

GAO

Testimony

Before the Subcommittee on Veterans Affairs, Housing and
Urban Development, and Independent Agencies,
Committee on Appropriations, U.S. Senate

To Be Released
At 5:30 p.m., EDT
Thursday,
April 29, 1999

CHEMICAL SAFETY BOARD

Status of Implementation Efforts

Statement for the Record
David G. Wood, Associate Director
Environmental Protection Issues
Resources, Community, and Economic Development
Division



Mr. Chairman and Members of the Subcommittee:

We appreciate this opportunity to provide a statement for the record for use in the Subcommittee's hearing on the fiscal year 2000 budget request for the Chemical Safety and Hazard Investigation Board (the Board). The Board recommends steps to enhance industrial safety based on its investigations of accidental release of toxic and hazardous chemicals and its other activities. The Board was funded at \$4 million in fiscal year 1998, its first year of operation, and \$6.5 million in fiscal year 1999. The Board is required to submit its budget request concurrently to the Office of Management and Budget (OMB) and the Congress. For fiscal year 2000, the Board has requested \$12.5 million while the President's budget, after OMB's review, has requested \$7.5 million for the Board.

You expressed concern that the new organization's operational costs, especially salaries, might grow too quickly and become excessive. At your request, we reviewed the status of the Board's efforts to carry out its mission. Specifically, we are providing information on the status of the Board's (1) investigations and recommendations, (2) pay structure and use of staff, and (3) contracting activities. We are also providing information on our concerns about the Board's actions.

In summary, we found the following:

- The Board has undertaken 11 full-scale investigations of chemical incidents and issued reports with recommendations on 2 of them. In addition, draft reports are in process for the remaining investigations. The Board's recommendations have aimed at encouraging industry and government agencies to upgrade their procedures, training, and communication of hazards.
- As of February 1, 1999, the Board had 20 employees widely distributed among its offices, such as investigations, general counsel, and external relations, and 4 Board members. The average compensation is about \$89,000 in salary and benefits. The Board expects this average compensation to be reduced to about \$68,000 if it receives approval to hire up to 60 employees.
- We identified eight contracts between the Board and other entities that cost \$100,000 or more. The total cost of the 8 contracts was about \$3 million. About one-third of this amount directly supported the Board's investigations. The balance involved acquiring such goods and services as the development of a web site, the establishment of a chemical incident data base, and the production of an informational video.

-
- We have two main concerns about the Board's actions to date. First, the Board has not updated its August 1997 Business Plan to reflect the unanticipated backlog of ongoing investigations. Critical to any effective plan for addressing this backlog is an examination of how the Board chooses cases to investigate and how it allocates its existing and future resources. Second, the Board has not instituted formal, written procedures for its staff to follow in awarding and managing contracts. Such procedures can help ensure adequate internal controls and help avoid some contracting problems encountered by the Board.

Background

The Board was created as an independent agency under the Clean Air Act Amendments of 1990.¹ However, the Board did not become operational until 1998 because of funding constraints. The act directed the Board to (1) investigate and report on the circumstances and probable causes of any accidental release of toxic or hazardous chemicals resulting in a fatality, serious injury, or substantial property damages; (2) recommend measures to reduce the likelihood or the consequences of accidental releases and propose corrective measures; and (3) establish regulations for the reporting of accidental releases. The act authorized the Board to conduct research and studies with respect to the potential for accidental releases and to issue reports concerning the prevention of chemical accidents to the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA). Furthermore, the Board is to coordinate its activities with other federal agencies such as the National Transportation Safety Board (NTSB) and OSHA.

According to relevant legislative committee reports, the Board is modeled after the NTSB, which retained the lead role in investigating transportation-related chemical incidents. The Board has no enforcement authority and a very limited regulatory role. Because the EPA and OSHA also have responsibilities in responding to chemical incidents, the Board has developed memorandums of understanding with these agencies to coordinate efforts and minimize potential duplication if they are investigating the same incident.

Chemical incidents occur regularly and often have serious consequences. According to a Board report, during the period 1987 to 1996, about 605,000

¹42 U.S.C. § 7412(r)(6).

known chemical incidents occurred, including about 250,000 chemical incidents that occurred at fixed locations occupied by industrial and commercial businesses and about 260,000 incidents related to the transportation of chemicals.² On average, 127 incidents per year involved fatalities.

Status of Investigations and Recommendations

To carry out its mission of enhancing industrial safety, the Board conducts full-scale investigations and limited investigations (called reviews) of chemical incidents and makes recommendations. The status of these activities is discussed in the following sections.

Investigations

By statute, the Board investigates accidental chemical releases resulting in a fatality, serious injury, or substantial property damage. These investigations often involve extensive site visits, evidence collection, and analytical work. Because of limited resources, the Board decides where to initiate investigations. In these decisions, it weighs such factors as the expected impact of its work and the potential for similar incidents at other locations. The Board uses in-house and contractor staff, but assigns leadership to its own staff. The lead investigator is expected to direct the work, visit the site as necessary, and manage the report writing process. While the Board currently follows the Department of Energy protocols for accident investigations, it is now developing its procedures and expects to complete them by next year.

The Board started five full-scale investigations in 1998 and, through March 30, six in 1999.³ Of the 11 investigations, 2 from 1998 have been closed and in each case, a report was issued. The first investigation took about 9 months and the second about 11 months from start to finish. Draft reports are in process for the remaining three investigations begun in 1998 and the six investigations begun in 1999.

Reviews

The Board conducts reviews when resources are not available to perform a field investigation, but knowledge about an incident could still provide valuable information for preventing future incidents. A review is

²The 600K Report – Commercial Chemical Incidents in the United States, 1987-1996 . . . February 1999.

³Unless otherwise noted, all references to years will be fiscal years.

performed within the Board's offices and relies mainly on documents and reports from other federal agencies and state agencies, as well as the companies' internal investigations. According to the Board, it takes about 40 days to gather and analyze information, which may not be available until 6 months after the incident, and additional time may be used to verify the facts and resolve legal and technical issues.

The Board started 14 reviews in 1998 and 9 in 1999. The Board has not issued any reports stemming from its reviews. As of March 30, 1999, it had closed 6 reviews with no report, was preparing a draft report for 3 ongoing reviews, and had yet to begin drafting a report for 14 ongoing reviews. According to an agency document, the six reviews were closed without reporting because, among other reasons, information was insufficient or conflicting, and some cases had limited application. Board officials told us, however, that the draft reports for the ongoing reviews are expected to result in valuable information for preventing future incidents.

Recommendations

As of March 30, 1999, the Board made a total of 22 recommendations in its two issued reports. The first report, dated September 1998, involved an accident at the Sierra Chemical Company in Nevada, where four workers were killed. The report contained 16 recommendations. The Board directed 10 recommendations to Sierra Chemical and other explosive manufacturers, 3 to the Institute of Makers of Explosives, 2 to the Department of Defense, and 1 to the Nevada Occupational Safety and Health Enforcement Section. The recipients of the first report have agreed to take corrective actions on 3 recommendations and are considering whether to take actions on the remaining 13.

The second report, dated February 1999, involved an accident at a Union Carbide plant in Louisiana, where 1 worker was killed. The report contained six recommendations. The Board directed two recommendations to Union Carbide and one each to the National Institute for Occupational Safety and Health, OSHA, the Center for Chemical Process Safety, and the Compressed Gas Association. The Board has received a formal response from Union Carbide and is aware of actions being considered by two other recipients of the recommendations. The company identified new safety policies that it would follow.

The Board's recommendations have aimed at encouraging industry and government agencies to upgrade their procedures, training, and communication of hazards. For example, the Board suggested that

explosive manufacturers evaluate their safety programs to ensure that (1) written operating procedures are specific to the process being controlled; and (2) procedures and chemical hazards are communicated in the languages understood by personnel. It also suggested that the Institute of Makers of Explosives develop safety training guidelines and distribute the Board's report to its member companies. A listing of each recommendation and its status is provided in appendix I.

To obtain recipients' reactions to the Board's recommendations, we contacted the Department of the Army and OSHA. Officials from both agencies told us that the reports were on target. An Army official indicated that his agency was considering the recommendations, and an OSHA official confirmed that the agency intended to implement the recommendation.

A Board official said the Board plans to have a system in place to track recommendations by the spring of 1999. According to a draft directive, this system will be called the Safety Recommendation Tracking System and will track recommendations from the time they are issued until they are closed. The system will be used to follow-up on open recommendations and keep a permanent record of all recommendations.

Current and Planned Staffing Levels, Responsibilities, and Salaries

The Board established a single-location organization with a central management office and five program functions, located in Washington, D.C.

Current Staffing Level and Responsibilities

As of February 1, 1999, the Board had 24 employees, including 4 of the 5 Board members. It expects to grow from 24 to 30 employees, including an additional board member, by the end of fiscal year 1999 and to 60 employees by the end of 2000 if its budget request of \$12.5 million is approved. According to its August 1997 Business Plan, the Board planned to grow to 88 employees in 2000, but it has now extended its timeline for this level of staffing to the end of 2001.

Table 1 identifies the allocation of staff, both current and planned, and assigned responsibilities in the agency organizational structure.

Table 1: The Board's Staffing Levels, Current and Planned, and Responsibilities, by Organizational Unit

Office	Current Staffing (2/1/99)	End Of 1999 Staffing (Planned)	End Of 2000 Staffing (Planned)	Responsibilities
Board member	3	4	4	Reviews and approves reports, recommendations, and regulations
Chairman/Chief executive officer and management	4	7	9	Provides daily program supervision and ongoing operational planning and evaluation; provides budgeting, technical writing, and overall support to the organization
General counsel	3	3	9	Provides full range of administrative and programmatic legal services
Safety programs	1	2	7	Directs design of safety policies and programs for the Board; oversees recommendations
Investigations	5	6	13	Conducts accident investigations and reviews; prepares reports
External relations	4	4	9	Disseminates public and media information; acts as liaison with business and academia; conducts governmental relations and international activities
Information technology	4	4	9	Oversees information technology systems and operational programs; conducts administrative operations
Total	24	30	60	

Note: The head of the Office of General Counsel also acts as head of the Office of Safety Programs.
Source: The Chemical Safety Board.

Salaries

As of February 1, 1999, the Board had one GS-7 staff member, one GS-12, two GS-13s, 16 GS-14s or above, and 4 Board members. With this grade structure in place, the average annual salary is \$81,146, excluding benefits, for on-board employees. (See app. II for more details.) Combining salaries and benefits, the average annual compensation per employee will be an estimated \$89,100 at the end of 1999. Board officials said that the 1999 average salary will decrease as the Board hires more employees and the personnel base on which the average salary is computed increases. In fact, the Board is requesting \$4.1 million in personnel compensation and benefits in 2000 for 60 positions; that would result in an average annual compensation package, combining salaries and benefits, of \$68,183 per employee in 2000.

In a proposal to the Office of Personnel Management, the Board asked approval for six senior executive positions. After consulting with OMB, the Office of Personnel Management approved one permanent and two

temporary positions. The Office said that it was awaiting the completion of this ongoing GAO study and it was obligated to maintain a reduced number of senior executives in the government. The Office of Personnel Management told the Board that its request would be re-evaluated during the fall, 2000-2001 biennial assessment period.

Contracting Activities

The Board contracted with outside entities to help carry out its mission during 1998 and 1999. Excluding the contract for renting office space, we identified eight contracts costing \$100,000 or more.⁴ The total cost of these contracts was about \$3 million. Table 2 provides information on these contracts.

⁴We excluded the contract for leasing office space because of its nondiscretionary nature.

Table 2: Board Contracts of \$100,000 or More, 1998 and 1999

Contractors	Purpose/description of contracts	Amount obligated
Oak Ridge National Laboratory (ORNL)	<u>Investigative support.</u> The contractor assists the Board by conducting several investigations and preparing reports, including managing investigations, collecting evidence, and conducting interviews. <u>Strategic Plan.</u> The contractor assists the Board in the development of a 5-year information technology plan. ORNL is a Department of Energy laboratory that provides support to various federal agencies. The \$758,000 listed here is the cost of requested services during 1998; as of March 1999, the Board has requested an additional \$915,000 of services.	\$758,000 915,000
Battelle Memorial Institute	<u>Investigative support.</u> The contractor assisted the Board in conducting the Sierra Chemical investigation in Nevada, including labor and material for technical services and preparing a written report of the chemical incident.	410,000
Tri-Data	<u>Establishment of chemical incident baseline and database.</u> The contractor analyzed and prepared a summary report on 10 years of data from five federal government agencies' data bases to establish a chemical incident baseline. Currently, the Board is designing a chemical incident data base that will be located at the Board and populated with data from at least the five government data bases. The data base is to be used to help show where, when, and how often incidents are occurring in a particular area. The information will form the basis for recommendations on programs, regulations, and other actions to help reduce chemical incidents. The report is scheduled for completion by May 31, 1999.	350,000
Bell-Atlantic	<u>Internet and Intranet web site development.</u> The contractor is expected to create and maintain a web site with documentation that includes file structures, database table structure, site architecture, and security information. A technical person from the contractor is dedicated full-time to the Board. The cost is not to exceed \$231,000 through September 1999.	231,000
Rowland Productions	<u>Informational video.</u> In August 1998, the Board contracted with Rowland to produce a video that portrays what the agency does. The intended audience for the video includes the general public, industry, employee and environmental groups, and government officials. Five companies competed for the contract. The selected vendor's offer includes plans for video insets tailored for specific audiences. Work was temporarily suspended on the video because of the press of other business in early 1999.	160,000
Federal Emergency Management Agency (FEMA)	<u>Internet service.</u> The Board contracted with FEMA to host, update, and administer the Board's web site and e-mail at a cost up to \$100,000 in 1998. <u>National Emergency Coordination Center.</u> During 1998 and 1999, FEMA provides the Board with a 24-hours-a-day, 7-days-a-week communications center that supports the Board at a cost of \$50,000 per year. (The 1998 charge was prorated.)	137,000
Bell-Atlantic	<u>Helpdesk support.</u> This is a 1999 award that covers helpdesk support and local area network support.	130,000

Contractors	Purpose/description of contracts	Amount obligated
National Ground Intelligence Center	<u>Software development.</u> In July 1998, the Board contracted with the National Ground Intelligence Center, an organization within the Department of Defense, to develop a civilian version of military intelligence software that will help a facility determine where its safety systems are prone to failure and how to best address the problems. The Center would develop a prototype initially then build toward a full operational capability that the Board plans to make available to companies for their confidential use. Software development would continue for a number of years. The total cost is not yet known, but the Board obligated \$100,000 in 1998 funds for this purpose and expects to spend another \$200,000 each year from 2000 through 2002, if funds are made available.	100,000
Total		\$3,191,000

Note: Dollar amounts are rounded to the nearest thousand.

Source: The Chemical Safety Board.

Concerns About the Board's Actions

On the basis of our review of the Board's actions to date, we have two main concerns. First, the Board has not updated its Business Plan to reflect the unanticipated backlog of ongoing investigations. Second, the Board has no written procedures for its staff to follow in awarding and managing contracts with outside entities.

Updated Business Plan

In its August 1997 Business Plan and support for its 1999 budget submission, the Board set forth its expectations that it would be able to complete its investigations within 6 months and conduct from 5 to 10 investigations during 1998 and from 13 to 19 investigations during 1999. However, the Board has completed and reported the results for two investigations since commencing operations in January 1998. These investigations took 9 and 11 months from start to finish. Actual in-the-field investigations have been concluded for another seven investigations, and draft reports have been in process since as long as April 1998. The Board has also yet to issue any reports based on its reviews. It closed 6 reviews without a report and, as of March 30, 1999, has 17 open reviews. Draft reports are in process for 3 of the 17 open reviews. Board officials told us that their expectations for conducting investigations in 1999 were based on getting requested funding. Also, their agency was not yet fully operating, and existing investigation resources were needed to complete the backlog of open investigations and reviews. As a result, the Board could undertake no new investigations from mid-March 1999 through the end of the fiscal year in September. On March 29, the Board wrote to this Subcommittee confirming its freeze on new investigations.

In our view, the unanticipated backlog and the slower-than-expected progress in completing ongoing investigations and reviews raise questions about how the Board decides which incidents to look into and how it allocates its staffing and financial resources. The Board does not intend to update its August 1997 Business Plan but is working with OMB to develop a strategic plan by February 2000 that complies with the Government Performance and Results Act. The Board intends to identify the criteria for selecting incidents in this strategic plan and reallocate resources as a management decision after addressing the backlog.

Criteria for Selecting Incidents to Investigate and Review

According to Board officials, about 200 chemical incidents are reported to the Board each day. Fatalities, serious injuries, and significant property damage often occur, and the Board does not have the resources to conduct an on-site, full-scale investigation of every incident with serious consequences or even a limited review of such incidents. In deciding which incidents to investigate and review, the Board uses criteria weighted toward accidents in which fatalities occur. Some judgment is still, of course, involved, and the Board uses factors such as a high level of interest that should make it easier to implement recommendations and the potential for similar incidents at other locations. The Board would have to weigh the various consequences of revising the criteria in ways that would either “raise or lower the bar”—in other words, be more or less selective in choosing which cases to pursue. By raising the bar, workload would be limited. Although factors such as complexity of the incident and the extent of cooperation by company officials affect how quickly cases can be completed, a more limited workload would help to speed up the closure of existing cases. By lowering the bar, workload would be increased and existing cases would tend to take longer to close or additional resources would need to be allocated to investigations, helping the Board to complete these cases more quickly.

Allocation of Resources

The Board's Business Plan, in setting expectations for the new organization, assumed a \$4 million budget in 1998 and a \$7 million budget in 1999. In its formal budget request, the Board asked for \$8.2 million for 1999. In its actual appropriations, the Board received the full \$4 million in its first year and \$6.5 million in 1999. According to the Board, it spent 30 percent of its \$4 million budget in 1998 on incident prevention (primarily investigations and reviews). The Board expects to spend 37 percent of its 1999 budget and 44 percent of its 2000 request for this purpose.

Regardless of what the Board expected its funding levels to be, the Board has encountered difficulties in handling its workload. An examination of

how the Board would allocate its existing resources and spend future funds—assuming differing levels of funding in 2000 and beyond—is critical to any effective plan for addressing the backlog of ongoing investigations and reviews.

One area for review is the Board's staffing allocation. According to the plan, the Board would establish a flat organization. To the maximum extent possible, it would buy services when and as needed, thereby keeping staffing levels and overhead costs low, and permitting the bulk of resources to be devoted to its mission. As of February 1, 1999, the Board employed four in-house investigators; one began work in July 1998, two in September 1998, and the other one in November 1998. The investigators have a caseload of two to three investigations and five to six reviews. At times, the Board also uses noninvestigative staff, such as program analysts, to assist with investigations and reviews. The Board also allocated four staff members to its external relations and three to its general counsel offices. If its budget request for 2000 is approved, the Board intends to have 13 (or 22 percent) of its 60 total personnel in its investigations unit compared with 9 each in its external relations and general counsel units (together equaling 30 percent of total staffing). The Board would allocate the remaining 29 staff (48 percent) to other offices, such as the Chairman's staff, safety programs, and information technology.

For comparison purposes, we obtained resource allocation information from NTSB—the agency considered in the legislative history as the model for the Chemical Safety Board. NTSB investigators comprise 40 percent of the organization's staffing while personnel in its legal and public affairs offices together comprise about 5 percent.⁵ Like the Board, NTSB investigators work on multiple investigations at a time and use contractors to support their work. Unlike the Board, NTSB can obtain voluntary services—labor hours that are not reimbursed—from outside entities. The Board has recommended to the Congress that it be authorized to obtain these voluntary services.

To deal with the existing backlog of cases and expected new cases, the Board could also review its use of funds now spent on contracting. About two-thirds of these funds are not related directly to investigations but

⁵Of the 402 personnel on board in April 1999, NTSB has 162 investigators, 11 employees in its Office of General Counsel, and 11 staff members (excluding those performing the function of working with affected families after an accident) in its Office of Government, Public, and Family Affairs. NTSB also has other staff, such as Administrative Law Judges, performing legal-related work.

support accomplishment of its mission in other ways. An updated Business Plan would help the Board to determine the appropriate balance, at different levels of funding, between using more of its resources to do investigations versus investing in other mission-related activities.

Controls Over Contracts

In its Business Plan and other key documents, the Board stated that its approach to doing business would emphasize contracting out or “outsourcing.” The Board contended that doing so would enable it to avoid the expense associated with establishing a large permanent administrative infrastructure and having to make a long-term commitment of funds for such items as space and equipment.

The Board pursued this approach within a week of its commencing operations when it asked an outside entity to investigate an accident. A chemical incident causing four fatalities occurred at Sierra Chemical Company’s plant in Mustang, Nevada, on January 7, 1998. Two days later, the Board wrote a letter to Battelle authorizing the contractor to begin incurring labor and travel costs starting January 8 and before a formal contract had been signed. According to the statement of work, Battelle would provide labor and materials to assist the Board in the investigation and would also provide a written report delineating the explosion. The Board estimated the contract would be in the \$250,000 range. The Board believed that it was entering into a “work for others” arrangement with the Pacific Northwest National Laboratory, which is owned by the Department of Energy (DOE) and run by Battelle. Under a work for others arrangement, a DOE laboratory may conduct work for other federal agencies on a cost-reimbursable basis.

On the basis of our file reviews and interviews with Board officials, we found that concerns surfaced almost immediately about the growing costs of Battelle’s work. The Board was surprised to learn that it was using Battelle directly rather than working through DOE’s Pacific Northwest National Laboratory, with Battelle as a subcontractor. As a result, the Board noted that it was being charged higher rates under a noncompetitive arrangement with Battelle. According to Board officials, they attempted to control costs by asking Battelle to take people off of the investigation and proposing contract terms that put Battelle in the position of working through the federal laboratory. The Board ultimately signed an agreement with Battelle directly, dated March 17, 1998, to pay \$410,000, including a fixed fee of \$54,000, for its services. On that day, a Board official wrote a

memorandum to the file that the Board was still trying to get information from Battelle that would support the contract cost

The Board has taken some steps to ensure that a repeat of the problems described earlier would not recur. First, it has decided not to use Battelle directly again in a noncompetitive arrangement. Second, the Board has employed a more structured approach for acquiring support for its investigations. In an agreement with DOE's Oak Ridge National Laboratory, the Board identifies tasks, the laboratory estimates the costs for performing those tasks, and the Board provides authorization and reimbursement for services provided by the laboratory as appropriate. The Board also receives a monthly report from the laboratory on progress, accomplishments, status, and planned work for the next month. We believe these are prudent steps for protecting the government's interests.

In the Battelle case, formal, written contracting procedures—based on the Federal Acquisition Regulation but tailored to the Board's needs—were not available to the staff. The Board told us that these procedures are now being developed. However, more than a year has elapsed since it signed the agreement with Battelle for which the Board expressed such concern. The importance of instituting formal procedures is even greater given the Board's reliance on contracted support for not only investigations but also other mission-related tasks.

Under the Federal Acquisition Regulation, contracting officers are responsible for ensuring that applicable procedures have been followed before an agency enters into a contract. For the major contracts we reviewed, we found that the contracting officer has been the Board's Program Officer, the second-in-command in the organization, who has multiple responsibilities. We asked the Board about its need for a full-time contracting officer. The Board told us that there were only seven full-time-equivalent employees in 1998, and the Board did not award enough contracts to justify establishing and filling a contracting officer position. The Board did not comment on its reasons for not establishing such a position in 1999. In the Battelle case, even with a limited staff, such an officer could have informed the Board of the proper procedures for obtaining work-for-others-type assistance. If the Board does not consider it cost-effective to establish a contracting officer position in-house, alternatives such as the use of technical support from the General Services Administration or another federal agency could be explored.

Scope and Methodology

To review the status of the Board's efforts to carry out its mission, we reviewed documents supplied by the Board related to its planning, budgeting, and programs; personnel data such as salary information; and contract files. We interviewed officials from the Board; other federal agencies, including the NTSB, OSHA, the Department of the Army, and OMB. We conducted our work between January through April 1999 in accordance with generally accepted government auditing standards.

Agency Comments

We provided a draft of this statement to the Board for its review and comment. We met with the Chairman and other Board officials. They generally agreed with the information contained in this statement but provided clarifications and corrections, which we incorporated as appropriate.

The Board also pointed to considerations that it believes, in the interest of fairness, should be recognized. First, the Board has the unique status of being a start-up agency. It did not have the advantages of having staff or even office space and found itself putting an infrastructure in place to provide services while at the same time beginning to provide those services. The Board stated that our concerns about the unanticipated backlog of investigations and absence of written procedures for contracting should be viewed in the context of their being a new agency. Second, the Board is expected to accomplish a broad and complex mission but has only limited resources to do so. The Board said that while this mission extends beyond investigations to other activities designed to enhance industrial safety, the Board has had the equivalent of only 5 full-time employees in 1998 and 24 in 1999.

We recognize in our statement that the Board is a start-up agency. Accordingly, we believe the Board's comments highlight the opportunity the Board now has to consider its future allocation of staff and financial resources. For example, the Board has greater flexibility as a start-up agency to find the appropriate balance, at different levels of funding, between using its resources to do investigations versus investing in other mission-related activities.

Status of Recommendations

Listing of the Board's safety recommendations contained in the two investigation reports issued by the Board and the recipients' responses to the recommendations—as of March 30, 1999

Table I.1: Investigation at the Sierra Chemical Company, Mustang, Nevada. Two explosions at an explosives manufacturing facility killed four workers and injured six.

Recommendation was directed to	Recommendation	A ^a	D ^b	P ^c	Comments
Company and explosives manufacturers	Explosives manufacturers should evaluate the effectiveness of their explosives safety programs to ensure that:				A bill pending in the Nevada state legislature would require, among other things, that the relevant state agency adopt regulations establishing standards and procedures for places of employment where explosives are manufactured. The company has not yet responded to the Board's recommendation letter. However, the plant was destroyed in the blast and has not been rebuilt. The Board will send a follow-up letter to the company.
	(1) Process hazard analyses include the examination of quantity-distance requirements, building design, human factors, incident reports, and lessons learned from explosives manufacturers.			X	
	(2) Written operating procedures are specific to the process being controlled and address all phases of the operation.			X	
	(3) Procedures, chemical hazards, and process safety information are communicated in the language(s) understood by personnel involved in manufacturing or handling of explosives.			X	A bill pending in the state of Nevada would require that workers receive safety training in a language they understand.
	(4) Explosives training and certification programs for workers and line managers provide and require the demonstration of a basic understanding of explosives' safety principles and job-specific knowledge.			X	
	(5) Process changes, such as the construction or modification of buildings, or changes in explosive ingredients, equipment, or procedures are analyzed and Process Safety Management elements are updated to address these changes.			X	
	(6) Pre-startup safety reviews are performed to verify operational readiness when changes are made.			X	

**Appendix I
Status of Recommendations**

	(7) All elements of OSHA's Process Safety Management Standard are verified by performing periodic assessments and audits of safety programs.		X	
	(8) The employee participation program effectively includes workers and resolves their safety issues.		X	
	(9) Explosive safety programs provide an understanding of the hazards and control of detonation sources.		X	
	(10) The following issues are addressed in plant design or modification: <ul style="list-style-type: none"> • Operations in explosives manufacturing plants are separated by adequate intraplant distances to reduce the risk of propagation. • Unrelated chemical or industrial operations or facilities are separated from explosives facilities using quantity-distance guidelines. • Facilities are designed to reduce secondary fragmentation that could result in the propagation of explosions. 		X	
Institute of Makers of Explosives (IME)	(1) Develop and disseminate process and safety training guidelines for personnel involved in the manufacture of explosives that include methods for the demonstration and maintenance of proficiency.	X		In February 1999, IME submitted a proposed revision to OSHA's explosives safety standard for the Board's review. The proposed revision includes a section on worker training. The Board is studying the document and will respond to IME.
	(2) Distribute the Board's report on the incident to IME member companies.	X		
	(3) Develop safety guidelines for the screening of reclaimed explosive materials.		X	IME will work on this recommendation at its May meeting.
Nevada (OSHA)	(1) Increase the frequency of safety inspections of explosives manufacturing due to their potential for catastrophic incidents.	X		Nevada's Governor signed an executive order requiring inspections at least twice a year.
Department of Defense	(1) Develop a program to ensure that reclaimed, demilitarized explosives sold by the Department of Defense are free of foreign materials that can present hazards during subsequent manufacturing of explosives.		X	Letter received from the Secretary of the Army stating that DOD will study the recommendation.
	(2) Provide access to explosives incident reports and lessons learned information to managers and workers involved in explosives manufacturing, associations such as IME, government agencies, and safety researchers.		X	
Totals		3	0	13

Source: Chemical Safety Board.

**Appendix I
Status of Recommendations**

Table I.2: Investigation at a Union Carbide Plant in Hahnville, Louisiana. One worker was killed and an independent contractor was seriously injured due to asphyxiation from nitrogen in confined space.

Recommendation was directed to	Recommendation	A^a	D^b	P^a	Comments
Company	(1) Post signs containing the warning "Danger, Confined Space: Do Not Enter Without Authorization" or similar wording at potential entryways when tanks, vessels, pipes, or other similar chemical industry equipment are opened. When nitrogen is added to a confined space, post an additional sign that warns personnel of the potential nitrogen hazard.	X			Union Carbide submitted new safety policies that address the recommendation. The Board is studying these documents.
	(2) Ensure that the plant safety program addresses the control of hazards created by erecting temporary enclosures around equipment that may trap a dangerous atmosphere in the enclosure if the equipment leaks or vents hazardous material.	X			Union Carbide submitted new safety policies that address the recommendation. The Board is studying these documents.
National Institute for Occupational Safety and Health (NIOSH)	(1) Conduct a study concerning the appropriateness and feasibility of odorizing nitrogen in order to warn personnel of the presence of nitrogen when it is used in confined spaces.			X	NIOSH's preliminary response raised technical issues regarding the feasibility of the recommendation. These issues will be discussed with NIOSH's technical departments at a meeting scheduled for late April 1999.
Occupational Safety and Health Administration	(1) Issue a safety alert that addresses the hazards and provides safety guidelines for the use of temporary enclosures that are erected around equipment containing hazardous substances.			X	
Center for Chemical Process Safety	(1) Communicate the findings of this report to your membership.			X	
Compressed Gas Association (CGA)	(1) Communicate the findings of this report to your membership.			X	CGA plans to publish an article on the Board's report in its newsletter.
Totals		2	0	4	

^a A = The recipient acted on the recommendation, and the Board's review of the action is pending.

bD = The recipient decided to take no action on the recommendation.

cP = The recipient is considering whether to act on the recommendation.

Source: Chemical Safety Board.

Grade Structure and Salaries of Board Employees of February 1, 1999

Table II.1: Grade Structure and Salaries of Board Employees, as of February 1, 1999

Office	Start date	Position title	Grade	Salary
Board members	11/97	Board member	EX-4	\$118,400
	11/98	Board member	EX-4	118,400
	12/98	Board member	EX-4	118,400
Chairman/CEO and management	11/97	Chairman/Board member	EX-4	118,400
	12/97	Program Officer	GS-15	94,098
	7/98	Management Analyst	GS-14	70,855
	11/98	Program Analyst	GS-14	68,570
Investigations	9/98	Senior Investigator	GS-15	80,658
	7/98	Investigator	GS-14	82,284
	9/98	Investigator	GS-14	75,427
	10/98	Program Analyst	GS-7	27,508
	11/98	Investigator	GS-14	82,284
Safety program	6/98	Program Analyst	GS-14	68,570
General counsel	2/98	Attorney	GS-15	99,474
	7/98	Attorney	GS-14	79,999
	10/98	Attorney	GS-13	63,829
External relations	1/98	Public Affairs Specialist	GS-15	94,098
	2/98	Public Affairs Specialist	GS-14	70,855
	8/98	Intergov. Relations Mgr.	GS-14	70,855
	1/99	Constituent Relations Mgr.	GS-14	68,570
Information technology	12/97	Program Analyst	GS-12	48,769
	6/98	Program Analyst	GS-13	65,763
	7/98	Computer Specialist	GS-15	86,034
	2/99	Program Analyst	GS-14	75,427
Average Salary				\$ 81,147

Source: The Chemical Safety Board.

Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary, VISA and MasterCard credit cards are accepted, also.

Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 37050
Washington, DC 20013

or visit:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders may also be placed by calling (202) 512-6000
or by using fax number (202) 512-6061, or TDD (202) 512-2537.

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:

info@www.gao.gov

or visit GAO's World Wide Web Home Page at:

<http://www.gao.gov>

**United States
General Accounting Office
Washington, D.C. 20548-0001**

**Official Business
Penalty for Private Use \$300**

Address Correction Requested

<p>Bulk Mail Postage & Fees Paid GAO Permit No. GI00</p>
