (C)(i) and (E) of its statute. According to subparagraph (C)(i) of its statute, the CSB is responsible for investigating any incident resulting in a fatality, serious injury, or substantial property damages. Additionally, according to subparagraph (E), the CSB *must not forgo* investigating any incident in which such consequences actually or potentially affect the public. Nevertheless, the duty officer's first-phase screening eliminated the majority of notifications that the OIG review of notification data found to meet these deployment criteria.

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<sup>45</sup> These percentages reflect 88 and 11 of 1,111 notifications that the duty officer recorded.

FIGURE 4.—*Incident Notifications Considered for Deployment*

	Considered for Deployment		Eliminated During First-Phase Screening	
	Met Threshold Score	Did Not Meet Threshold Score	Met Threshold Score	Did Not Meet Threshold Score
All notifications	33	55	1	1022
Notifications meeting (C)(i)	20	47	0	397
Notifications meeting (E) due to actual consequences	1	0	0	7
Notifications meeting (E) due to potential or unclear consequences	24	3	0	67

A little less than half the accidents in the screening matrix met the investigation criteria in subparagraph (C)(i)—any fatality, serious injury, or substantial property damage—but they were inconsistently flagged. Most did not meet the threshold, and the duty officer eliminated them before the CSB managers considered deployment. Of the accidents that met (C)(i) during the 21-month period, the duty officer eliminated 397 of 464 notifications. Thus, such accidents received deployment consideration from the DISP less than 15 percent of the time. Even accidents that involved *all three* consequences—fatality, serious injury, and substantial property damage—were forwarded for second-phase review less than half the time (eight of 17).

Accidents that meet the investigation criteria in subparagraph (E) were frequently eliminated as well, even though they are an even greater priority for the CSB to investigate. The CSB’s September 2000 report on the incident selection process abbreviates: “Thus, if adequate resources are available, the CSB *must* investigate any accident where a member of the public is killed or seriously injured, but in many other cases the board needs to exercise discretion in deciding whether to initiate an investigation.” [emphasis added] However, we found that most accidents with public fatalities or injuries are eliminated from consideration by the duty officer during first-phase screening. Using the CSB’s records, we identified five accidents in which a member of

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the public and three in which a first responder was killed or seriously injured. The duty officer eliminated seven of these from deployment consideration during the first phase. The one accident that scored above the threshold, Kaltech Industries, was elevated to second-phase screening and approved for a full investigation.

More than these eight accidents might have met (E). Over a 21-month period, at least seven additional incidents that might compel deployment also did not receive second-phase consideration. For example, we found three accidents involving substantial public property damage.<sup>46</sup> One became the Third Coast Industries investigation, and the two others were never forwarded for consideration. We found six more notifications that also may have met (E), but the CSB did not verify the seriousness of the consequences or whether they affected the public. The duty officer eliminated five of those accidents, all of which scored under the threshold, from deployment consideration.

Furthermore, the above count of accidents meeting (E) is based on actual public consequences, and it does not include potential public fatalities, serious injuries, and significant property damage, which also fall under (E). The screening matrix's RMP multiplier identifies many facilities with the potential for public harm; at least 86 accidents during the 21-month period had this potential. However, even though the CSB marked these accidents as having the potential to cause public harm, the duty officer eliminated 61 of them without second-phase consideration. Of those 61, 17 also caused actual serious injury or significant property damage (not among the general public) and yet still were eliminated. Moreover, more than 86 incidents showed potential for public harm. As noted earlier, the RMP factor flags only a portion of the accidents with potential for public harm; others, such as the accident at First Chemical Corporation, were not flagged. Accidents without the RMP factor are even more likely to be eliminated from consideration by the duty officer. The duty officer eliminated 94 percent of accidents without the RMP multiplier, compared to 71 percent of incidents with it.

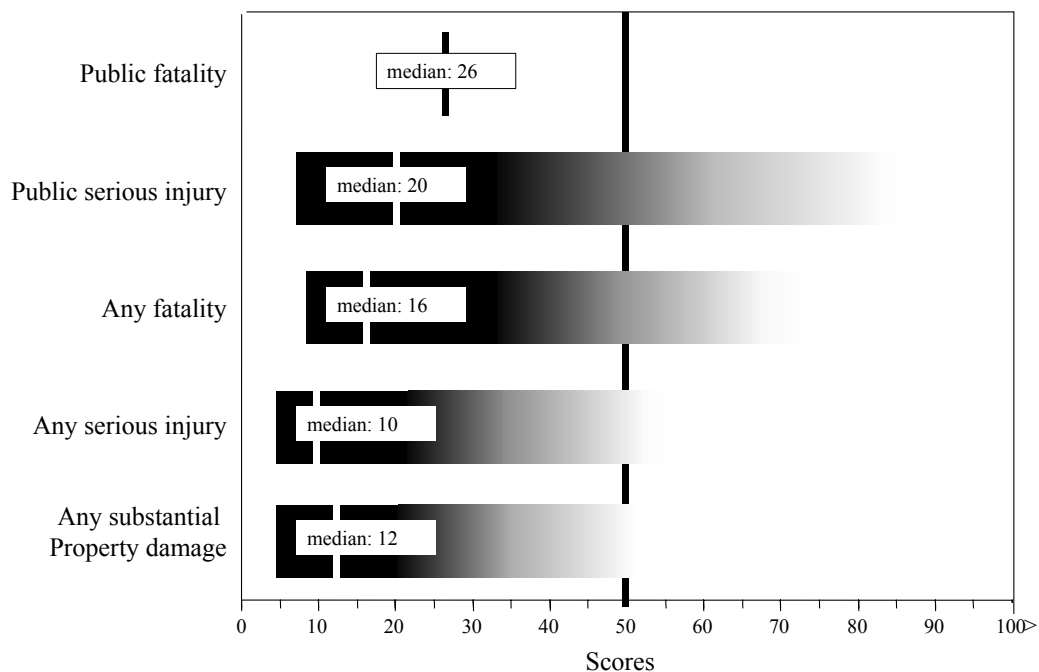
In conclusion, the CSB's scoring procedure does not directly relate an incident's consequences to the statutory criteria that mandate deployment. Because the total accident score and threshold are the main factors used to flag accidents for deployment consideration, specific consequences meriting deployment can go unnoticed. For example, when an exploding oil storage

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<sup>46</sup> Curiously, subparagraph (E) requires the CSB to investigate potential public property damage but makes no specific mention of actual public property damage. For this reason, we counted significant, actual public property damage as *possibly* meeting (E).

tank caused second and third-degree burns to a teenager walking in a nearby field, the notification scored only eight points and received no follow-up from the CSB. This serious public injury should have risen for deployment consideration under subparagraph (E). According to the CSB’s statement, only second-phase resource considerations should have prevented the CSB from deploying to this accident.<sup>47</sup> However, because first-phase screening did not flag the low-scoring accident, second-phase screening did not occur. As shown in the chart below, the vast majority of notifications that met (C)(i) and (E) criteria scored well below the 50-point threshold for second-phase consideration. Median scores for accidents with these consequences were at 26 or below. Therefore, it is not surprising that the CSB did not consider many accidents meeting (C)(i) and (E) for deployment. Moreover, the threshold caused the CSB to consider for deployment some accidents that met neither (C)(i) nor (E); eight of the 88 accidents receiving second-phase review (nine percent) were of this type.

FIGURE 5.— *Distribution of Notification Scores with Actual Consequences That Met Investigation Criteria in Subparagraphs (C)(i) and (E)*



<sup>47</sup> *Process for Selecting Accident Investigations.*



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It would be possible for the CSB to recalibrate its existing scoring system to raise the score of accidents with fatalities, serious injuries, and substantial property damage. However, the existing system is set up in a manner that does not fully distinguish which of those consequences affects the public. Instead, the scoring system divides consequences primarily by whether they occur onsite or offsite. While this may be a useful distinction, it results in records that blur the difference between accidents that invoke (E) and (C)(i). For example, there is no mechanism in the matrix to distinguish offsite public fatalities. Also, for onsite consequences, the scoring criteria mix together serious injuries that affect visitors and first responders with those that affect workers and contractors. Thus, the scoring system does not highlight public injuries that compel deployment under (E). We had to re-read incident notifications to extrapolate that data. The screening matrix requires substantial revision if it is to flag all accidents which meet the investigation criteria in subparagraphs (C)(i) and (E).

### **Inadequate Management Controls**

The first phase of incident selection requires revision because there is inadequate management control over the duty officer's work. In practice, the duty officer has sole authority to record or discard all notifications that the CSB receives. For example, when we asked why a high-scoring accident involving worker inhalation injuries was not forwarded for second-phase review, the duty officer explained that the accident simply should not have been recorded in the first place. It is not clear why that is so. The written screening criteria do not clearly define which notifications the duty officer should record or discard.

In the screening matrix there are notifications that arguably might not have been recorded with the others: transportation and pipeline accidents, a foreign accident, and more than 100 zero-scoring accidents with no injuries, property damage, or offsite consequences. On the other hand, missing from the matrix are 279 of the 495 notifications that the National Response Center sent the CSB in FY 2002. Since the CSB's MOU requires the NRC to send notifications involving fatalities and serious injuries at fixed facilities, one would expect all NRC notifications to be recorded, but less than half are. A duty officer explained that many of the NRC notifications do not meet the MOU criteria, and our review of recorded NRC notifications supported that possibility. However, since no records of the discarded NRC reports are kept, there is no mechanism to verify that the duty officer's discards are appropriate. Moreover, the duty officer records accidents outside fixed

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facilities and zero-scorers in some cases, which is inconsistent with the explanation professed for not recording the NRC notifications.

The CSB needs to define which types of accidents, including what types of facilities and consequences, must be scored in the screening matrix. The CSB should allow itself the flexibility to record accidents for historical, non-deployment purposes, but these records should be clearly differentiated. In addition, the CSB needs to emplace stricter record keeping and supervisory review to ensure that duty officers do not discard notifications through error or malfeasance. Under the existing system, because first-phase screening duties are not segregated, it is possible for the duty officer to discard relevant incident notifications.

The CSB also needs to emplace management controls on the amount of discretion exercised by the duty officer. As designed, the officer is to submit accidents that meet the threshold, without exercising decision-making authority. In practice, however, the officer decides also to elevate many accidents that do not meet the threshold. The CSB relies on the duty officer to select low-scoring accidents for deployment consideration; five of the ten deployments in the screening matrix were to accidents that did not meet the threshold. Almost two-thirds of the notifications the duty officer elevated to second-phase review (55 of 88) were below the threshold. However, there are no standards to distinguish which low-scoring accidents the duty officer should elevate. For example, of the 15 sub-threshold accidents that involved a fatality, serious injury, and significant property damage, the duty officer elevated six but eliminated nine. Since the duty officer is not a CSB manager and does not have delegated authority to make deployment decisions, the CSB needs to revise the first-phase selection process.

The CSB may wish to delegate authority to the duty officer and hold him or her accountable for these judgments, but a more complete system of management controls will involve segregation of duties, supervisory review, and stricter record keeping. In the past, the DISP did not formally review any notifications but the ones that the duty officer forwarded for deployment consideration. For example, the duty officer has been the only CSB staff member to see the vast majority of NRC notifications. Of 464 accidents meeting (C)(i) and (E), 86 came solely from NRC notifications, and the duty officer alone judged them unsuitable for deployment consideration. This is inappropriate because a CSB staff member without decision-making authority should not make judgments involving statutory compliance.

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Having a manager within the OISP provide secondary review of notifications meeting (C)(i) and (E) would be more appropriate and would not impose an undue burden on the CSB. Such notifications appear on average about one per day, although the CSB does not receive them at a consistent rate. While the CSB once recorded seven statutory notifications in one day, 86 percent of such notifications occurred no more frequently than twice a day, and days with none were most common. All accidents that meet statutory investigation criteria should receive second-phase deployment consideration in addition to the duty officer's first-phase review.

### **Inadequate Quality Controls**

Finally, the CSB has inadequate control over the quality of the incident notification and screening data. One duty officer developed the screening matrix informally to support first-phase screening, but the matrix has grown into an agency record.<sup>48</sup> In addition to supporting the decisions during incident selection, the screening matrix has been used to support the CSB hazard investigations, and the CSB relies on the matrix to answer historical inquiries. Thus, the CSB needs to manage the quality of this data for completeness, accuracy, timeliness, and usefulness. Specifically, the CSB needs to develop a mechanism to control which notifications the duty officer scores, so that the matrix more completely reflects the accidents reported to the CSB. Also, the CSB needs to verify the accuracy of matrix scores. We found several accidents in the matrix with mis-scored consequences and invalid RMP multipliers. In fact, one of the zero-scoring notifications involved serious offsite property damage and potentially met (E); this accident should have scored between 8 and 24 points. Some of these errors could be prevented by incorporating self-correcting and error checking mechanisms into the screening matrix. Adding data quality checks on the completeness and accuracy of the recorded notifications will result in a more reliable deployment selection process.

Better management of the notification data will help the CSB derive secondary benefits as well. The CSB is missing an opportunity to measure the effectiveness of its screening and selection process by not standardizing and augmenting the screening data for analysis. The CSB should be able to judge

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<sup>48</sup> Per 44 U.S.C. 3301, records include all books, papers, maps, photographs, machine-readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of the data in them.

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and maximize the matrix's timeliness and usefulness. For example, the CSB could be using the data in the screening matrix to evaluate how effectively its current notification system supports its objective of deploying to an accident site within 24-48 hours. Several of the CSB staff informed us that they rely on the media because it provides the timeliest notifications. However, we determined that only 13 percent of the media's notifications arrive on the same day as the accident, whereas 45 percent of the NRC's notifications do. Objective analysis of the notification data can be more reliable than the staff's subjective evaluation.

Regular analyses of the screening data could supplement other subjective evaluations the staff and board members make, including second-phase deployment consideration and selection of hazard studies. Currently, the informal "clips" help support these choices, but the CSB could do more. While the screening matrix will never be a complete record of all chemical accidents, it is a record of chemical accidents to which the CSB might have deployed. It sets a floor for types of accidents occurring. The current data enables the CSB to count how many accidents to which it might have deployed in a year were it fully funded, something the CSB has not calculated.

The data would also allow the CSB to identify facilities with repeated accidents and roughly to count notifications per industry sector. Some of these assessments can be made with the CSB website's Chemical Incident Report Center database, which has overlapping data and forms for standardized reports. However, the website database is also an incomplete record without data quality controls, and the CSB updates it less frequently than the screening matrix.<sup>49</sup> The CSB should upgrade the screening matrix to a database to extend its potential for analysis.

The CSB needs immediate improvements for the first phase of the selection protocol, but the CSB also needs to look at long-term improvements for the second phase as well. Basing first-phase incident selection on statutory criteria is defensible and will help the CSB filter out more than half of its notifications for possible investigations. However, because of its limited resources, the CSB is unable to investigate 100 percent or even ten percent of the remaining accidents that do meet the statutory criteria. How will the CSB best choose among these accidents? Currently, deployment choices are based on the subjective judgment of the CSB management and board members. This

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<sup>49</sup> According to a comparison of 2002 records. The screening matrix has not been updated since the CSB's primary duty officer departed in early 2003. The CSB is hiring a new duty officer and plans to reactivate the matrix and record backlogged notifications then.

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process, too, is defensible; it resembles the NTSB's process and allows the CSB the flexibility to weigh hard-to-measure factors such as past and ongoing CSB work and the frequency of particular accidents. However, the second phase may be more subjective than necessary. In time, the CSB should consider prioritizing investigations based on criteria that target risks identified through objective analysis of incident and industry trends. Because of the CSB's small size and newness, its incident selection has not often been questioned, but as the CSB's reputation grows, so will scrutiny of its choices. Incident selection is a critical process that the CSB must continue to refine.

### **The CSB Needs To Finish Policy on Conflicts of Interest**

In July 2000, the General Accounting Office responded to a congressional request to review the effectiveness of the CSB in carrying out its mission.<sup>50</sup> We assessed the CSB's actions in response to five recommendations made by the GAO to develop and implement clear policies and procedures in the investigation protocol. The CSB implemented four of the recommendations, but it tabled the suggestion that it publish a policy to manage staff conflicts of interest. The CSB should sharpen its policy concerning conflicts.

In its January 2001 response to GAO, the CSB agreed with GAO's recommendation and stated it was developing a regulation on staff conflicts of interest that it expected to publish in the Federal Register by March 2001. The CSB indicated several months would elapse because of the rulemaking process. However, it has not published the regulation. The CSB took some action in April 2001 by approving Board Order 21, the CSB Ethics Program. The order appointed the general counsel to administer the CFR-outlined basics of an ethics program, including annual training and financial disclosure statements. However, the CSB does not have a policy to govern employees' retaining memberships in societies or organizations to which the CSB issues recommendations. Furthermore, the CSB does not have a regulation on contractors, and the CSB's website has no contractor ethics standards.

We followed up with CSB attorneys concerning the CSB's conflict of interest policy. The attorneys responded, "Care continues to be taken to insure that board members and employees avoid a situation that could create a potential conflict. To date, there have been few concerns. To further address this area, the CSB may issue a supplemental ethics regulation for its employees, a regulation on organizational conflicts of interest to address contractor matters, and/or may add provisions to its protocol on conflicts issues." The CSB

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<sup>50</sup> *Chemical Safety Board: Improved Policies and Additional Oversight Needed.*

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employees, particularly investigative personnel recruited heavily from the private sector, must always be aware of potential conflicts of interest. In keeping with its continued efforts to strengthen its administrative infrastructure, we encourage the CSB to extend its ethics policy to address memberships.

### **The CSB Needs To Publish Additional Records and Policies**

The CSB has published in the Federal Register and on its website regulations covering the Freedom of Information Act (FOIA), the Privacy Act, the availability of unpublished information, CSB testimony, and the Sunshine Act. However, the CSB has not fully complied with federal standards for publishing certain information in the Federal Register, making information available electronically, and furnishing other information upon request. Although noncompliance may not have hampered the CSB operations significantly, the degree to which the CSB may or may not be affected does not excuse it from its statutory requirements to make information available to the public. There are primarily three categories of information that the CSB must prepare and either publish immediately or make available upon request.

First, 5 U.S.C. § 552(a)(1) states that an agency must publish in the Federal Register its organization structure, rules of procedures, scope and content of agency records and reports, and substantive rules and statements of general agency policy. The CSB has not published regulations for its organizational structure, nor has it published a required accident reporting regulation. The CSB has published partial regulations regarding its investigative work, which address availability of information and materials, requests to withhold information, right to representation, and records of legal proceedings. Some CSB discretion will be involved in defining the CSB's substantive rules and statements of general policy. The CSB could benefit by reviewing what information other independent agencies publish according to the standards of section 552(a)(1). We compared the CSB's significant regulatory publications with those of the seven agencies with which we benchmarked the CSB in an earlier report (see Appendix D). Several of these also have investigative functions. The majority has published regulations on agency organizational structure, reporting requirements, and inspection or investigation procedures.

Second, 5 U.S.C. § 552 (a)(2) states that an agency must prepare and make available in its public reading room final opinions, statements of policy and interpretations which have been adopted by the agency and are not published in the Federal Register, administrative staff manuals and instructions, "frequently requested records" in FOIA-processed form, and an index to

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facilitate public access to such information. The Electronic Freedom of Information Act Amendments of 1996 (E-FOIA), which amended 5 U.S.C. § 552, require that all agencies make certain types of records created by the agency available electronically to improve and ensure public access to agency records and information. Because the CSB began operations after November 1, 1996, all of its records related to section 552(a)(2) must be in its electronic reading room. However, the CSB's FOIA program, and E-FOIA program in particular, do not fully comply with the statute.

We compared NTSB and CSB publications to identify areas in which the CSB may need or wish to issue policy-related regulations in accordance with section 552(a)(1) or to publish policy and information on its website in accordance with section 552(a)(2). For example, the NTSB published regulations governing its investigative protocol, addressing issues such as the conduct of investigations and availability of public dockets on information collected during investigations. In addition, the NTSB provides on its website a link to those regulations, along with a summary of the investigative process, the composition of its deployment team, and so forth. The NTSB published delegations of authority, including authority for employees to take depositions during investigations and to disclose investigative facts. The NTSB published dockets and its internal staff manual for aviation investigations on the Internet.<sup>51</sup>

In contrast, the CSB has neither regulation nor web-published policy for routine investigative items such as authority, scope of investigation, delegation, investigator-in-charge, authority of board representatives, the flow and dissemination of accident information, and proposed findings. Some of these items are in the CSB's statutes; and some have been discussed in assorted narrative on the CSB's website. Some are addressed in the CSB's unpublished investigative protocol, an administrative staff manual, which section 552(a)(2) may require to be published. Some investigative issues, such as external comments on draft reports, are addressed in published CSB regulations or guidelines. There are no public dockets of these investigations on the CSB website; the CSB maintains all investigative information on completed accident investigations in the investigative file. In other words, except for the investigation reports themselves, the CSB investigative policies and information have been developed and published in a fragmented and incomplete manner.

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<sup>51</sup> National Transportation Safety Board, *Aviation Investigation Manual Major Team Investigations*, (<http://www.nts.gov/Aviation/Manuals/MajorInvestigationsManual.pdf>).

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We discussed the CSB’s compliance with sections 552(a)(1) and (2) with the general counsel, who explained that the CSB delayed developing and publishing items due to the CSB’s newness, limited resources, and past organizational and management issues. While the CSB has published some regulations and policies, gaps are the result of a deliberate strategy to prioritize items that resolve issues most critical to investigators in the field. For example, issues raised during investigations spurred the CSB to publish a regulation on the role of attorneys representing accident witnesses. The CSB has relied on its statutes to address other issues up to this point. While it is true that the CSB has the authority to clarify its role and behavior during an investigation, waiting for problems to occur that highlight regulatory and policy needs is a questionable strategy. For example, in the absence of published policies, a company may take greater liberty to impede the CSB’s access to its plant and staff and to affect how the CSB operates once inside the plant. Industry representatives and the CSB staff noted two investigations where this may have occurred. The conduct of the CSB is less likely to suffer interference when the CSB can point toward published regulation and policy.

Third, 5 U.S.C § 552(g) states that an agency must prepare and make available upon request reference material or a guide for requesting records or information from the agency, including: (1) an index and description of the agency's “major information systems”; (2) a description of the agency's “record locator systems”; and (3) a handbook for obtaining various types and categories of public information from the agency. The CSB has not published a system of records pertaining to investigative activity or made available descriptions of what information is kept regarding investigations. The general counsel stated that the CSB waits to provide such information upon request, because infrequent requests show insufficient interest to justify publication. However, we note that in the absence of published record descriptions, it is more difficult for the public to identify records to request. In the supporting analysis for “Management of Federal Information Resources,” OMB noted: “Every agency has a responsibility to inform the public within the context of its mission. This responsibility requires that agencies distribute information at the agency's initiative, rather than merely responding when the public requests information.”<sup>52</sup> Furthermore, as the CSB’s body of work and reputation grow, the CSB should prepare for public information requests to grow as well.

In 1999, the CSB won an award for the quality and content of its website, and its Chemical Incident Report Center database continues to receive praise. But the CSB is still working toward greater transparency and compliance with

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<sup>52</sup> *Management of Federal Information Resources*, (OMB Circular No. A-130 Revised, Appendix IV, February 8, 1996).



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FOIA and E-FOIA. Recently, the CSB issued “Interim Final Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Disseminated Information,” which address how the CSB will handle external feedback on its investigative reports. Since the CSB recently resolved key organizational and management issues, the CSB planned to publish regulations on its organizational structure and delegations of authority in FY 2003. However, the CSB did not do so. The CSB also planned in FY 2003 to update its investigative protocols; these also should be published. We encourage the CSB to adopt a proactive stance toward complying with FOIA and E-FOIA and developing public transparency.

We recommend that the Chairman:

**Recommendation 6:** Revise the incident selection process to ensure that all accidents meeting statutory investigation criteria are considered for deployment by a manager with delegated authority for such decisions.

**Recommendation 7:** Revise the incident selection process to incorporate appropriate levels of supervision and separation of duties associated with receiving, evaluating, and recording or discarding notifications.

**Recommendation 8:** Improve its recordkeeping of the selection process, including a definition of which types of notifications the CSB will record or discard, to manage the quality of incident selection data and enable the CSB to analyze it in the future.

**Recommendation 9:** Publish a policy regarding employee conflicts of interest related to investigations.

**Recommendation 10:** Enact required administrative regulations, including the CSB organization.

**Recommendation 11:** Publish policies and administrative guidance on the CSB website, particularly regarding the conduct of investigations, but also including other relevant materials such as board voting records and orders.



**U. S. Chemical Safety and Hazard Investigation Board**  
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John Bresland  
Board Member

Carolyn W. Merritt  
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December 9, 2003

Robert L. Ashbaugh  
Assistant Inspector General for Inspections, Evaluations, and Special Reviews  
U.S. Chemical Safety and Hazard Investigation Board  
Office of Inspector General  
Washington, DC 20528

Dear Mr. Ashbaugh:

Thank you for the opportunity to comment on your draft report, "Continuing Development of the U.S. Chemical Safety and Hazard Investigation Board". Your inspection found that the U.S. Chemical Safety and Hazard Investigation Board (CSB) has increased its productivity and stability under new management during the past year. Further, the CSB is progressing towards meeting our statutory responsibilities and has increased the number of investigations performed. In addition the CSB meets other responsibilities to issue recommendations, coordinate with other federal agencies, and perform discretionary studies of general chemical hazards.

Your report made 11 recommendations to enhance our administration. We suggest that these recommendations be consolidated to 8 recommendations since there is some overlap. Specifically, recommendations 4 and 5 both address chemical accident data and could be addressed by a single recommendation. In addition, recommendations 6, 7, and 8 address the incident selection process and could be consolidated into one recommendation.

The CSB is taking action to address the concerns raised in your report. In many cases, your recommendations are consistent with steps the new management has recognized and already taken or plans to take as resources are available. The following discussion addresses each of your recommendations.

**OIG Recommendation 1.** *Develop a plan to describe and address the gap between the number of accidents the CSB investigates and the number falling within its statutory investigative jurisdiction. Include this information in future budget submissions to Congress and the Office of Management and Budget.*

**CSB Response.** The CSB concurs with the intent of the recommendation and agrees it would be beneficial to investigate more chemical accidents and determine their root causes. With fewer than 20 investigative staff and an annual budget of \$8 million, the

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Board lacks the resources to investigate more than a small percentage of the accidents that fall within its legal jurisdiction. The added value of investigating very minor incidents even if they fall within the agency authority becomes an issue of diminishing returns. The Board feels the agency has responded to its understanding of current Congressional intent and has utilized the limited resources available for its mission. The Board does not believe that conducting a larger number of superficial investigations would either conform to the legislative intent of the Clean Air Act Amendments or serve the ultimate goal of reducing accident rates. Furthermore, the Board's experience with investigations conducted by other agencies or organizations from 1998-2000 that relied on contractors and staff of other government agencies, was that the investigations were more costly, less effective, and did not meet the CSB's technical standards.

The CSB agrees that, owing to the lack of comprehensive national statistics, Congress and the executive branch are likely to be unaware of the extent of injuries, damage, and dislocation caused by chemical accidents. In an effort to remedy this lack of information, the CSB will, beginning with fiscal year 2004, submit to Congress and the Office of Management and Budget an account of the total number of incident reports received and a listing of the serious chemical accidents evaluated by the agency for possible deployment. The list will include available information on the circumstances and effects of these accidents. The agency is also seeking appropriations committee report language clarifying that the intent of Congress is that the CSB use its limited financial resources to investigate a prioritized set of significant accidents, chosen using the agency's established selection criteria, and management and Board expertise.

**OIG Recommendation 2.** *Define what constitutes a chemical accident within the CSB's purview and publish a regulation that outlines how the CSB will receive information on these accidents.*

**CSB Response.** The CSB acknowledges that it has not yet developed a regulation requiring the reporting of chemical incidents falling within its jurisdiction. Instead, the CSB has developed non regulatory alternatives using resources from the NRC and the NTSB that allow it to respond to major incidents under its jurisdiction within 24-48 hours. It has postponed undertaking a formal regulation for a number of reasons, including the significant financial and staffing implications for the Board and possible burden on affected parties. Given the questions concerning the benefits of and potential impacts of such a regulation, the CSB must seek additional guidance from OMB and the House and Senate Authorizing and Appropriations Committees before it commits to a long-term regulatory plan of action. In light of the statutory language and the OIG's recommendation, the CSB will seek this guidance and define a further course of action by June 30, 2004.



**OIG Recommendation 3.** *Evaluate the CSB's performance on recommendations follow-up and consider policies and practices to improve CSB's timeliness for closing recommendations.*

**CSB Response.** Accept recommendation. The number of CSB recommendations have increased dramatically in the past two years due to its increased investigative productivity. With the increase has come an imperative to track and close the recommendations more expeditiously. The CSB has recently reorganized to establish a separate recommendations supervisor with three staff, has developed a recommendations tracking database, and has initiated contact with recipients of all previous recommendations. A major effort to close old recommendations and keep current on new ones will be made the first half of FY 2004. Continued adequate funding will be an essential part of our ability to achieve this mission focus.

**OIG Recommendation 4.** *Establish a plan linking measurement data and strategic improvements that enables the CSB to assess and enhance its impact on chemical accident prevention.*

**CSB Response.** In its five-year strategic plan, the CSB has set measurable goals for its investigation activity and its recommendation implementation activity. These goals will clearly demonstrate the CSB's effectiveness in carrying out the expectations set out for the agency in the annual appropriations bills from Congress. The CSB, working in concert with other federal agencies and private organizations, expects to help reduce the incidence of chemical accidents over time. Based on the industry-government-public interest group roundtable conducted in FY 2003, the best available metric for measuring this reduction at present is EPA's RMP database. No one agency or private organization will be able to take credit for any decline in the incidents reported to this database, but the activity of each can be expected to have an effect. The CSB does not envision establishing any additional measurement devices that measure the impact of CSB activity alone, but does expect to continue working with others to continue to improve the best available measure for chemical incidents. The shortfall in national chemical accident database quality recognized by the OIG presents some difficulties for the CSB, as the OIG noted. As the OIG also noted, CSB has been directed by Congress to focus on investigation activity, not data gathering. Also, as the OIG notes, there is no organization in the US that focuses on data quality for chemical safety such as the Bureau of Transportation Statistics does for transportation safety. The CSB will continue to work with other agencies to improve the quality of chemical accident databases.

**OIG Recommendation 5.** *Develop a long-term strategy to address the shortfall in national chemical accident database quality.*

**CSB Response.** See response for Recommendation 4.

**OIG Recommendation 6.** *Revise the incident selection process to ensure that all accidents meeting statutory investigation criteria are considered for deployment by a*

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*manager with delegated authority to receive, evaluate, and record or discard notifications.*

**CSB Response.** We agree with the recommendation. Revision of the investigation selection process is a current initiative in the CSB's FY 2004 action plan. In particular, CSB will ensure that the revised selection process contains the following:

- Clearer definition of incidents within the CSB's purview under (C)(i) and (E). The terms of CSB's agreements with NTSB and NRC will be reviewed to ensure that these incidents are being reported to the CSB.
- Clearly defined lines of authority and control between the incident screeners (duty officers) and the Board to ensure that decisions regarding incident selection and investigation deployment, which could involve statutory compliance, are made with proper management control and oversight.
- Improved recordkeeping of incident notifications and follow-up activities, to ensure that the decision-making process is transparent and amenable to analysis in the future. To this end, the screening matrix will be upgraded to a database.

CSB will implement a revised incident selection process by September 30, 2004. In the interim, the CSB will reinstitute the use of the selection matrix to record notification and selection activities. The CSB is currently trying to fill two investigator positions and will train these individuals to serve as incident screeners.

**OIG Recommendation 7.** *Institute management controls on the incident selection process, including supervision and separation of duties to ensure that no CSB member has sole, unsupervised authority to receive, evaluate, and record or discard notifications.*

**CSB Response.** See response for Recommendation 6.

**OIG Recommendation 8.** *Develop controls, including a definition of which types of notifications the CSB will record or discard, to manage quality of included selection data and record keeping.*

**CSB Response.** See response for Recommendation 6.

**OIG Recommendation 9.** *Publish a policy regarding employee conflicts of interest related to investigations.*

**CSB Response.** The CSB agrees with this recommendation. As the OIG has indicated, such a policy would be consistent with the CSB's "continued efforts to strengthen its administrative infrastructure." The CSB agrees that the policy should address employee participation in professional associations and will also publish guidance on contractor issues.



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**OIG Recommendation 10.** *Enact required administrative regulations, including the CSB organization.*

**CSB Response.** The CSB generally agrees with this recommendation. Consistent with the recommendation, the CSB has recently published a regulation on its organization, functions, quorum and voting procedures. In addition, as discussed above, the CSB will also pursue further action on a reporting regulation. Finally, the CSB will employ the benchmarking information provided by the OIG, and exercise its discretion to determine what additional regulations on investigative functions should be published.

**OIG Recommendation 11.** *Publish policies and administrative guidance on the CSB website, particularly regarding the conduct of investigations, but also including other relevant materials such as board voting records and orders.*

**CSB Response.** The CSB agrees that it can take additional steps to improve the public's understanding of its functions. The CSB will work to ensure that materials which are required, by 5 U.S.C. § 552(a)(2), to be made available electronically are published on the agency website. Specifically, as noted above in response to recommendation 10, the CSB will determine what additional information on investigative functions should be published. In addition, consistent with 5 U.S.C. § 552(g), the CSB will prepare a guide for requesting records and information from the agency, and will make that guide available in its physical and electronic reading rooms. Finally, the CSB will use the benchmarking information provided by the OIG, along with post-9/11 guidance from the Department of Justice and the White House, to determine what optional, but helpful, information could be included on its website.

Again, we thank you and your staff for the opportunity to comment on your draft report and for your recommendations to improve our administration.

Sincerely,



Carolyn W. Merritt  
Chairman

**Recommendation 1:** Develop a plan to describe and address the gap between the number of accidents the CSB investigates and the number falling within its statutory investigative jurisdiction. Include this information in future budget submissions to Congress and the Office of Management and Budget.

**Management Comments and OIG Analysis:** The CSB concurred with the intent of the recommendation and agreed that it would be beneficial to investigate more chemical accidents and determine their root causes. The CSB cited its lack of resources to investigate more than a small percentage of the accidents that fall within its legal jurisdiction. The CSB believes it has responded to its understanding of current Congressional intent and conducting a larger number of superficial investigations would neither conform to the legislative intent of the Clean Air Act Amendments nor serve the ultimate goal of reducing accident rates. The CSB agreed that Congress and the Executive branch are likely to be unaware of the extent of injuries, damage, and dislocation caused by chemical accidents. Beginning in fiscal year 2004, the CSB will submit to Congress and OMB an account of the total number of incident reports received and a listing of the serious chemical accidents evaluated by the agency for possible deployment. The CSB will also seek guidance from Congress for investigating a prioritized set of significant accidents that it has identified.

We concur with the CSB's response. However, the extent that the CSB is going to address the gap between the number of accidents it investigates and the number falling within its statutory investigative jurisdiction is not clear and must be stated forthrightly in its report to Congress. The CSB will satisfy this recommendation once it submits its first report to Congress.

**Recommendation 2:** Define what constitutes a chemical accident within the CSB's purview and publish a regulation that outlines how the CSB will receive information on these accidents.

**Management Comments and OIG Analysis:** The CSB acknowledged that it has not yet developed a regulation requiring the reporting of chemical incidents falling within its jurisdiction, but it has developed non-regulatory alternatives. It has postponed undertaking a formal regulation for a number of reasons, including the significant financial and staffing implications for the Board and possible burden on affected parties. Given the questions concerning the benefits of and potential impacts of such a regulation, the CSB must seek

additional guidance from OMB and Congress before it commits to a long-term regulatory plan of action. In light of the statutory language and the OIG's recommendation, the CSB will seek this guidance and define a further course of action by June 30, 2004.

We concur with part of the CSB's response. In response to recommendation six, the CSB stated that it will more clearly define incidents under the CSB's purview and this will benefit the incident selection process. The CSB will satisfy this recommendation by defining these accidents and obtaining guidance from OMB and Congress regarding its reporting regulation.

**Recommendation 3:** Evaluate the CSB's performance on recommendations follow-up and consider policies and practices to improve the CSB's timeliness for closing recommendations.

**Management Comments and OIG Analysis:** The CSB accepted the recommendation. In response to the increasing number of recommendations, the CSB is tracking and closing them more expeditiously. The CSB has recently reorganized to establish a separate recommendations supervisor with three staff, has developed a recommendations tracking database, and has initiated contact with recipients of all previous recommendations. With adequate funding, the CSB will make a major effort to close old recommendations and keep current on new ones during the first half of FY 2004.

We concur with the CSB's response and consider the recommendation closed.

**Recommendation 4:** Establish a plan linking measurement data and strategic improvements that enables the CSB to assess and enhance its impact on chemical accident prevention.

**Management Comments and OIG Analysis:** The CSB responded that in its five-year strategic plan, it has set measurable goals for its investigation activity and its recommendation implementation activity. The CSB believes these goals will clearly demonstrate the CSB's effectiveness. The CSB, working in concert with other federal agencies and private organizations, expects to help reduce the incidence of chemical accidents over time. It cited EPA's RMP database as the best available metric for measuring this reduction and asserted that no one agency or private organization will be able to take credit for any decline in the incidents reported to this database, but the activity of each can be expected to have an effect. The CSB does not envision



establishing any additional measurement devices that measure the impact of CSB activity alone, but does expect to continue working with others to continue to improve the best available measure for chemical incidents. The CSB implied in its response that circumstances beyond its control will hinder its ability to carry out the recommendation.

We acknowledge the CSB's willingness to continue to work with other agencies to improve the quality of chemical accident databases. Our aim is to cause the CSB to determine how it might better evaluate its impact. The CSB's primary metrics--counting the number of safety products issued and the overall percentage of recommendations implemented—are at most a weak reflection of whether the CSB contributes to reducing chemical accident rates. We encourage the CSB to seek measurement devices that tell more about the impact of CSB work and that enable the agency to target its resources more strategically. Improved national data that capture chemical accident rates might help the CSB demonstrate that general chemical accident prevention efforts are having a positive impact. However, this is not the only means by which the CSB might pursue improved metrics. Another means would be for the CSB to develop more detailed data about the results of its recommendations. Moving beyond the overall percentage of implementations, the CSB might rate the relative importance of its recommendations and analyze what changes they spur. For example, the NTSB develops and monitors a list of "Most Wanted" recommendations, reflecting an ongoing effort to monitor or bring about change in the transportation industry. As the CSB's recommendations program grows, the CSB may find illustrative performance data there.

The CSB could satisfy this recommendation by modifying its strategic plan or expanding work within the recommendations program, to include analytical assessments of outcomes generated by its recommendations. We would like the CSB to reconsider these actions before this recommendation is closed.

**Recommendation 5:** Develop a long-term strategy to address the shortfall in national chemical accident database quality.

**Management Comments and OIG Analysis:** The CSB acknowledged the shortfall in national chemical accident database quality recognized by the OIG and the difficulties it presents for the CSB. The CSB repeated that Congress has directed the CSB to focus on investigation activity, not data gathering. The CSB stated that there is no organization in the US that focuses on data quality for chemical safety such as the Bureau of Transportation Statistics

does for transportation safety. The CSB will continue to work with other agencies to improve the quality of chemical accident databases.

The CSB's response that it will continue to work with other agencies is not a long-term strategy. Gathering quality chemical accident data is a complex issue, but we maintain that the CSB has the authority to expand its role and has a strong interest in improved accident data. This recommendation should remain open until the CSB either reports to Congress on specific improvements it has made or informs Congress explicitly that it will not do so.

**Recommendation 6:** Revise the incident selection process to ensure that all accidents meeting statutory investigation criteria are considered for deployment by a manager with delegated authority for such decisions.

**Management Comments and OIG Analysis:** The CSB suggested that we combine recommendations 6-8 into one recommendation. While these particular recommendations all address aspects of the incident selection process, they have three different focal points, and we elected not to combine them. The CSB referred to its response to recommendation six for its responses to recommendations seven and eight, so we took this to mean CSB agreed with all three recommendations. The CSB may satisfy all three recommendations through its proposed action plan.

The CSB agreed with the recommendation. It intends to revise the investigation selection process in its FY 2004 action plan. To ensure that all accidents meeting statutory investigation criteria are considered, the CSB will more clearly define incidents within the CSB's purview under (C)(i) and (E). CSB will review the terms of its agreements with the NTSB and the NRC to ensure that they report these incidents to the CSB.

We concur with the CSB's response. We will consider recommendation six closed when the CSB publishes newly defined statutory investigative criteria that require a staff member with appropriately delegated authority to make the decision to deploy or not to deploy to a reported incident.

**Recommendation 7:** Revise the incident selection process to incorporate appropriate levels of supervision and separation of duties associated with receiving, evaluating, and recording or discarding notifications.

**Management Comments and OIG Analysis:** The CSB agreed with the recommendation. Its action plan will contain clearly defined lines of authority and control between the incident screeners (duty officers) and the Board to ensure that decision regarding incident selection and investigation deployment are made with proper management control and oversight.

We concur with the CSB's response. CSB will satisfy this recommendation by addressing the necessary separation of duties in incident selection and deployment, in its action plan. We modified our recommendation to be more explicit regarding the need to separate duties between CSB members.

**Recommendation 8:** Improve its recordkeeping of the selection process, including a definition of which types of notifications the CSB will record or discard, to manage the quality of incident selection data and enable the CSB to analyze it in the future.

**Management Comments and OIG Analysis:** The CSB agreed with the recommendation. In its FY 2004 action plan, it will revise the selection process by improving recordkeeping of incident notifications and follow-up activities. The CSB will upgrade the screening matrix to a database.

We concur with the CSB's response. We would consider this recommendation closed upon receiving the action plan that will reflect these changes. We modified our recommendation to clarify the need for better controls over recordkeeping.

**Recommendation 9:** Publish a policy regarding employee conflicts of interest related to investigations.

**Management Comments and OIG Analysis:** The CSB agreed with the recommendation. It agreed that the policy should address employee participation in professional associations. The CSB will also publish guidance on contractor issues.

We concur with the CSB's response. The CSB did not offer a timetable for this action. This recommendation will remain open until the CSB publishes these policies.

**Recommendation 10:** Enact required administrative regulations, including the CSB organization.

**Management Comments and OIG Analysis:** The CSB generally agreed with this recommendation. The CSB recently published a regulation on its organization, functions, quorum, and voting procedures and it plans to pursue further action on a reporting regulation. The CSB will also consider benchmarking information provided by the OIG and decide what additional regulations on investigative functions it should publish.

We concur with the CSB's response. We reviewed the CSB's new regulation, which it published shortly after we issue our draft report. The regulation does not include delegations of authority. The CSB will satisfy this recommendation by publishing regulations on reporting incidents and its delegations of authority.

**Recommendation 11:** Publish policies and administrative guidance on the CSB website, particularly regarding the conduct of investigations, but also including other relevant materials such as board voting records and orders.

**Management Comments and OIG Analysis:** The CSB agreed that it could take additional steps to improve the public's understanding of its functions. The CSB will ensure that materials required under 5 U.S.C. § 552(a)(2) are published on the agency's website. The CSB will determine what additional information on investigative functions it should publish.

We generally concur with the CSB's response. However, absent a proposed deadline to make information available electronically and because what investigative information should be published remains unresolved, we are leaving the recommendation open.

We recommend that the Chairman:

**Recommendation 1:** Develop a plan to describe and address the gap between the number of accidents the CSB investigates and the number falling within its statutory investigative jurisdiction. Include this information in future budget submissions to Congress and the Office of Management and Budget.

**Recommendation 2:** Define what constitutes a chemical accident within the CSB's purview and publish a regulation that outlines how the CSB will receive information on these accidents.

**Recommendation 3:** Evaluate the CSB's performance on recommendations follow-up and consider policies and practices to improve the CSB's timeliness for closing recommendations.

**Recommendation 4:** Establish a plan linking measurement data and strategic improvements that enables the CSB to assess and enhance its impact on chemical accident prevention.

**Recommendation 5:** Develop a long-term strategy to address the shortfall in national chemical accident database quality.

**Recommendation 6:** Revise the incident selection process to ensure that all accidents meeting statutory investigation criteria are considered for deployment by a manager with delegated authority for such decisions.

**Recommendation 7:** Revise the incident selection process to incorporate appropriate levels of supervision and separation associated with receiving, evaluating, and recording or discarding notifications.

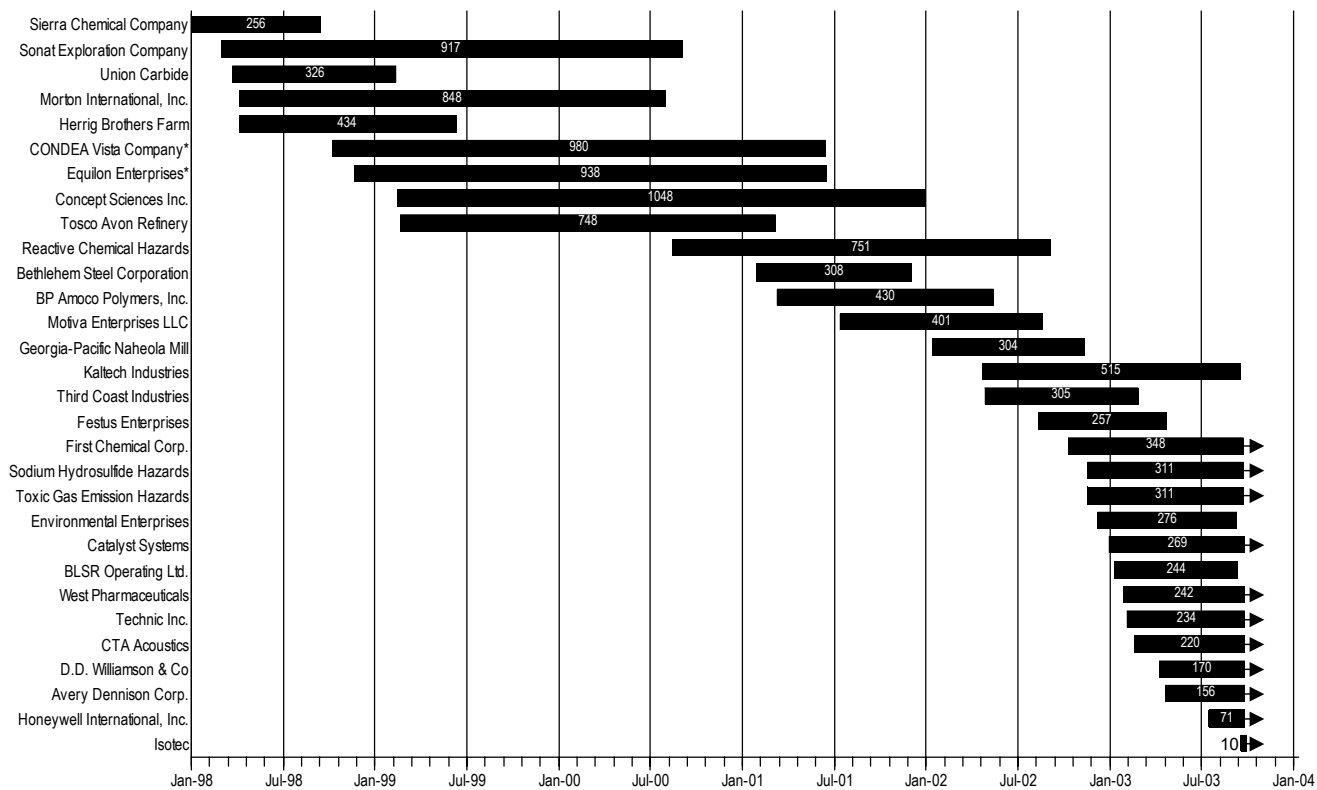
**Recommendation 8:** Improve its recordkeeping of the selection process, including a definition of which types of notifications the CSB will record or discard, to manage the quality of incident selection data and enable the CSB to analyze it in the future.

**Recommendation 9:** Publish a policy regarding employee conflicts of interest related to investigations.

**Recommendation 10:** Enact required administrative regulations, including the CSB organization.

**Recommendation 11:** Publish policies and administrative guidance on the CSB website, particularly regarding the conduct of investigations, but also including other relevant materials such as board voting records and orders.

Appendix D  
 Timeline of CSB Investigations (as of October 1, 2003)



\*These investigations were issued together in one study, the Management of Change bulletin.

This chart reflects selected published regulations of the CSB and the seven federal boards and commissions with which we benchmarked in our March 2002 report, *Issues Regarding Management Accountability, Control, and Direction Have Not Been Resolved*.

	Chemical Safety and Hazard Investigation Board	National Transportation Safety Board	Nuclear Regulatory Commission	Defense Nuclear Facilities Safety Board	Consumer Products Safety Commission	Federal Energy Regulatory Commission	Occupational Safety and Health Review Commission	Federal Housing Finance Board
<b>Title (CFR)</b>	<b>40</b>	<b>49</b>	<b>10</b>	<b>10</b>	<b>16</b>	<b>18</b>	<b>29</b>	<b>12</b>
Agency Organizational Structure	NP	800	1	NP	1000	375.39	NP	905
Reporting Requirements	NP	830, 840	21	NP	1115, 1116	330.2	NP	NP
Availability of Unpublished Information	1602	801	9.15	1703.103	1100	388.106	2201.5	911
Inspection or Investigation Procedures	NP	831	19.14	O225.1A <sup>53</sup>	1118	1b.1		
Agency Testimony	1611	835	9.200	1707	1016	388.111	NP	NP
Freedom of Information Act	1601	801	9.11	1703.105	1015	388.108	2201	910
Privacy Act Of 1974	1602	802	9.5	1705	1014	NP	2400	913
Sunshine Act	1603	804	9.100	1704	1013	375.203	2203	912

NP=Not published.

<sup>53</sup> The DNFSB investigates only the Department of Energy's defense nuclear facilities. One of the DOE Orders of Interest to the Board, O225.1A Accident Investigation, provides an official investigative procedure.



Appendix F  
Major Contributors to This Report

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William J. McCarron, Senior Inspector  
E. Wynne Krause, Inspector  
Lumumba Yancey, Program Analyst

**U.S. Chemical Safety and Hazard Investigation Board**

Chairman/CEO  
OIG Audit Liaison

**Office of Management and Budget**

DHS OIG Budget Examiner  
CSB Budget Examiner

**Congress**

Congressional Oversight and Appropriations Committees

**U.S. Environmental Protection Agency**

Inspector General

