

San Francisco- Oakland Bay Bridge Worker Safety:

*Better State Oversight Is Needed to Ensure
That Injuries Are Reported Properly and
That Safety Issues Are Addressed*



February 2006
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CALIFORNIA STATE AUDITOR

ELAINE M. HOWLE
STATE AUDITOR

STEVEN M. HENDRICKSON
CHIEF DEPUTY STATE AUDITOR

February 9, 2006

2005-119

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As requested by the Joint Legislative Audit Committee, the Bureau of State Audits presents its audit report concerning the need for better state oversight for the safety of workers on the new San Francisco-Oakland Bay Bridge (Bay Bridge) project.

This report concludes that the Division of Occupational Safety and Health (division) of the Department of Industrial Relations did not discover the potential underreporting of injuries on the Skyway project of the Bay Bridge East Span replacement because it lacks procedures to ensure the reasonable accuracy of employers' annual injury reports. Based on information we reviewed, there are indications of 15 alleged injuries and an alleged illness potentially meeting recording criteria that are not included in the annual injury reports of the Skyway's prime contractor. Because there were conflicting positions presented to us and because we are not the entity that makes the determination whether an injury or illness is recordable, we notified the division of our concerns and it informed us that it opened a formal investigation into the matter. In addition, the division did not adequately follow up on three of the six complaints of hazardous conditions at the Skyway project. For example, because it used a compliance assistance approach to investigate an April 2004 complaint, the division did not issue citations for the two alleged serious violations it found. Finally, the California Department of Transportation sufficiently carried out its limited safety oversight role for the Skyway, but it could better emphasize safety by making its project safety coordinator position independent of construction managers and improving attendance of staff and managers at safety training and meetings.

Respectfully submitted,

ELAINE M. HOWLE
State Auditor

BUREAU OF STATE AUDITS

555 Capitol Mall, Suite 300, Sacramento, California 95814 Telephone: (916) 445-0255 Fax: (916) 327-0019 www.bsa.ca.gov/bsa

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SUMMARY

Audit Highlights . . .

Our review of safety oversight on the Skyway project of the San Francisco-Oakland Bay Bridge East Span replacement revealed the following:

- The Division of Occupational Safety and Health (division) of the Department of Industrial Relations did not discover the potential underreporting of alleged workplace injuries and an alleged illness on the Skyway because it lacks procedures to ensure the reasonable accuracy of employer's annual injury reports.*
 - The division failed to adequately followup on three of the six complaints received from Skyway workers, including an April 2004 complaint in which it found two alleged serious violations but did not issue citations to the contractor.*
 - The California Department of Transportation's safety oversight of the Skyway project appears sufficient but improvements, such as increasing safety training and meeting attendance, could be made.*
-

RESULTS IN BRIEF

To ensure the seismic safety of the San Francisco-Oakland Bay Bridge (Bay Bridge), the California Department of Transportation (Caltrans) contracted with Kiewit/FCI/Manson, a joint venture (KFM), to build a large section of replacement for the East Span of the Bay Bridge. As of September 2005, Caltrans indicated this section, known as the Skyway, stretching most of the distance from Oakland to Yerba Buena Island, will cost \$1.7 billion, and the East Span replacement will open to traffic in both directions in 2012. Skyway construction involves creating foundations, which consist of piles driven deep into the bay floor and then welded into metal boxes that hold them in place, and hoisting the bridge deck made of prefabricated segments into place with special heavy-lifting equipment.

Several issues relating to worker safety and health have been alleged through the media and employee complaints since construction began. The Division of Safety and Occupational Health (division), within the Department of Industrial Relations, is responsible for enforcing California's health and safety standards. In the spring of 2004, approximately two years after Skyway construction started, it began an informal partnership with KFM allowing the division to conduct periodic compliance assistance inspections. These inspections represented additional access to the site beyond what the division normally would have under state law. To obtain this additional access, the division agreed that no citations would be issued if KFM promptly corrected unsafe conditions or procedures identified during these compliance assistance inspections.

KFM's reported injury rates for the Skyway were approximately one-fourth the average injury rate of prime contractors on other large Bay Area bridge projects and approximately one-fourth to slightly more than one-third the state and national rates for construction. However, the division does not have a process to verify the reasonable accuracy of employers' annual injury reports from which injury rates are calculated, because according to the division's acting chief, the division believes that with its finite resources it must focus on higher priorities. As of September 2005, KFM has recorded 23 injuries in its annual injury reports. Based on evidence available to us, there are indications of 15 alleged

workplace injuries and an alleged illness that potentially meet recording criteria. Because there were conflicting positions presented to us by the sources we reviewed and because we are not the entity to make the determination of whether injuries or illnesses are recordable, we notified the division of our concerns and it informed us that it opened a formal investigation into the matter. KFM has a safety program that includes elements identified by safety experts as necessary to promote a safe worksite, but experts note that one element in its safety program—the use of financial or other incentives as rewards for a safe workplace—may lead to the underreporting of injuries.

Although the division has increased its presence on the Skyway project under the partnership, it did not adequately follow up on three of the six complaints received from current and former KFM employees as of August 2005. For an April 2004 complaint regarding worker exposure to hazardous fumes, the division did not use its statutory authority to investigate the complaint and issue citations for the two alleged serious violations it found. It instead used the compliance assistance approach outlined by its informal partnership with KFM, which precludes issuing citations. In the case of an October 2004 complaint, the division did not investigate at all because of internal miscommunication. In the case of a January 2005 complaint regarding several potentially hazardous situations, the division's response was to query KFM by letter and rely on KFM's assertion the hazards did not exist, even though state law requires it to investigate complaints from employees in a specified period of time unless the complaint is without reasonable basis.

Caltrans has identified safety as the first goal in its strategic plan and considers all employees responsible for conducting business in the safest possible manner. In addition, although Caltrans indicates it is not legally responsible for the safety of its contractors' employees, it does take steps to ensure that each contractor follows applicable health and safety regulations. However, the location of the Skyway project safety coordinator within Caltrans' organizational structure limits the position's independence from Caltrans' construction managers. We also found that attendance averaged only 76 percent for necessary safety training and 66 percent for required safety sessions held every 10 days for a sample of Caltrans' employees working on the Skyway project and all seven of its construction managers.

RECOMMENDATIONS

To identify the underreporting of workplace injuries and to help ensure the reasonable accuracy of annual injury reports, the division should develop a mechanism to obtain employers' annual injury reports and design procedures to detect the underreporting of workplace injuries. If the division believes it does not have the resources necessary to undertake this task in light of its other priorities, it should seek additional funding from the Legislature for this effort.

If the division believes it will use the partnership model in the future, it should create a plan for how it will operate under the model so its activities will provide appropriate oversight and be aligned with state law. Specifically, it should ensure that roles and responsibilities are communicated clearly and that critical information is shared with all relevant individuals.

To ensure that the project safety coordinator assigned to the Skyway project has the necessary independence and authority to evaluate and report on project safety, Caltrans should have this position be independent of the managers whose safety performance the coordinator must oversee.

Caltrans should ensure that its construction managers and staff on the Skyway project attend the required safety sessions every 10 days and other necessary safety training.

AGENCY COMMENTS

The Labor and Workforce Development Agency (agency), which oversees the division, acknowledges that the division made errors in responding to two complaints but believes that the response to an April 2004 complaint was appropriate. The agency indicates that it would study the options for creating a system to detect the underreporting of injuries and inform the Legislature of the results. The Business, Transportation and Housing Agency and Caltrans generally agree with our conclusions and note that steps are being taken to implement our recommendations. ■

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INTRODUCTION

BACKGROUND

After the 1989 Loma Prieta Earthquake, the California Department of Transportation (Caltrans) embarked on a program to ensure the seismic safety of the State's publicly owned bridges and determined that seven toll bridges needed seismic retrofit.¹ Under this effort, the East Span of the San Francisco-Oakland Bay Bridge (Bay Bridge) is being replaced by a new span built parallel to the existing structure. One of the larger phases of the new construction is the Skyway project, which is a section of the new bridge stretching most of the distance from Oakland to Yerba Buena Island. Caltrans estimates the Skyway project will cost \$1.7 billion, including contingency reserves, and as of September 2005 it anticipated finishing the Skyway in 2007, opening the East Span to traffic in both directions by late 2012, and demolishing the existing bridge in 2014.

To construct the Skyway, Caltrans entered into a contract in January 2002 with Kiewit/FCI/Manson, a joint venture (KFM). Completing the Skyway involves the construction of 28 foundations that support the bridge deck, which is made of precast bridge segments hoisted in place by special heavy-lifting equipment. The foundations of the bridge consist of piles driven deep into the bay floor and then welded into metal boxes that hold them in place. As of September 2005, Caltrans indicated construction of the Skyway project was 80 percent complete, with all the foundations and 220 of the 452 precast bridge segments in place. Figure 1 on the following page is an August 2005 photo of Skyway construction. Since construction began in February 2002, several issues relating to bridge worker safety and health have been alleged through the media and employee complaints. These allegations include questionably low injury rate statistics reported by KFM, pressure and incentives for workers not to report injuries, worker exposure to hazardous welding fumes and heat while working within confined spaces, and a lack of oversight by the public agency responsible for monitoring worker safety.

¹ As of September 2005, Caltrans finished seismic retrofits for the West Span of the San Francisco-Oakland Bay Bridge and the Benicia-Martinez, Carquinez, Richmond-San Rafael, San Diego-Coronado, San Mateo-Hayward, and Vincent Thomas toll bridges, along with most publicly owned bridges.

FIGURE 1

Construction of Skyway Project



Source: California Department of Transportation's Skyway project safety coordinator.

THE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH OVERSEES WORKER SAFETY IN CALIFORNIA

The California Occupational Health and Safety Act of 1973 (act) was enacted to ensure safe and healthful working conditions for California workers. The act created the following three entities, commonly referred to as Cal/OSHA:

- (1) Division of Occupational Safety and Health (division)
- (2) Occupational Safety and Health Standards Board (standards board)
- (3) Occupational Safety and Health Appeals Board (appeals board)

The division has power, jurisdiction, and supervision over all places of employment within California except those where health and safety jurisdiction is vested by law in, and actively exercised by, another state or federal agency. The division is responsible for enforcing the health and safety standards adopted by the standards board. It conducts statutorily required investigations of employment accidents resulting in fatalities; serious injury or illness; serious exposure; or from the complaints of employees, employee representatives,

representatives of government agencies, or an employer of an employee directly involved in an unsafe workplace. The division can at its discretion launch investigations based on complaints from other sources, including complaints from a former employee or an anonymous source, or a referral from another government agency or nongovernment organization, such as a media outlet, when it has reason to believe that a workplace health or safety violation has occurred. In addition, each year the Department of Industrial Relations' Division of Labor Statistics and Research provides the division with injury information that identifies high-risk industries—those with an average injury rate significantly exceeding the statewide average. The division then selects and inspects employers from these industries as part of its high-hazard program. None of the employers working on the Skyway were selected by this process between 2002 and 2005, so the Skyway project has not been inspected under the high-hazard program.

When a serious or fatal work-related injury or illness occurs, the employer must notify the division immediately. In addition, state and federal regulations require employers to record serious and less-serious injuries in the federal Occupational Safety and Health Administration's (federal OSHA) Form 300: *Log of Work-Related Injuries and Illnesses* (annual injury report). The division is able to enforce health and safety laws by issuing citations and civil penalties to employers who have not reported workplace accidents properly or who have violated health and safety standards. Employers have the right to appeal any citations and civil penalties through the appeals board.

THE DIVISION OVERSEES SAFETY ON THE SKYWAY PROJECT THROUGH AN INFORMAL PARTNERSHIP AGREEMENT

In the summer of 2003, the division began negotiating a partnership agreement with federal OSHA and KFM, the prime contractor for the project.² According to a division regional manager, parties to the partnership operate under the agreement even though it has never been formally signed. The agreement specifies the partnership roles and obligations for KFM and the division with regard to the Skyway project; the division indicates this is only the second time it has entered a partnership agreement with an employer. Under this agreement, KFM grants the division additional access to the

² Initial partnership negotiations included relevant labor organizations.

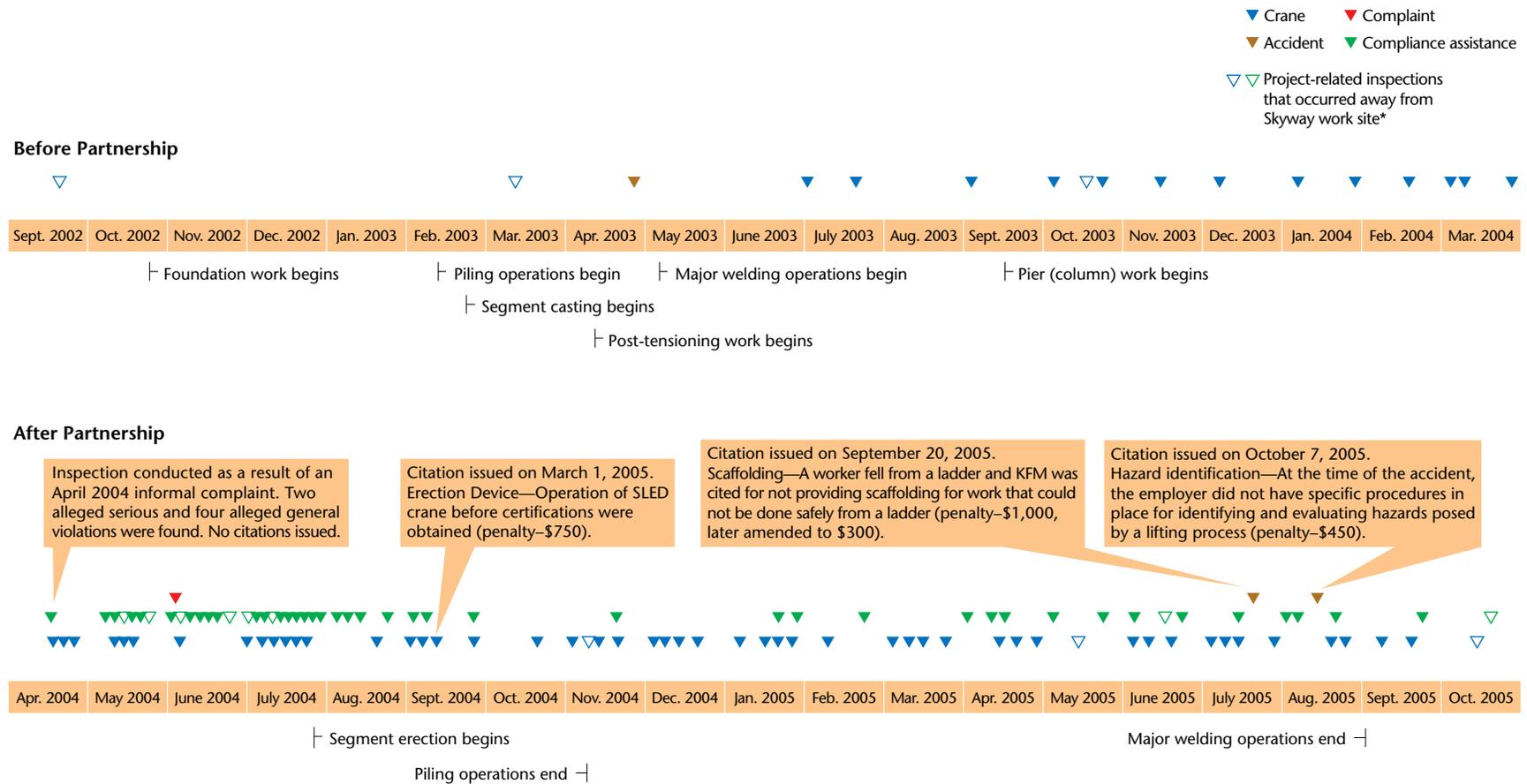
work site to conduct periodic compliance assistance inspections to help KFM identify and correct unsafe conditions or procedures. The division normally would have access to a work site only to conduct required permit inspections (crane permit inspections, for example), to conduct investigations under its traditional enforcement mode as the result of serious reported injuries or complaints or other information received indicating that unsafe work conditions exist, or to visit a site selected as part of the division's high-hazard program.

To obtain this additional access, the division agreed that unsafe conditions or procedures it observed during compliance assistance inspections would be reported to KFM and that no citations would be issued if KFM promptly corrected the problems. The division is to maintain written records of these compliance assistance inspections and confirmation of related corrections. The division indicates that this agreement is meant to increase the abatement of hazards at the work site by building cooperation between it and KFM, reducing operational workloads for both parties, and reducing the chance of the parties entering into litigation.

The division asserts that a partnership approach is more effective for the Skyway project because the division is able to maintain a regular on-site presence, which is not guaranteed under the traditional enforcement mode. It says it also receives better cooperation from KFM in providing information and achieving compliance. As of October 2005, division records indicate that KFM has abated approximately 200 hazards found as the result of its compliance assistance inspections at the Skyway. The regional manager responsible for overseeing the division's Skyway-related compliance assistance inspections said that the abatement of hazards found during its compliance assistance inspections have been timely and in many cases immediate, eliminating the need for the appeal hearings that normally would be generated by this volume of hazard citations. The division also believes that the informal partnership agreement allows for traditional enforcement measures when appropriate. The division indicates that under the agreement it retains its authority to investigate accidents or complaints, and to issue citations related to a complaint if the problem is not already being addressed in satisfactory fashion based on other information the division has received. Figure 2 shows the times when the division conducted compliance assistance inspections, accident and complaint investigations, and legally required crane permit inspections.

FIGURE 2

Time Line of the Division of Occupational Safety and Health On-Site Inspections for the Skyway Project



Notes: The Skyway project contract was executed in February 2002.

Some on-site inspections transpired over multiple dates. The first date of each on-site inspection is shown on the time line.

* These locations include the Stockton Precast Yard and Vallejo Yard.

As shown in Figure 2 on the previous page, the majority of visits to the Skyway and related job sites occurred after April 2004 when the partnership began. According to inspection reports, most of the visits were performed by six inspectors, with two division employees, both industrial hygienists, also conducting inspections primarily related to complaints the division received. For example, as noted in Table 2 on page 26, a senior industrial hygienist conducted compliance assistance inspections related to an April 2004 informal complaint. Finally, a division regional manager supervised the informal partnership agreement between the division and KFM and was responsible for the activities of division inspectors visiting the Skyway project. The acting chief of the division indicates that this project was one of the more resource intensive projects that the division has overseen.

CALTRANS PROVIDES SOME OVERSIGHT OF CONTRACTOR SAFETY

According to its chief deputy director, Caltrans is always concerned about worker safety on Caltrans-managed projects but is not legally responsible for the safety of contractor employees. In its standard contract language, Caltrans requires contractors to conform to all occupational safety and health standards, rules, regulations, and orders established by the State and to provide for the safety of traffic and the public during construction. Although its primary role is to oversee construction, Caltrans also takes steps to ensure that contractors comply with the safety provisions of its contracts as part of its standard contract administration procedures. Safety coordinators provide oversight through work-site monitoring, and Caltrans construction personnel who visit the work site receive training that allows them to evaluate the safety of contractors' operations and to ensure their own safety.

SCOPE AND METHODOLOGY

The Joint Legislative Audit Committee (audit committee) asked the Bureau of State Audits to evaluate Caltrans' oversight practices and the division's enforcement of worker safety and health laws on construction of the East Span of the Bay Bridge. In addition, the audit committee asked us to compare the number of injuries reported by workers on the East Span with the number reported on other large construction projects. The audit committee also asked us to evaluate the workplace

safety policies, including any safety bonus programs of companies contracted to work on the East Span, and determine whether any disciplinary action has been taken against workers complaining of injuries or health issues.

Because the Skyway is the largest, most expensive component of the East Span currently being constructed and was at the center of the allegations described earlier, we focused our review on the safety of workers involved in construction of the Skyway. To evaluate the division's oversight of Skyway safety, we evaluated whether the division adequately fulfilled its duties as outlined in state laws and regulations for complaints of hazardous conditions it received on the Skyway project.

We compared the injury rate on construction of the Skyway against the average injury rates of three Bay Area bridges that recently were replaced or retrofitted—the Carquinez and Richmond-San Rafael bridges and the West Span of the Bay Bridge—and also of the new span for the Benicia-Martinez Bridge, which is still under construction. We then identified the safety policies, including the safety incentive program of KFM, which is constructing the Skyway. Finally, to determine if Skyway injuries were reported properly, we analyzed KFM's annual injury reports; surveyed 565 current and former KFM workers; reviewed logs of the Caltrans' project safety coordinator and engineers; reviewed medical records pertaining to pending workers' compensation claims; and reviewed information from the Workers' Compensation Information System, which contains information about injuries reported for workers' compensation. We identified the current and former workers from Caltrans' copies of KFM's certified payroll records for October 2003, July 2004, November 2004, and August 2005. Because we did not review all month's certified payrolls, our survey does not represent all employees who worked on the Skyway project. For those injured or raising safety concerns among the 139 workers who responded, we followed up with some of them using telephone interviews to obtain details that could be used to confirm the validity of their assertions. We compared the injuries and illnesses from these sources to KFM's annual injury reports. For injuries and illnesses not recorded on the annual injury reports, we analyzed the evidence available to us to determine if there was a sufficient indication that the injury or illness potentially met the recording criteria. However, there were conflicting positions presented to us by the sources we reviewed. Because we are not the entity to make the determination of whether injuries or illnesses are recordable, we did not attempt to reconcile these conflicting

positions. Rather our review was limited to determining whether we believed there were sufficient indications that the division should consider opening an investigation to determine if such an injury or illness occurred.

Because the audit committee specifically asked us to determine, to the extent possible, whether any disciplinary action has been taken against workers complaining of injuries or health issues, we included a question in our survey asking workers if they had experienced or observed retaliation for bringing attention to safety issues.

To evaluate its oversight of safety on Skyway construction, we reviewed the procedures Caltrans has in place to monitor the contractor's safety practices. We also evaluated the location of the safety coordinator's position in the Skyway project hierarchy and reviewed attendance at mandatory safety sessions. ■

AUDIT RESULTS

THE DIVISION OF OCCUPATIONAL SAFETY AND HEALTH DID NOT DISCOVER THE POTENTIAL UNDERREPORTING OF INJURIES ON THE SKYWAY PROJECT BECAUSE IT LACKS PROCEDURES TO ENSURE REASONABLY ACCURATE REPORTING

Although the reported injury rate of the prime contractor for the Skyway project is one-fourth that of the injury rate of similar projects, we question whether relying upon these statistics as an indication of project safety conditions is justified. The federal Occupational Safety and Health Administration's (federal OSHA) Form 300: *Log of Work-Related Injuries and Illnesses* (annual injury report), which employers are required to complete, summarizes the workplace injuries as defined in regulations, occurring during the year and is the basis for the calculation of injury rates. The Division of Occupational Safety and Health (division) within the Department of Industrial Relations (department) does not collect these reports and does not have a systematic process to detect injuries that go unrecorded. Based on surveys of a sample of Skyway project workers and a review of other information, we found indications of 15 alleged workplace injuries and alleged illness not on the project's prime contractor's annual injury reports that potentially meet recording criteria. As noted in the sections that follow, the prime contractor informed us that a number of these instances are in litigation and for various reasons it disagrees that the alleged injuries and alleged illness we identified meet recording criteria. Because we are not the entity to make the determination of whether injuries or illnesses are recordable, we notified the division of our concerns and it informed us that it opened a formal investigation into the matter.

Although the prime contractor, Kiewit/FCI/Manson, a joint venture (KFM), has a safety program that exemplifies best practices in many ways, safety experts note that providing cash or other incentives, which KFM does as part of its safety program, can have mixed results. Proponents of safety incentives say they can promote safe behavior, but some safety experts indicate that they also can lead to the underreporting of injuries.

The Reported Injury Rate of the Skyway's Prime Contractor Is Lower Than the Average Injury Rate of Other Bay Area Bridge Projects and State and National Averages

As Table 1 indicates, KFM's reported injury rate was approximately one-fourth the average injury rate of other prime contractors on other large Bay Area bridge projects and was approximately one-fourth to slightly more than one-third of state and national rates for highway, street, and bridge construction work. State and federal regulations require employers to prepare an annual injury report identifying the total number of hours worked and the number of worker injuries that resulted in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness, or a significant injury or illness diagnosed by a licensed health care professional. From these reports, we calculated KFM's injury rate, as well as the injury rate of other contractors. From a survey of annual injury reports, the U.S. Department of Labor's Bureau of Labor Statistics calculates the industry-specific injury rates for the nation and for California that we include in Table 1.

State and federal regulations require employers to prepare an annual injury report identifying the total number of hours worked and the number of worker injuries or illnesses meeting a certain criteria.

The Division Does Not Exercise Sufficient Control Over the Injury Reporting Process to Ensure That Employers Properly Report Injuries

The division does not have a process to verify the reasonable accuracy of the annual injury reports employers are required to maintain, so we question whether the injury rates calculated from these reports can be relied upon to evaluate the safety conditions at individual work sites. The acting chief of the division stated the division has no legal requirement to collect these reports and does not have the resources to handle such a requirement. Instead, it relies primarily upon employer and emergency worker reports of serious workplace accidents to identify injuries. In addition, the acting chief explained that division investigators review annual injury reports and may ask employees about injuries as part of on-site inspections, but the division does not have a systematic process to detect injuries that go unrecorded.

TABLE 1

**Injury Rate Statistics Reported by the Skyway Project Prime Contractor,
Other Bay Area Toll Bridge Projects, and Industry Aggregate**

| Project | Prime Contractor | Yearly Incidence Rate* | | |
|---|--|------------------------|------|------|
| | | 2002 | 2003 | 2004 |
| San Francisco-Oakland Bay Bridge Skyway | Kiewit/FCI/Manson, a joint venture (KFM) | 2.36 | 1.75 | 1.47 |
| Other selected Bay Area bridge and retrofit projects [†] | Various | 8.50 | 7.85 | 8.67 |

| Industry | Sample | Yearly Incidence Rate* | | |
|---|---------------|------------------------|------|------|
| | | 2002 | 2003 | 2004 |
| Highway, street, and bridge construction [‡] | California | 6.2 | 7.1 | § |
| Highway, street, and bridge construction [‡] | United States | 6.7 | 7.4 | 6.3 |

Sources: Federal Occupational Safety and Health Administration’s Form 300A: *Summary of Work-Related Injuries and Illnesses*; the California Department of Industrial Relations, Division of Labor Statistics and Research; and the Bureau of Labor Statistics, U.S. Department of Labor. We did not audit this information.

* Incidence rates represent the number of injuries per 100 full-time workers and were calculated as (N/EH) x 200,000.

N = Number of injuries.

EH = Total hours worked by all employees during the calendar year.

200,000 = Base for 100 equivalent full-time workers working 40 hours per week, 50 weeks per year.

[†] Combined incidence rate for San Francisco-Oakland Bay Bridge West Span (2002–2004), Benicia-Martinez Bridge (2002–2004), Carquinez Bridge (2002–2003), and Richmond-San Rafael Bridge (2003–2004) projects. See Appendix for additional information about these projects’ injury rates.

[‡] “Bridge construction” was added to the “highway and street construction” industry classification beginning in 2003.

[§] Not available as of January 2006.

The acting chief further explained that because the resources of the division are finite, a decision to invest resources into policing the recording of injuries in annual injury reports necessarily means that other resource-dependent activities will suffer. He said that, in general, the division places a much higher priority on securing the abatement of serious hazards that can lead to serious injuries and fatalities than on abating regulatory violations such as the filling out of an annual injury report. He said that to do otherwise would be inconsistent with the division’s mandates arising out of federal oversight and state statute. The division’s deputy chief of enforcement explained that the priority federal OSHA continues to emphasize in its performance review of the division is that the division conduct inspections in those workplaces where serious hazards are likely to exist, so that the serious hazard, which can cause serious injury or death, is corrected before a tragic event occurs.

The Workers' Compensation Information System has the potential to provide an effective tool for the division to identify the potential underreporting of many types of injuries.

We can appreciate the division's concern that it must prioritize its use of resources. However, we believe that receiving accurate annual injury reports from employers would help it identify specific workplaces where serious hazards are likely to exist and that the division should have a systematic process to detect the underreporting of injuries to ensure the reasonable accuracy of the injury reports. Further, as we explain later, the division is already planning to develop a new data management system that would integrate other existing data systems. These data systems could provide an effective tool for the division to identify the potential underreporting of many types of injuries. Under state law, it may obtain information about individual claims from the Workers' Compensation Information System (WCIS) to select employers for health and safety consultations and inspections. This system, maintained by the department's Division of Workers' Compensation (DWC), is used to provide information on workplace injuries and illnesses submitted by claims administrators as required by state law, including reports of occupational injury or illness from doctors or employers describing different aspects of the injury, including when and where it took place.

We have some concerns regarding the reliability of the data in the WCIS, which claims administrators submit on workers' compensation claims reported by employers. For example, we expected the injuries of employees of the primary contractor on the Skyway project to be listed under a single federal tax identification number, but instead they are listed under eight different numbers. The Franchise Tax Board can find no record of several of these entities being incorporated in California, and its records show that one company was dissolved in 1987. In addition, each injured KFM employee listed in the WCIS is classified as a clerical office employee despite occupation and injury descriptions that refer to construction activities. We did not acquire any evidence to determine if the cause of the unreliable data exists at DWC that maintains the WCIS, the claims administrator that provides information to the WCIS, or at KFM. Regardless of the cause of the unreliable data, its usefulness is reduced.

According to the public information officer for the DWC, data credibility for the WCIS presents an issue because no penalties for noncompliance currently exist. Further, she stated that because the DWC's primary research programs look at data in industry-level aggregated analyses, data discrepancies are apparent only when other entities request information on individual employers from the database. However, despite these anomalies, we believe if the WCIS were improved to ensure that injuries were correctly

classified and attributed to the proper identification number, the division could use this database to help determine the actual number of injuries for specific employers because it contains information describing injuries occurring at work sites. For example, information contained in the WCIS gave us an indication that a number of injuries potentially were not recorded on KFM's annual injury reports. We discuss these potential unrecorded injuries in the next section.

The acting chief noted that the division is conducting a feasibility study to create a new data management system, which would integrate or link with other data systems like the WCIS. He stated the division would like the new system to be capable of helping it target workplaces by allowing access to injury and illness data that display incidence and severity. However, this does not address our concern regarding a methodology to identify underreporting of injuries. The division currently lacks a systematic process to identify such underreporting, and the request for a feasibility study notes that its business background, goals, and objectives must be considered and a solution to meet its business requirements developed. However, we are concerned that a new data system focused on addressing the division's current operations would continue to overlook the underreporting of injuries.

The Division Does Not Consistently Use Available Information to Identify Unrecorded Injuries

State and federal regulations require employers to record work-related injuries or illnesses that result in any of the following:

- Death
- Days away from work
- Restricted work or transfer to another job
- Loss of consciousness
- Medical treatment beyond first aid
- A significant injury or illness diagnosed by a physician or licensed health care professional

Sources: Code of Federal Regulations, Title 29, Part 1904 7(a); California Code of Regulations, Title 8, Section 14300.7.

Because the division does not have a systematic process to detect injuries that may go unrecorded and because, as described in the next section, it did not adequately follow up on indications that Skyway injuries may not have been recorded properly, it was not aware of a number of alleged workplace injuries that potentially meet recording requirements but were not included in annual injury reports. As a result, a division review of KFM's annual injury reports may not have allowed it to be aware of potential injuries and the associated hazards at the Skyway project even though information on other workplace injuries was available to the division from other sources.

State and federal regulations require employers to certify and post at the work site an annual summary of recordable injuries, as described in the text box, at the end of each calendar year. KFM provided us with completed annual injury reports for 2002 through 2004 and an annual injury report for 2005 that was updated as of September 2005. These reports listed a total of 23 injuries.

However, surveys and interviews from a sample of current and former KFM employees, records KFM allowed us to view but not copy, information from the WCIS, medical records pertaining to pending workers' compensation claims, and the records of the California Department of Transportation's (Caltrans) inspectors and the safety project coordinator indicate that there may exist other workplace injuries or illnesses that potentially meet recording requirements. We provided KFM with a list of the potentially recordable injuries and the reasons why we thought each might be recordable. KFM provided an explanation of the factual and legal reasons why it believed the injuries or alleged workplace injuries were not recordable. As shown in the examples below, we took KFM's explanations into consideration in determining whether there was sufficient indication that the division should consider investigating to determine if an injury was recordable (potentially recordable). We reduced our list to 15 potentially recordable injuries, 12 of which were recorded in the WCIS, which were not recorded in KFM's annual injury reports. We believe that these injuries were potentially recordable because evidence presented to us indicates that a worker may have suffered a workplace injury that resulted in lost or restricted work days or transfer to another job, loss of consciousness, or medical treatment beyond first aid. However, for each instance we identified there were conflicting positions presented to us by the sources we reviewed. We did not attempt to reconcile these conflicting positions, because our review was limited to determining whether we believed there were sufficient indications that the division should consider opening an investigation to determine if such an injury occurred.

One of the 15 potentially recordable injuries we referred to the division was of a welder that KFM records indicate suffered an elbow injury in August 2003 and an examining physician directed the welder to not use the right hand or arm, or climb for 21 days. KFM stated that although some restrictions were issued by a physician (e.g., do not use right hand or climb for a few days), the welder was able to perform routine job functions within the meaning of the regulations. Therefore, in KFM's view the injury was not recordable on the basis of restricted work. State regulations require an employer to record an injury on the basis of restricted duty if the employer keeps an employee from performing one or more of the routine functions of his or her job. According to a statement from the welder, as a result of the injury described above, the welder was put on a light-duty assignment for approximately one week working on heat blankets and also walking around doing various jobs. Thus, there was sufficient indication to believe that the division may find that the welder was kept from performing at least one or more of the routine functions of his job.

Another example from the 15 potentially recordable injuries we referred to the division is a worker who indicated missing work after being hit by a grinder. For this example and several others, KFM stated the injury was not reported to it until a number of days after the incident and that the employee marked "No" on the time card representing the date when the alleged injury occurred, indicating that the worker had not been injured. In view of this and the absence of other evidence, KFM determined there was insufficient basis to conclude that this injury was work related. We referred this injury to the division because medical records that the worker's legal counsel provided to us indicate that an examining doctor, who saw the worker nine days after the alleged incident, reported that the worker explained that it was not until the morning after the incident that the worker's neck became stiff, that it did not improve over time, and that the worker's arm started to ache and tingle. The doctor marked "Yes" that the findings were consistent with the patient's statement, prescribed medication, and outlined work restrictions. Consequently, it appears that on the date of the incident the worker may not have known the severity of the alleged injury and therefore did not mark it on the time card. Because we are not the entity to make the determination whether injuries are recordable, we referred these instances and others to the division and it informed us it opened a formal investigation into the matter. If the division decided to investigate this alleged injury, it would need to reconcile the conflicting positions presented above to determine whether an injury is actually recordable.

In addition, we became aware of former Skyway workers that may have a potentially recordable significant illness relating to the exposure to toxic levels of manganese fumes. The WCIS showed that eight cases related to toxic fume exposure were recorded in March, June, and July 2004, which would have been relevant to the division's investigation of an April 2004 complaint on a similar matter. As we discuss later in this report, the division's investigation of an April 2004 complaint found two alleged serious violations, which were that between May 2003 and March 2004 Skyway welders were exposed to manganese fumes in excess of the permissible exposure limit and that KFM did not mandate the use of respiratory protection. Because the division conducted this investigation under the compliance assistance approach, it did not issue citations as a result of its findings. KFM disputed the alleged violative conditions, but indicated it would take steps to abate the division's concerns. A division inspector conducting an investigation of a May 2004 complaint was satisfied with the abatement steps KFM took in response to the April 2004 complaint. Between December 2004 and August 2005, a licensed health care

professional,³ to whom some former KFM workers were referred to by their legal counsel, diagnosed them as having neuropsychological injuries that the licensed health care professional believes were substantially caused and contributed to by exposure to welding fumes and fine particulate dust. State regulations require employers to consider an injury or illness to be work related if an event or exposure in the work environment caused or contributed to the resulting condition or significantly aggravated a preexisting injury or illness. Work relatedness is presumed for injuries or illnesses resulting from events or exposures occurring in the work environment except in limited circumstances. State regulations also require employers to update past annual injury reports to include newly discovered recordable injuries or illnesses.

In response, KFM told us that nothing in the record-keeping regulations establishes a presumption or rule that even known overexposure in the workplace to a hazardous level of an air contaminant means that a subsequent illness is related to that overexposure or is otherwise a work-related illness. In fact, KFM disputes the allegations of work relatedness and said that even if an illness is work related it is not recordable unless one of the other specific criteria for recordability is met, such as whether an illness is a significant illness as specifically defined in the regulations. Further, as of late December 2005 KFM indicated it had not received a diagnosis of “significant illnesses” within the meaning of the regulations from a physician or other licensed health care professional nor has it received credible evidence that any such illness was related to work at the Skyway project. KFM acknowledged that in litigation concerning a number of workers’ compensation cases its counsel has been provided with the neuropsychological assessments of certain individuals. It said that it does not believe the alleged illnesses are recordable because it has not received evidence that they involve cancer or a chronic irreversible disease (the definition of a significant illness under record-keeping regulations) or that they were caused by any exposure during employment at KFM. As we noted previously in this section, we are not the entity that makes the determination of whether an illness is recordable, but rather our review was limited to determining whether we believed there were sufficient indications that the division should consider investigating whether an illness should or should not be recorded. We referred this alleged illness to the division, and the division informed us that it opened a formal investigation into the matter.

³ In this instance, it was a qualified medical evaluator, who is a licensed psychologist, to whom the workers were referred to by their legal counsel. Qualified medical evaluators provide evaluations of medical-legal issues for workers’ compensation claims. The Division of Workers’ Compensation within the Department of Industrial Relations appoints licensed health care professionals as qualified medical evaluators if they meet certain requirements in the Labor Code.

Regardless of whether the division ultimately determines that the alleged illness does or does not meet the definition of a significant illness as defined in state regulations, if it had compared WCIS data to the annual injury reports it would have become aware as early as March 2004 that Skyway workers were reporting illnesses related to toxic fume exposure. However, as stated previously, the division does not use the WCIS to identify injuries and illnesses occurring at work sites.

The Division Does Not Aggressively Protect the Accuracy of Annual Injury Reports

As described earlier and as an example described in this section shows, the division does not take an aggressive approach to protecting the accuracy of annual injury reports. Accurate annual injury reports would help division inspectors identify areas at work sites that need additional examination. Furthermore, because, as discussed in the Introduction, the division uses annual injury report information to identify high-hazard industries, accurate injury reports would help the division focus the efforts of its high-hazard program on industries posing the greatest threat to workers' health and safety. In other words, accurate annual injury reports could provide the division with a tool to direct its limited resources to those areas needing the most scrutiny. Consequently, we would have expected the division to make greater efforts to protect the integrity of the annual injury reports it requires employers to maintain. Although the division was made aware by a newspaper article that an October 2003 injury in which a KFM employee allegedly lost consciousness after being struck in the head was not included in KFM's annual injury report, it did not fully investigate this or other allegations included in the article.

Accurate annual injury reports could provide the division with a tool to direct its limited resources to those areas needing the most scrutiny.

In April 2005 a media outlet published an article raising questions about KFM's low injury rates. The article included the example of the October 2003 injury. A similar June 2005 article included a May 2004 injury in which a worker allegedly fell off a truck and hurt his shoulder. The acting chief stated that the division made several requests for information supporting the article's allegations but that the information provided to the division by the author of these articles was not specific enough to warrant a formal investigation. However, to make sure that there was not additional information of which the division should be aware, a division inspector went to the Skyway site to review the matter. According to the inspector, he looked at KFM's annual injury reports and eight to 10 first aid cases, including the May 2004 injury. The inspector explained that information he was provided indicated that this injury

technically should have been recorded on the annual injury report and that he informed KFM of his conclusion. However, this injury was not included in the 2004 report KFM provided to us. KFM stated it was unable to show us information about this injury because of pending litigation, and the worker was not part of our survey sample, so the injury is not included in the 15 alleged injuries we identified.

The acting chief pointed out that the inspector reported that KFM did not try to hide the injuries reported in the articles, as both were documented in KFM's first aid log and that the two injuries, although they may be recordable, were not something the division would prioritize for in-depth investigation because its primary focus has been preventing fatalities and serious injuries and illnesses. Further, the acting chief stated that as a result of the division's increased on-site presence on the Skyway project, it did not need to rely as much on annual injury reports and first aid logs to identify areas and operations with a greater threat to worker health and safety as it would with other projects.

Nonetheless, a division inspector informed KFM of an injury that should have been on the annual injury report, but no citations were issued and no one followed up to determine if the injury was added later. Further, the inspector said that he looked at only eight to 10 first aid log cases. It would seem reasonable that, given the one instance found from the small sample looked at and the low reported injury rate, the division would have looked further into the potential underreporting of injuries. Because it did not do this, the division did not protect the accuracy of annual injury reports in this case.

A division inspector informed KFM of an injury that should have been on the annual injury report, but no citations were issued and no one followed up to determine if the injury was added later.

Although KFM's Safety Program Exemplifies Best Practices, Some Experts Indicate that Certain Safety Incentives It Uses Could Contribute to Underreporting of Injuries

The April 2005 article mentioned earlier also raised concerns about cash bonuses being paid to KFM crews completing contract milestones without any recordable injuries. The acting chief indicated in a letter in response to the article that if workers were disciplined for safety lapses when they were hurt and rewarded financially for not reporting injuries, these practices would be against state law. However, as described in the earlier section, the division's investigation of the allegations of underreporting was inadequate. We were asked to identify the safety policies and safety bonus programs of companies constructing the East Span of the San Francisco-Oakland Bay Bridge to the extent possible. As noted in the Scope and Methodology, because the Skyway is the largest,

most expensive component of the East Span currently being constructed and was at the center of the allegations described in the Introduction, we focused our review on the safety of workers involved in construction of the Skyway. In response to our request for that information, KFM provided its safety policy manual and injury and illness prevention plan, and allowed us to view internal documents confirming that it carries out the program described in its policies.⁴ Of the 139 current and former KFM employees who responded to our survey, 47 made positive comments about KFM's safety program. Our review found that KFM has a safety program that includes many elements identified by safety experts as necessary to promote a safe work site. However, safety experts also indicate that incentives, which KFM uses and which have been shown to reduce injury rates in some studies, also could contribute to some managers and employees not properly reporting injuries.

According to KFM, its safety program is based on years of experience in heavy construction.

According to KFM, its safety program is based on years of experience in heavy construction. KFM employees receive an initial safety orientation to the project, a safety review of their work area, and daily safety reminders; they also attend weekly, monthly, and post-serious-accident safety meetings. KFM also has periodic safety fairs and safety "stand-downs" that employees must attend as further training on safety.

KFM's procedures require that each foreman prepare a job hazard analysis for each operation and that supervisors and the project safety manager review this document with crews before beginning work. The job hazard analysis identifies and prioritizes the safety risks associated with a particular work operation and then outlines precautions that will be taken to mitigate these risks. According to KFM's safety manager, information from the job hazard analysis is communicated to employees by their supervisors during the daily safety reminders and weekly safety meetings. Further, KFM posts signs around the construction site to remind employees of the major risks they should be aware of while working in a particular area. Despite these precautions, accidents can still occur. When one does, KFM requires employees to report it immediately to their foreman and/or superintendent. Under certain circumstances, supervisory and safety personnel are required to conduct an accident investigation to determine the cause of the incident. If additional training or safety reminders are necessary, supervisory personnel and employees recommend steps for management to implement. At times, actions of employees or supervisors cause an accident. KFM's policies

⁴ Although KFM provided documentation that gave us reasonable assurance that certain safety trainings, meetings, and activities occurred, we did not attempt to evaluate the quality of individual events.

outline a progression of disciplinary actions for employee safety lapses. These disciplinary actions include reprimands, suspension without pay, and termination.

KFM's safety program also includes the provision for providing safety incentives—financial and other awards—to its employees. KFM provides safety incentives for employees who do not experience a recordable injury or policy infraction and for supervisors whose crews do not experience a recordable injury, among other things. Further, KFM provides awards for workers who propose an exemplary safety idea or who are observed by safety staff using particularly safe work practices. KFM also provides a luncheon with prize drawings at various times during the year if the overall project meets its injury rate goals. We did not confirm that any of these awards were actually distributed.

KFM provides safety incentives for employees who do not experience a recordable injury or policy infraction and for supervisors whose crews do not experience a recordable injury, among other things.

KFM has also utilized crew-specific production incentives. For instance, it had a “Pile Head Welding Incentive Plan” for welding and other crews working on the Skyway’s foundation. The plan specified awards ranging from \$200 to \$600 to be distributed to each worker at the completion of the crew’s work on one of the 28 footing boxes supporting the bridge. The crew’s foreman would receive double the workers’ award amount. The award’s size was based on schedule completion of the work and achieving certain productivity goals, and was granted only if no recordable accidents and no critical weld repairs necessary due to workmanship occurred.

The safety performance of KFM foremen and superintendents, which includes their record of recordable injuries, is tracked by project management and the individual companies that make up the joint venture. Project foremen receive recognition, including various awards, for achieving certain milestone hours without a recordable injury. In addition, according to the KFM project director, the safety performance of superintendents, including the number and severity of injuries that occurred under their watch, is one component of the bonus program.

Experts say that providing incentives such as cash, vacations, and awards to employees in promotion of workplace safety is a common practice throughout the construction industry and may indeed produce positive results. Proponents claim that safety incentives encourage and promote safe behavior and eventually improve safety performance. A number of studies indicate companies with a safety incentive program have lower injury rates. However, a review commissioned by federal OSHA concluded that these studies did not measure whether safety incentives reduced the actual number

A review commissioned by federal OSHA concluded that safety studies often did not measure whether safety incentives reduced the actual number of injuries and illnesses through an improved work environment or just reduced reported injuries as a result of a change in reporting behavior.

of injuries and illnesses through an improved work environment or just reduced reported injuries as a result of a change in reporting behavior. Consequently, some controversy exists regarding the effectiveness of safety incentive programs. Some experts argue that by using reportable injury statistics as the benchmark for safety performance, employees may be hesitant to report workplace injuries if they risk losing a safety award, team recognition, or a cash payment. One expert said that underreporting of injuries can lead to employees continuing to work while injured.⁵

As noted in the Scope and Methodology, we were asked to determine, to the extent possible, whether any disciplinary action has been taken against workers complaining of injuries or health issues. Of the 139 current and former KFM employees who responded to our survey, 52 indicated they had been injured while working on the Skyway project,⁶ and 24 of these injured employees indicated they felt pressure to not report their injury. Although we did not specifically ask about safety incentives in our survey, five workers mentioned them as a reason why injuries were not reported. However, a more frequent concern, expressed by 14 of the workers, was that they believed they would lose their jobs or face lesser forms of retaliation if they reported an injury. We did not attempt to confirm or review the nature of these responses but did refer these workers' concerns to the department for further review.

THE DIVISION DID NOT FOLLOW UP ADEQUATELY ON ALL SKYWAY COMPLAINTS

The division did not adequately follow up on three of the six complaints received from KFM employees. Table 2 on the following page summarizes Skyway-related complaints received as of August 2005 and the division's response. In one instance, it chose to review a complaint from former Skyway workers with the compliance assistance approach outlined by the informal partnership agreement with KFM, which precluded issuing citations if KFM promptly abated hazardous conditions. In another instance, the division failed to investigate the complaint at all because of internal miscommunication. Finally, despite state law requiring it to conduct on-site investigations for employee complaints having a reasonable basis, the division decided to use its nonemployee complaint procedure to handle a complaint it received from a KFM employee.

⁵ In the order mentioned, the sources we refer to in this paragraph are as follows: *Safety Incentives: A Study of Their Effectiveness in Construction*, by Paul M. Goodrum and Manish Gangwar, published in *Professional Safety*, July 2004; *Review of the Literature on Safety Incentives*, prepared for federal OSHA by Dennison Associates, 1998; *Managing Worker Safety and Health for Excellence*, Margaret Richardson, 1997; *A Guide to Effective Industrial Safety*, Jack W. Boley, 1977.

⁶ Not all of these injuries were necessarily recordable as defined by state regulations.

TABLE 2

Skyway Worker Safety and Health Complaint Summary

| Date Received | Allegation(s) | Division Response | Result |
|---------------|--|---|---|
| 1/24/2004 | The Division of Occupational Safety and Health (division) received an anonymous complaint that alleged employees were smoking within permitted confined spaces and that poor ventilation for welding operations existed within permitted confined spaces. | The former district manager of the Oakland district office (former district manager) evaluated the complaint and deemed it invalid due to lack of information provided by the complainant, and also because he had knowledge of KFM's mock-up testing and of its hiring of an industrial hygiene firm to provide sampling and consulting services specifically within confined workspaces. | None. |
| 4/5/2004 | A group of 10 former KFM welders submitted complaints regarding welding fume and oil mist exposure, inappropriate reading instruments, inoperative radios, lack of access to detailed exposure reports on welding operations from KFM, heat stress, and improper respirator filters. | A senior industrial hygienist conducted compliance assistance inspections under the partnership model from April 7 through May 28, 2004. | The division sent a letter to KFM in June 2004 stating it found alleged violative conditions including two alleged serious violations and four alleged general violations. Specifically, the inspection found that credible industrial hygiene reports showed employees were exposed to manganese from welding fumes above the permissible exposure level and a significant number of these exposures occurred without the benefit of appropriate respiratory equipment. No citations were issued, but KFM was given up to 30 days to abate the violative conditions. |
| 5/14/2004 | A then-current welder submitted a complaint regarding welding fume exposure, lack of access to exposure reports from KFM, improper ventilation controls, and lack of adequate safety equipment. | An industrial hygienist from another region conducted a formal complaint inspection beginning one day after the senior industrial hygienist's compliance assistance inspection had concluded. | The inspection found no violations. The industrial hygienist indicated he was satisfied with the abatement steps KFM had taken in response to the senior industrial hygienist's compliance assistance inspection related to the April 5, 2004, complaint. |
| 8/27/2004 | A then-current welder submitted a complaint regarding heat stress, unsafe ladder work, and lack of adequate safety equipment. | The industrial hygienist was assigned to investigate the complaint. | The industrial hygienist concluded that KFM had proper procedures and safety equipment in place to mitigate heat stress and that all ladders and equipment were available and in good condition. |
| 10/25/2004 | A former welder and seven then-current welders submitted complaints alleging welding fume exposure, heat stress, lack of access to exposure-monitoring results, that KFM was concealing information from the division, and that the fit-up welding crew was using automated welding machines without the benefit of adequate ventilation controls. | The former district manager forwarded the complaint to the industrial hygienist he thought was assigned to investigate formal complaints on the Skyway project. The industrial hygienist never received the complaint, and although the division later attempted to obtain additional assistance from one of the complainants, no investigation was ever conducted, and the complaint has been administratively closed. | None. |
| 1/4/2005 | A then-current employee submitted a complaint alleging that employees did not have safe access to air monitors, were not provided safe work platforms, were not provided access ladders to barges, had been exposed to a 20-foot fall, and that KFM was not enforcing a policy of removing torches from confined spaces when not in use. | The division sent a letter to KFM on February 24, 2005, requiring that it investigate the alleged conditions and respond within 14 calendar days. | KFM provided a written response to the division on March 10, 2005, explaining its procedures. The former district manager concluded that KFM had investigated the allegations properly and that it had provided sufficient information that the alleged conditions did not exist. |

Sources: Division complaint files and staff interviews.

The Division's Use of the Informal Partnership Agreement to Perform an Inspection Triggered by an April 2004 Complaint Does Not Align With State Law

Because the division used the compliance assistance approach outlined in its partnership agreement with KFM to investigate a Skyway-related complaint received in April 2004, it did not issue citations that otherwise are required when it finds serious violations of health and safety regulations. As discussed in the Introduction, the division has an informal partnership agreement with KFM allowing it additional on-site access to the Skyway project. While in this role, described as compliance assistance, the division agreed that it would not cite KFM for unsafe conditions or procedures, and KFM agreed to abate the identified problems promptly.

State law prohibits the division from issuing a notice in lieu of a citation for serious violations, which the acting chief of the division explains is activated when the division has a mandatory presence at a work site, not when its presence is voluntary. Under state law, the division's presence would be mandatory when it is required to investigate an accident resulting in a fatality or a serious injury or illness, or an employee's complaint of unsafe work conditions that has a reasonable basis, which it refers to as the standard enforcement mode. Compliance assistance inspections, on the other hand, would be considered a voluntary presence because the employer is granting the division additional access to the work site beyond what is required by law. State law provides that if an employer accepts consulting services offered by the division, the division in providing such services shall not issue citations for violations found. However, of the consultation services listed in state law, investigating an employee complaint is not specifically included. Consequently, when at a work site as the result of a complaint rather than as the result of the employer offering additional access, we would expect the division to consider that its presence is mandatory and comply with the state law requiring citations for serious violations.

When at a work site as the result of a complaint rather than as the result of the employer offering additional access, we would expect the division to consider that its presence is mandatory and comply with the state law requiring citations for serious violations.

In April 2004 the division received a group complaint from former KFM welders alleging, among other things, that workers were being exposed to hazardous levels of manganese from welding fumes. State law requires the division to investigate complaints by current employees that it believes have a reasonable basis; for former employee complaints, the division has discretion on whether to investigate. Although the nature of the workers' allegations were that they had been exposed to the possibility of developing a serious illness—a possibility serious enough to warrant a citation if substantiated—the division decided to investigate the complaint under the compliance assistance approach outlined by a draft

partnership agreement with KFM, which precluded issuing citations if hazardous conditions were abated promptly. Consequently, after completing its inspection and finding alleged violative conditions including that welders were exposed to manganese fumes in excess of the permissible exposure limit for approximately 10 months without proper engineering controls and without mandating the use of respiratory protection, which the division considered to be serious violations, it did not cite KFM for these violations. Rather, the division gave the company a written notice requiring it to correct the problems within a specified time period. The division determined that KFM subsequently installed a ventilation system for its welding crews and instituted a mandatory respiratory protection program that, based on the results of a July 2004 inspection, satisfied the division.

The acting chief asserted that because the welders who complained of excessive manganese exposure were former KFM employees at the time of the complaint, the division had the discretion of using either the compliance assistance approach or its standard enforcement mode. He also said that the standard enforcement mode would have resulted in the division sending a letter to the employer asking it to notify the division in writing whether the alleged conditions exist and what actions have or will be taken to correct the problem. However, neither state law nor division policy limit the division's options in the manner described by the acting chief. Rather, division policy indicates that it could have conducted an on-site investigation if warranted. The division's action—conducting an on-site inspection—indicates it believed the allegations in the complaint were serious enough to warrant action beyond sending a letter. However, by not investigating the complaint under its standard enforcement mode, the division could not issue the citations that are required when it finds serious violations.

By not investigating the April 2004 complaint under its standard enforcement mode, the division could not issue the citations that are required when it finds serious violations.

The acting chief said the division investigated the April 2004 complaint using the compliance assistance approach and used KFM's response as a test to its commitment to the informal partnership agreement, which the division and KFM had been negotiating since summer 2003. As Figure 2 in the Introduction shows, the inspection related to the April 2004 complaint of manganese exposure marked the beginning of the compliance assistance inspections performed as part of the informal partnership agreement. He further stated that the division wants to be effective in having employers quickly abate the hazardous conditions it identifies. He said that achieving voluntary compliance is often the fastest method to abatement because issued citations can be appealed by employers and abatement is stayed until the appeals process is over, which sometimes takes years.

We believe, and the acting chief agrees, that in the future when a partnership agreement exists between the division and an employer, the division should handle complaints about that employer strictly in enforcement mode and issue citations if serious violations are found.

Although we can appreciate the acting chief's desire to move forward with an informal partnership agreement and to have the identified problems abated, the decision to start the partnership shortly after receiving the April 2004 complaint raises a number of concerns. First, KFM was facing the threat of citations stemming from the alleged exposure of welders to hazardous levels of manganese, so it does not seem like a good time to test KFM's commitment to the partnership. Second, although the division may achieve faster abatement by offering not to issue citations for problems it identifies, weakening the threat of penalty for serious violations reduces the likelihood that employers will fix safety problems of which the division is not aware. Consequently, to achieve a balance between the partnership approach ideals and the need for enforcement of worker safety and health violations, we believe, and the acting chief agrees, that in the future when a partnership agreement exists between the division and an employer, the division should handle complaints about that employer strictly in enforcement mode and issue citations if serious violations are found.

The Division Did Not Investigate an October 2004 Group Complaint From Skyway Workers That Alleged Hazardous Exposure to Welding Fumes

The division failed to investigate a group complaint submitted in October 2004 by one former and seven then-current KFM employees alleging that some KFM employees continued to be exposed to toxic levels of hazardous welding fumes despite the division's earlier inspection of the April 2004 complaint. This group alleged that members of the KFM fit-up welding crew, a group of workers who performed preparatory work for the regular welding crew, were being exposed to hazardous work conditions, including exposure to hazardous levels of the manganese produced by welding fumes. State law requires the division to investigate employee complaints deemed valid within three working days or 14 calendar days, depending on the seriousness of the complaint.

The former district manager of the Oakland district office (former district manager) who evaluated the complaint initially was skeptical about their validity because they were submitted in person by only the former welder who was part of the April 2004 complaint group, and because the allegations were similar to those alleged within the earlier complaint with the exception that the fit-up crew also was being exposed to hazardous welding fumes. In addition, the former district manager

After a conversation with one of the complainants, the former district manager decided to forward the complaint to the industrial hygienist that he thought was assigned to investigate these types of Skyway project complaints.

believed, based on what he had been told, that the fit-up crew welding operations did not include the use of automatic welding machines, which the district manager understood produced more hazardous fumes than other types of welding operations. After a conversation with one of the complainants who assured him that the fit-up welding crew had been utilizing automatic welding machines, the former district manager decided to forward the complaint to the industrial hygienist in another division office that he thought was assigned to investigate these types of Skyway project complaints. However, about two months later, in a conversation with this industrial hygienist about another matter, he learned the industrial hygienist never received the October 2004 complaint and that no investigation had been conducted.

The former district manager indicates that in January 2005 he discussed the validity of the October 2004 complaint with his regional manager and the senior industrial hygienist who had investigated the April 2004 complaint. According to the former district manager, these two individuals expressed doubts as to whether the welding work the fit-up crew performed necessitated the level of engineering controls that had been lacking for the main welding crew, but they decided to contact one of the complainants anyway to inquire if the fit-up crew operations were still occurring. The former district manager indicates that the complainant had been laid off and was uncertain of the status of the fit-up crew operations, but he promised to find out within the next several days. However, he did not contact the division until April 2005 when he visited the Oakland district office with photos he claimed to have taken in December 2004 and early January 2005. According to the former district manager, these photos supposedly show the fit-up crew using automatic welding machines without the benefit of the engineering controls instituted for the main welding crew as a result of the compliance assistance inspection for the April 2004 manganese complaint.

The former district manager stated that because the complainant indicated that fit-up crew welding operations ended in January 2005, a physical inspection at the Skyway construction site could not prove a violation. The former district manager indicates that he explained to the complainant that an investigation still could be opened and a citation issued if the complainant was willing to testify at an eventual administrative appeal hearing. The complainant stated he would have to consider that option; according to the district manager, the complainant did not contact the division to affirm his willingness to testify, so it did not open an investigation.

He indicated that the statute of limitations for issuing a citation subsequently expired in June 2005, six months after the fit-up crew's last use of automatic welding machines was alleged.

Despite the circumstances that the former district manager described, the division should have initiated an investigation into the formal complaint as required by law if the complaints had a reasonable basis. By forwarding the complaint to the industrial hygienist for investigation, the former district manager clearly indicated that he believed it warranted an investigation. Had communication within the division been better, an investigation could have been conducted while fit-up crews still were operating, and the division would not have had to rely on cooperation from a complainant. The former district manager agreed that a major problem contributing to the lack of an investigation of this complaint was the miscommunication regarding who would investigate Skyway-related complaints.

The former district manager agreed that a major problem contributing to the lack of an investigation of this complaint was the miscommunication regarding who would investigate Skyway-related complaints.

Although doubts concerning the validity of the allegations also appear to have slowed its initial response, the former district manager indicates that the division subsequently learned, after the complaint was closed, that the allegations may have warranted investigation. In July 2005 the senior industrial hygienist conducted a compliance assistance inspection in which he obtained information on which employees were assigned to the main and fit-up welding crews. In addition, during the senior industrial hygienist's July 2005 inspection, the fit-up welding crew foreman told him that members of the fit-up welding crew had been intermittently using automatic welding machines since November 2003 and that use of the machines increased as more fit-up crew members had become certified to use them. This contradicted the senior industrial hygienist's understanding of fit-up welding crew operations obtained from the same foreman during the original compliance assistance inspection in April 2004.

The Division Failed to Conduct an On-Site Investigation After Receiving a Complaint in January 2005 From a KFM Employee as Required by State Law

Despite state law requiring it to conduct on-site investigations for employee complaints having a reasonable basis, the division decided to use its informal complaint procedure, a letter to the employer, to handle a complaint received from a then-current KFM employee. In January 2005 the division received a complaint from a KFM employee alleging that the company was not providing adequate safety measures and equipment. The former

district manager who evaluated the complaint told us that he believed the division's compliance assistance inspections at the Skyway project would have found and abated the alleged hazardous conditions had they existed. Rather than closing the complaint because it had no reasonable basis or assigning a division inspector to investigate, the former district manager decided to write a letter to KFM in February 2005, 51 days after the receipt of the complaint, describing the alleged conditions and requiring that KFM investigate and respond to the letter within 14 days. KFM subsequently responded to the division, stating the alleged hazardous conditions did not exist. KFM's response satisfied the former district manager and no formal investigation was done.

One problem with the former district manager's belief that the division's compliance assistance inspections would have found any hazardous conditions is that division inspectors conducted only one compliance assistance inspection between September 2004 and January 2005, when the district manager was evaluating the complaint (see Figure 2 on page 9 in the Introduction). In addition, division policy and state law do not provide the district manager with the level of discretion he took in handling this complaint. Division policy does not offer the option of writing a letter to the employer in response to a current employee complaint, and state law requires the division to investigate complaints from current employees within a specified period of time, unless the complaint is without reasonable basis. In response to our concerns, the acting chief agreed that the division should have investigated the January 2005 complaint.

The acting chief agreed that the division should have investigated the January 2005 complaint.

CALTRANS' SAFETY OVERSIGHT OF THE SKYWAY PROJECT APPEARS SUFFICIENT, BUT IMPROVEMENTS COULD BE MADE

Caltrans' policy states that all employees are to conduct business in the safest possible manner, a position that is supported by Caltrans' identification of safety as the first goal in its strategic plan. This priority for safety also is supported by safety and health requirements for employees. These requirements include expectations that employees attend safety meetings; conduct safety inspections of their work sites to identify and correct workplace hazards; and do everything necessary to protect their own safety and health and that of others by complying with all occupational safety and health policies, procedures, work practices, laws, rules, and regulations. These detailed and specific policies establish a commitment to safety and communicate to employees the importance that Caltrans places on safety.

Although Caltrans' personnel on the Skyway project worked to implement the safety oversight procedures required by its policies, some improvements can be made to better emphasize safety. For example, the project safety coordinator's position within the organization has limited independence from construction managers. In addition, because Caltrans' inspectors observe the safety conditions of the work site while monitoring the construction and engineering aspects of KFM's work, it is important that they are able to identify unsafe conditions. To do so, Caltrans' policy and state regulations require that construction personnel attend safety meetings every 10 working days and attend general and job-specific hazard training. However, our review of the attendance records for a sample of Caltrans' staff assigned to the Skyway project, including all seven construction managers who set an example for staff, indicated they have missed a significant number of safety classes identified as necessary for their jobs and many mandatory safety sessions.

Caltrans Outlined the Procedures It Would Perform to Monitor KFM's Safety Practices and Carried Them Out

Caltrans monitors a contractor's safety activities in the following ways:

- Documents periodic on-site visits to evaluate the contractor's overall efforts by the district construction safety coordinator.
- Monitors and documents the contractor's compliance with safety requirements by the project safety coordinator.
- Considers the safety of operations in conjunction with normal inspections by Caltrans' project staff.

Source: Caltrans Construction Manual.

Although Caltrans indicates it is not legally responsible for the safety of the contractor's employees, it performs inspections and monitoring to ensure that the contractor complies with applicable safety regulations, as required by the contract. Both the district and project safety coordinators appear to have conducted site visits of the Skyway project. Although the district safety coordinator did not document his visits as required by the Caltrans Construction Manual, the project safety coordinator's efforts are documented in a diary. Both safety coordinators monitor the work site to ensure safe working conditions. The duties of the project safety coordinator, who is located at the work site, also include identifying unsafe conditions, documenting the safety activities of the contractor

and Caltrans' personnel, and ensuring that the contractor complies with safety orders.

Caltrans Could Improve the Independence of the Project Safety Coordinator

The current location of the project safety coordinator within the project's organizational structure is not optimal because this position has limited independence from Caltrans construction

managers whose focus is the construction of the Skyway project. As shown in Figure 3, the project safety coordinator holds a nonsupervisory position three levels below the Skyway project construction manager (construction manager), which might hamper the flow of advice from the safety coordinator to top management.

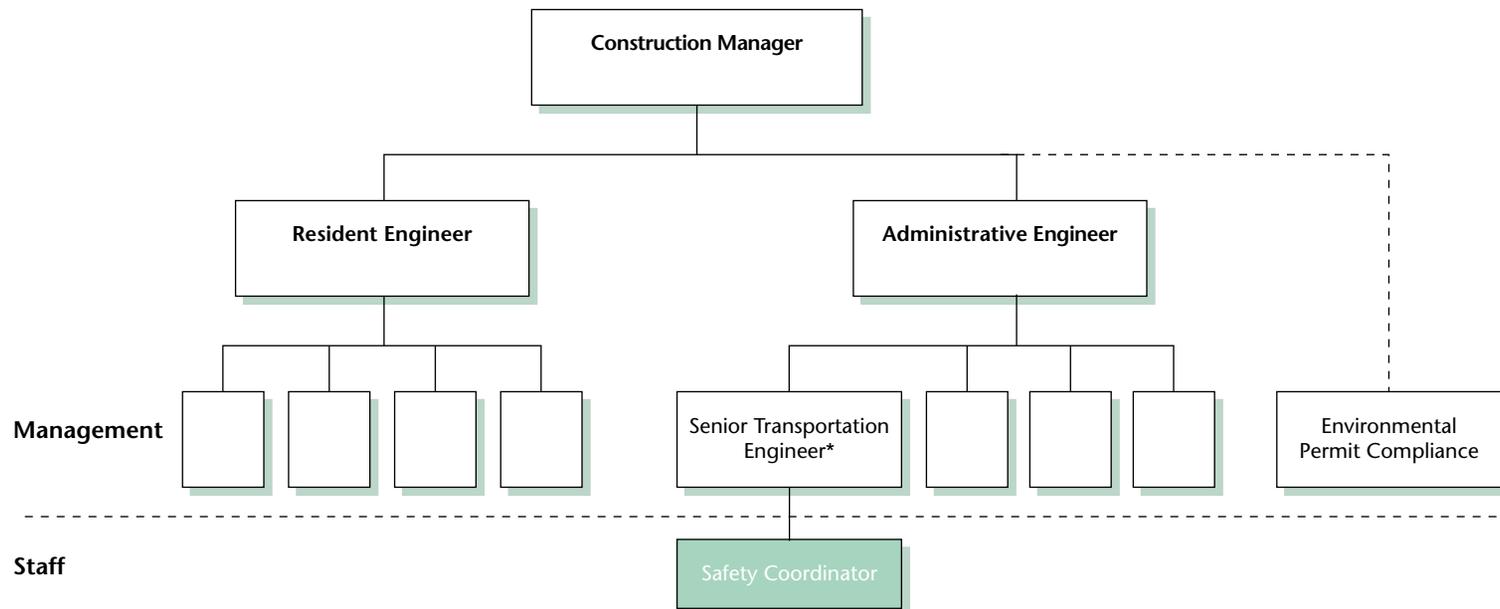
The safety coordinator position should be independent from the managers whose safety performance the coordinator must oversee.

Because the project safety coordinator should be able to provide information to top management so they can take action, experts recommend that safety coordinators report directly to the top manager. To be effective, this position also should be independent of other functions. For example, as shown in Figure 3, the environmental permit compliance position reports to the construction manager and is independent of the other managers on the Skyway project. In contrast, the project safety coordinator noted that his daily logs are subject to the review of his supervisor, a senior construction division transportation engineer on the Skyway project, who sometimes edits their content. Furthermore, he notes that communication regarding safety issues is subject to the approval of this same supervisor.

According to the construction manager, the editing of a subordinate's formal communications and logs is a common practice within Caltrans to ensure accuracy and relevancy. This only highlights the need for the safety coordinator position to be independent from the managers whose safety performance the coordinator must oversee. Because the supervising manager may need to be the subject of such communications, this situation could impose upon the independence and influence of the safety coordinator. The construction manager said further that the project's safety coordinator frequently has had conversations with him and others outside the project, including safety personnel from the district office and headquarters. Although we can appreciate that the project safety coordinator has conversations with individuals other than his immediate supervisor, this does not negate the potential problems stemming from the position's lack of independence from the managers whose safety performance he must oversee. The acting director of Caltrans' headquarters office of health and safety services agreed that for safety personnel to be effective, they should have some independence from the project they are working on and should have enough authority to affect change, but he also noted the construction safety function is located within the construction division.

FIGURE 3

Section of Caltrans' Skyway Project Organizational Chart



Source: California Department of Transportation's Skyway project organizational chart.

* This individual administers the electrical items, mechanical items, storm water pollution prevention, and safety areas of the Skyway construction contract and supervises 10 employees, including one safety position.

Caltrans Should Better Track and Enforce Employees' Safety Training Requirements

To further improve safety practices, Caltrans needs to better track and enforce the safety training requirements of its employees on the Skyway project. Caltrans' construction personnel are expected to monitor the safety of operations at the work site in conjunction with their normal inspections, so it is important that they are able to identify hazardous situations. To do so, they must receive adequate training for the hazards prevalent on the site and maintain a safety-conscious attitude. In addition to the ongoing safety guidance from supervisors, Caltrans accomplishes this through two activities that include general and job-specific hazard training and safety sessions held every 10 working days.

Attendance records for a sample 15 Caltrans employees—eight staff and seven managers—show that they met safety-training requirements only 76 percent of the time, with staff and managers failing to attend training.

We reviewed the attendance records of a sample of 15 Caltrans' employees—eight field construction staff and all seven construction managers⁷—for four training classes and found they met safety-training requirements only 76 percent of the time. Staff and managers failed to attend training for both project-specific hazards identified as necessary for their positions and annual general safety refreshers required by Caltrans for construction employees. Attendance at these classes is important to ensure that Caltrans personnel can identify hazardous situations for their own safety and to effectively monitor the safety of the contractor's operations.

To create and maintain staff interest in safety, Caltrans' supervisors conduct "tailgate" safety meetings every 10 working days as required by Caltrans' Injury and Illness Prevention Program and Title 8 of the California Code of Regulations. However, attendance at these meetings is significantly lower than required. Our analysis for the sample of 15 Caltrans' staff during fiscal year 2004–05 shows an average attendance rate of 66 percent. The average attendance of these individuals ranged from 30 percent to 96 percent for field construction staff, and from 17 percent to 92 percent for the construction managers.

At the beginning of January 2005, the project safety coordinator informed his supervisor that staff on the Skyway project had failed to follow Caltrans' policy regarding safety meetings. The low attendance rate by project staff sampled is unsurprising given the example the seven construction managers provided

⁷ Does not include staff or managers from the Stockton Precast yard, or those designated by Caltrans as office employees.

throughout fiscal year 2004–05. Although Caltrans’ policy states supervisors must create and maintain interest in safety because they are responsible for translating policy into action, supervisors’ average attendance rate of 60 percent during this period was lower than the 71 percent average rate of the field construction staff we sampled. Because the purpose of the meetings is to emphasize safety, it is important for supervisors and staff to attend these meetings. In this way supervisors can instruct employees on safety and health issues, emergency action plan procedures, and other safety concerns.

It should be noted that we have some reservations regarding the accuracy of the information we received, as we found indications that attendance may be lower than attendance sheets suggest. In our sample, we identified three instances in which a construction manager’s initials were present on the attendance sheet despite the fact the individual in question was absent at the time the safety session was held. Caltrans confirmed the employee was absent but was unable to explain why his initials were on the attendance sheet.

RECOMMENDATIONS

To identify the underreporting of workplace injuries and to help ensure the reasonable accuracy of annual injury reports, the division should develop a mechanism to obtain employers’ annual injury reports and design procedures to detect the underreporting of workplace injuries. These procedures could include the following:

- Identifying employers whose injury rate is much lower than the rate of similar employers.
- Comparing the injuries reported in the WCIS to annual injury reports to identify discrepancies.
- Sending a confidential survey to a sample of workers throughout the State to identify injuries not included in employers’ annual injury reports and workplace conditions that could lead to the underreporting of injuries.

If the division believes it does not have the resources necessary to undertake this task in light of its other priorities, it should seek additional funding from the Legislature for this effort.

In designing the detection procedures, the division should take into account conditions we identified that may contribute to underreporting of injuries, such as safety incentive programs that reward the lack of reportable injuries and penalize safety lapses.

If the division believes it will use the partnership model in the future, it should create a plan for how it will operate under the model so its activities will provide appropriate oversight and be aligned with state law. Specifically, it should ensure that roles and responsibilities are communicated clearly and that critical information is shared with all relevant individuals.

To ensure that the project safety coordinator assigned to the Skyway project has the necessary independence and authority to evaluate and report on project safety, Caltrans should have this position be independent of the managers whose safety performance the coordinator must oversee.

Caltrans should ensure that its construction managers and staff on the Skyway project attend the required biweekly safety sessions and other necessary safety training.

We conducted this review under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted government auditing standards. We limited our review to those areas specified in the audit scope section of this report.

Respectfully submitted,



ELAINE M. HOWLE
State Auditor

Date: February 9, 2006

Staff: John Baier, CPA, Audit Principal
Ben Belnap, CIA
Paul E. Alberga
Jonnathon Kline

APPENDIX

The Skyway Project Prime Contractor Has a Reported Injury Rate Lower Than the Rates of Prime Contractors From Other Bay Area Toll Bridge Projects

The prime contractor for the Skyway project—Kiewit/FCI/Manson, a joint venture (KFM)—has annual reported injury rates that are consistently lower than three of the four prime contractors from other Bay Area toll bridge projects we selected. To calculate the injury rates in Table A on the following page, we obtained the annual injury reports of each prime contractor and applied the injury incident rate formula established by the U.S. Department of Labor’s Bureau of Labor Statistics. As presented in our Audit Results, the Division of Occupational Safety and Health within the Department of Industrial Relations does not verify the reasonable accuracy of the annual injury reports. Thus, we question whether relying upon these statistics as an indication of project safety conditions is justified.

TABLE A

Comparison of Prime Contractor Injury Rates for Bay Area Toll Bridge Projects

| Project Name and Construction Cost | Prime Contractor | Year | Total Recorded Injuries | Total Hours Worked | Incidence Rate* |
|---|--|------|-------------------------|--------------------|----------------------|
| San Francisco-Oakland Bay Bridge Skyway \$1,719 Million [†] | Kiewit/FCI/Manson, a joint venture | 2002 | 2 | 169,631 | 2.36 |
| | | 2003 | 6 | 687,737 | 1.75 |
| | | 2004 | 8 | 1,091,711 | 1.47 |
| San Francisco-Oakland Bay Bridge West Span Retrofit \$233 Million [‡] | California Engineering/Modern Continental, a joint venture | 2002 | 22 | 341,351 | 12.89 |
| | | 2003 | 13 | 261,100 | 9.96 |
| | | 2004 | 1 | 61,500 | 3.26 |
| Benicia-Martinez Bridge \$784 Million [§] | Kiewit Pacific Company | 2002 | 1 | 332,981 | 0.62 |
| | | 2003 | 1 | 386,156 | 0.52 |
| | | 2004 | 5 | 608,332 | 1.65 |
| Carquinez Bridge \$256 Million [§] | FCI/Cleveland Bridge, a joint venture | 2002 | 13 | 173,585 | 14.98 |
| | | 2003 | 17 | 220,576 | 15.42 |
| | | 2004 | NA | NA | NA |
| Richmond-San Rafael Bridge Retrofit \$743 Million [†] | Tutor-Saliba/Koch/Tidewater, a joint venture | 2002 | 45 | NA [#] | unknown [#] |
| | | 2003 | 45 | 1,069,605 | 8.42 |
| | | 2004 | 76 | 1,223,685 | 12.43 |

Sources: Federal Occupational Safety and Health Administration (federal OSHA) Form 300A: *Summary of Work-Related Injuries and Illnesses*; Bureau of Labor Statistics, U.S. Department of Labor; and Toll Bridge Program Oversight Committee reports. We did not audit this information.

* Incidence rates represent the number of injuries per 100 full-time workers and were calculated as (N/EH x 200,000)

N = Number of injuries.

EH = Total hours worked by all employees during the calendar year.

200,000 = Base for 100 equivalent full-time workers working 40 hours per week, 50 weeks per year.

[†] Forecast cost with any identified contingency reserve as of September 2005.

[‡] Actual cost as of September 2005.

[§] Forecast cost as of October 2005.

^{||} Work was completed in 2003.

[#] The Division of Occupational Safety and Health was unable to acquire the 2002 federal OSHA Form 300A, which identifies the hours worked by the contractor's employees for that year.

Agency comments provided as text only

California Labor and Workforce Development Agency
801 K Street, Suite 2101
Sacramento, California 95814

January 20, 2006

Elaine M. Howle, State Auditor*
Bureau of State Audits
555 Capitol Mall
Sacramento, CA 95814

Dear Ms. Howle:

The Labor and Workforce Development Agency (Labor Agency), as part of its oversight of the Department of Industrial Relations (DIR), Division of Occupational Safety and Health (Cal/OSHA), has reviewed the draft report of the Bureau of State Audits (BSA) entitled *San Francisco-Oakland Bay Bridge Worker Safety: Better Oversight is Needed to Ensure Injuries are Reported Properly and Safety Issues are Addressed* (per your letter of January 12, 2006).

I appreciate the opportunity to review the report and provide a response, and I hope that the ultimate result of this audit process will be an improvement in the safety of California workers, as well as a productive dialogue on the direction the regulation of occupational safety and health should take in this state.

The Labor Agency response to the recommendations of the BSA report, and our comments regarding the Audit Results underlying those recommendations, follows. We summarize each BSA recommendation, provide a general response, and then discuss specific aspects of both the recommendation and our response.

Report Recommendation (reporting of injuries):

To identify underreporting of workplace injuries such as potentially occurred on the Skyway Project, and to help ensure the reasonable accuracy of annual injury reports, the DIR Division of Occupational Safety and Health (Cal/OSHA) should develop a mechanism to obtain employers' annual injury reports and design procedures to detect the underreporting of workplace injuries. If Cal/OSHA believes it does not have the resources necessary to undertake this task in light of its other priorities, it should seek additional funding from the Legislature for this effort.

* California State Auditor's comments begin on page 49.

Response:

This recommendation pertains to the requirement for employers to enter all injuries that result in death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, loss of consciousness for any amount of time, or a significant injury or illness diagnosed by a licensed health care professional. The information on the Form 300 log can be used to track the incidence of injuries at individual workplaces and compare them to each other as well as to compare individual workplace injury rates to industry averages. Currently, this information is required to be recorded on paper and is not part of an electronic database.

As the recommendation suggests, to engage in a review of the accuracy of Form 300 logs statewide so that underreporting can be detected would involve a substantial investment of resources. The various options for undertaking this task, as well as the resources investment that would necessary to do so, will be studied. The Legislature will be informed of the findings so that a decision can be made as to whether such an initiative should be made a priority by Cal/OSHA or another agency in a position to undertake it.

Discussion:

What Cal/OSHA does and where its authority comes from. Cal/OSHA is the agency responsible for regulating occupational safety and health in the State of California. The authority to do so comes from state statutes creating Cal/OSHA and defining its responsibilities, as well as from federal statutes that create the federal Occupational Safety and Health Administration (OSHA) and give it authority over every state and territory within or controlled by the United States. Under federal law, states may not regulate occupational safety and health unless they have a State Plan approved by federal OSHA. OSHA regularly reviews the performance of State Plans like Cal/OSHA to determine whether they meet federal effectiveness criteria. OSHA provides close to 50% of the funding to support Cal/OSHA's oversight of workplace activity. Failure to meet OSHA's requirements would subject Cal/OSHA to defunding by OSHA and loss of authority to regulate occupational safety and health.

Recording versus reporting of injuries. The requirement to "report" injuries to Cal/OSHA and the requirement to "record" injuries on the Form 300 log are different and the distinctions between these requirements are sometimes not completely appreciated. For the sake of clarity, we would like to emphasize that employers are required by regulation to report directly to Cal/OSHA any "serious" injury or illness, i.e., any injury that leads to death, hospitalization for more than 24 hours for purposes other than observation, loss of a body member, or serious permanent disfigurement. Cal/OSHA investigates all such reports and has done so in the case of the Skyway Project. But employers must record even lesser injuries on the Form 300.

Status of the Skyway Project. The BSA report does not suggest that failure to report such serious injuries or illnesses occurred at the Skyway Project. It also does not appear to make a conclusion one way or the other about the overall safety of the project. Fortunately, very few injuries of this type – and no fatalities – have occurred at the Skyway Project. Division records indicate that three accidents have been reported to Cal/OSHA since the project began, one of which was not required to be reported.

The BSA report displays data on total recorded injuries for several recent bridge projects. Injury data reported for those projects are as follows:

- Bay Bridge Western Span Seismic Retrofit: four serious accidents, with six serious injuries, including two fatalities. One of the fatalities was to a non-employee, a motorist.
- Benicia-Martinez Bridge: two serious accidents, including one fatality.
- Carquinez Bridge: one serious accident
- Richmond-San Rafael Bridge: six Serious Accidents including one fatality. Two of these accidents were in connection with work under Federal OSHA jurisdiction.

In addition to these, the Golden Gate Bridge Seismic Retrofit has resulted in three Serious Accidents, including one fatality.

These data provide useful perspective on the overall question of safety at the Skyway Project.

The BSA report does conclude that a significant number of injuries that are “potentially” recordable have not been entered on KFM Form 300 logs.¹ To determine whether KFM has violated recording requirements, a Cal/OSHA enforcement investigation is currently in progress and the findings of that investigation will be made public upon its completion according to standard Cal/OSHA policy.

Tracking the recording of injuries and illnesses statewide on the Form 300 log. On the larger issue of recording of injuries for all California employers, the BSA report states that Cal/OSHA “does not have a systematic process to detect injuries that go unrecorded”, and concludes that “receiving accurate annual injury reports from employers would help [Cal/OSHA] identify specific workplaces where serious hazards are likely to exist.” It is true that Cal/OSHA does not collect Form 300 logs from employers unless they are being used to substantiate a citation for improper logging of injuries. Cal/OSHA does regularly participate in the federal OSHA’s “OSHA Data Initiative” program to review the accuracy of Form 300 logs, and has averaged 20 or more site visits per year in doing so, but that is the extent to which it engages in a “systematic process” to monitor the entry of injury and illness data on Form 300 logs.

¹ The BSA report states, among other things that some former welders have been diagnosed (by a licensed psychologist) with chronic health problems caused by exposure on the Skyway Project to manganese and other constituents of welding fumes.

In addition, the DIR Division of Labor Statistics and Research (DLSR) collects from a small sample of 1,600 employers statewide their Form 300 log injury and illness incidence information, and this information is used to generate statistics on incidence rates for various industries. Employers in industries with the highest rates of injury and illness are targeted for inspection by Cal/OSHA as part of its high-hazard inspection program.

If Cal/OSHA were to collect the information from every Form 300 log in California, the number collected could be up to one million per year. That information, as the BSA report notes, could make it possible to identify those employers who record the lowest numbers of injuries and to inspect them, on the theory that these outliers would likely be examples of deliberate underreporting. However, this is not a practical concept without creating a system for electronically logging and submitting the injury and illness information. The prospects of implementing such a system will be studied as noted above.

Yet the collection and management of the data submitted on Form 300 logs are only a part of the steps needed to determine whether under-recording is taking place. Once Form 300 log information is obtained and a suspicion is developed that injuries are not properly being recorded, a comprehensive inspection must be conducted to gather evidence sufficiently definitive to support a citation for failure to properly log injuries. That is a labor-intensive² undertaking which depends to a large degree on the willingness of witnesses to step forward and take the risk of being called on to testify in any litigation that will likely result. In the end, although a violation may be substantiated, it will never be known whether all recordable injuries have been discovered by the investigation, particularly on construction projects of this size and other large places of employment.

As Recommendation No. 1 appears to allow, the prospect of tracking the entry of injury information on Form 300 logs statewide raises a significant resource issue for Cal/OSHA. A decision that Cal/OSHA should go down this path will surely spark a controversy over where the agency should place its priorities. Like the federal OSHA and the other State Plan states, Cal/OSHA has made its top priority the identification and abatement of hazards that are likely to produce fatalities and/or serious injuries and illnesses. Identifying those instances where Form 300 logs have not recorded all recordable injuries may not be viewed as having a direct relationship to prevention of the most significant accidents that occur at high-hazard worksites like large-scale construction projects.

² On the Cal/OSHA enforcement investigation of the Skyway Project currently underway for example, approximately 70 hours have been spent by the primary Cal/OSHA investigator to date, and it is anticipated that at least 200 hours will be needed overall for his work to be completed. This does not include the time spent by other Cal/OSHA staff to provide legal, technical, and supervisory review, and similarly excludes the time spent by BSA staff looking at the same issue.

Report Recommendation (complaint process):

If Cal/OSHA believes it will use the partnership model in the future, it should create a plan for how it will operate under the model so its activities will provide both appropriate oversight and be aligned with state law. Specifically, it should ensure that roles and responsibilities are clearly communicated and that critical information is shared with all relevant individuals.

Response:

Cal/OSHA acknowledges that errors were made in responding to two of the complaints received at the Skyway Project. One raised a safety issue and the other raised an issue of inadequate protection from manganese exposure after it was believed that problems with protection from manganese exposure had been resolved. These complaints should have been responded to with an enforcement site inspection. The errors were due to communication failures within Cal/OSHA, and steps have been taken to ensure that these will not recur, and that responsibilities are clearly understood by all involved with this and any other partnership entered into in the future.

Discussion:

The partnership with KFM is a pilot program. This is only the second partnership undertaken by Cal/OSHA with a single employer. It was begun with the participation and approval of federal OSHA. While errors have been made, the bottom line is that the Skyway Project to date compares favorably to other large bridge construction projects, as no workers have died at this project and very few have sustained injury sufficiently serious to be reportable to Cal/OSHA. These are the types of accidents that are of most concern at large construction sites.

Hazard abatement versus citations. The conclusion of the BSA report is that it was unlawful for Cal/OSHA to respond to an informal complaint by conducting a site visit, and responding to the hazard of manganese exposure found at the site by allowing KFM to abate the hazard promptly, instead of issuing a citation. The Labor Agency and Cal/OSHA respectfully disagree.

Labor Code section 6309 allows Cal/OSHA discretion to conduct a formal investigation or not as it sees fit when it receives an informal complaint, i.e., a complaint that is not from a current employee or employee representative. Cal/OSHA standard procedure is to send a letter to employers when an informal complaint is received requesting an explanation from the employer and to follow up with a site visit if the response is inadequate. By policy, Cal/OSHA attempts to follow up with a site inspection of ten percent of those employers to whom such letters are sent, regardless of the response.

Labor Code section 6354 requires Cal/OSHA to provide a full range of consulting services to any employer or employer group requesting them. Labor Code section 6355 does not permit the issuance of a citation to any employer who requests or accepts consulting services. If an employer refuses to correct a hazard identified in a consultative visit, the matter will be referred for an enforcement investigation pursuant to Labor Code section 6317, and citations will be issued for any violations found.

These statutes constitute the Legislature's explicit recognition that workplace safety can be significantly enhanced when employers and Cal/OSHA work in partnership to identify hazards and correct them. There is no substitute for the traditional enforcement approach when cooperative efforts fail or are not attempted, but there clearly are more effective and efficient ways to operate when both sides agree to work together.

At the time the first manganese complaint was received, discussions with KFM about entering into a partnership had been underway for several months. The legal rationale for entering into a partnership, other than the fact that federal OSHA encourages them and expects State Plan states to engage in them, is that they are initiated as an employer's acceptance of consulting services.

The BSA report states that "the Division's action—conducting an on-site inspection—indicates it believed the allegations in the complaint were serious enough to warrant action beyond sending a letter." Cal/OSHA did indeed arrange a more comprehensive response than sending a letter – but this does not make the "assistance" response of Cal/OSHA unlawful.

The BSA report goes on to state that "because KFM was facing the threat of citations stemming from the exposure of welders to hazardous levels of manganese, it does not seem like a good time to test KFM's commitment to the partnership." Again, we respectfully disagree. Prior enforcement experience with the western span of the bay bridge, albeit with a different contractor, demonstrated the pitfalls of mechanically responding to hazards found by issuing citations. Among the many hazards found there was lead exposure with significantly more toxic potential than the manganese exposure alleged to have occurred at KFM, and Cal/OSHA was never able to achieve the abatement it believed necessary, because the citations were appealed. Once an appeal is filed, there is no requirement for an employer to abate the hazard on which the citation is based until the appeal is resolved, which can take over two years.

The BSA report understandably voices concern about the message potentially sent to KFM by not penalizing them for violations found, the concern being that "weakening the threat of a penalty for serious violations reduces the likelihood that employers will fix safety problems of which the Division is not aware." However, at the same time Cal/OSHA looked into the manganese issue the agency began regular site visits to look generally for all serious hazards that are encountered at worksites of this type. The test for the partnership was whether KFM would cooperate in the process of identifying serious hazards and move swiftly to correct them. They passed that test. It was clear that KFM was not hiding hazards and equally clear that they were willing to abate hazards promptly when they were discovered.

As the BSA report notes, approximately 200 hazards were found and immediately or promptly abated as a result of these site visits. This far exceeds the level of scrutiny any other bridge construction project has received, and Cal/OSHA believes the low incidence of reportable injuries, injuries that are unlikely to be hidden because of the difficulty of doing so, reflects the effectiveness of this approach.

In conclusion, we acknowledge that the interface of traditional enforcement and use of the partnership approach must be carefully managed, and can lead to concerns that an employer engaging in a partnership (or any other form of consultation) might be forgiven penalties when they should be proposed. Therefore, a continuing focus for the two partnerships now taking place

and for any to be considered in the future will be the manner in which complaints (whether formal or informal) will be managed. Cal/OSHA will carefully scrutinize all complaints and will respond with an investigation as well unless, as per Labor Code section 6309, "from the facts stated in the complaint, it determines that the complaint is intended to willfully harass an employer or is without any reasonable basis."

We look forward to responding to BSA with the specific results of our additional investigation in the near future. In the meantime, please do not hesitate to contact me if you would like me to provide you with any additional information, or if you have any questions regarding our current response.

Sincerely,

(Signed by Rick Rice)

Rick Rice
Undersecretary
Labor and Workforce Development Agency

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COMMENTS

California State Auditor's Comments on the Response From the Labor and Workforce Development Agency

To provide clarity and perspective, we are commenting on the response to our audit report from the Labor and Workforce Development Agency (agency), which oversees the Division of Occupational Health and Safety (division) of the Department of Industrial Relations. The numbers corresponds with the numbers we have placed in the agency's response.

- Contrary to the agency's statement, our recommendation does not suggest that the review of the accuracy of the federal Occupational Safety and Health Administration's Form 300: *Log of Work-Related Injuries and Illnesses* (annual injury report) statewide "would involve a substantial investment of resources." Rather, the division will need to determine the resources needed for this task when it considers how to implement this recommendation. As we state on page 37, "if the division believes it does not have the resources necessary to undertake this task in light of its other priorities, it should seek additional funding from the Legislature for this effort."
- The agency inaccurately describes our conclusions related to its handling of the April 2004 complaint. First, we did not conclude "that it was unlawful for [the division] to respond to an informal complaint by conducting a site visit, ...". Rather, as noted on page 29, we concluded, and the acting chief agreed, that in the future when a partnership agreement exists between the division and an employer, the division should handle complaints about that employer strictly in enforcement mode and issue citations if serious violations are found. Second, we did not conclude that it was unlawful for the division to allow Kiewit/FCI/Manson, a joint venture (KFM), to abate the hazard of manganese exposure promptly. We do not see how issuing a citation to a company would stop the division from allowing the company to promptly abate a serious hazard that the division finds during an inspection.
- Although the agency indicates that an employer's acceptance of consulting services is the legal rationale for entering into a partnership, it fails to address our concern that the

division's informal partnership with KFM started with a complaint-related inspection. As we note on page 27, investigating an employee complaint is not specifically included in the list of consultation services outlined in state law. Consequently, we expected that if the division exercised its discretion to conduct an investigation of an informal complaint, it would have done so in its standard enforcement mode and issued citations for serious violations found.

Agency comments provided as text only

January 19, 2006

Business, Transportation and Housing Agency
980 9th Street, Suite 2450
Sacramento, CA 95814

Elaine M. Howle, State Auditor*
Bureau of State Audits
555 Capitol Mall, Suite 300
Sacramento, CA 95814

Dear Ms. Howle:

Attached is the Department of Transportation (Caltrans) response to your draft report, *San Francisco-Oakland Bay Bridge Worker Safety: Better State Oversight Is Needed to Ensure Injuries Are Reported Properly and Safety Issues Are Addressed* (#2005-119). I appreciate your acknowledgement of the importance that Caltrans places on safety, and the opportunity to respond to your draft audit report.

As your report notes, the Skyway project is one of the largest phases of the replacement of the East Span of the San Francisco-Oakland Bay Bridge (SFOBB). Replacing the East Span is an extremely complex engineering feat, making safety an even greater factor than it would be on a more routine seismic project. Therefore, Caltrans is taking extra measures to ensure the safety of workers, such as holding make-up sessions for safety meetings. Your auditors considered the safety oversight by Caltrans to be sufficient, but did make two recommendations for further improvement: ensure the independence of the Skyway project safety coordinator, and ensure that construction managers and staff on the Skyway project attend required safety training sessions.

I am pleased to note that Caltrans has already taken action to address the recommendations by changing procedures so the Skyway project safety coordinator will provide reports directly to the SFOBB Construction Manager. In addition, Caltrans is increasing its tracking and verification of employee attendance at safety meetings to improve compliance with attendance requirements. The attached response from Caltrans provides further detail.

* California State Auditor's comment appears on page 57.

Elaine Howle
Page 2
January 19, 2006

If you need additional information, please do not hesitate to contact me, or Michael Tritz, Deputy Secretary for Audits and Performance Improvement within the Business, Transportation and Housing Agency, at (916) 324-7517.

Sincerely,

(Signed by Sunne Wright McPeak)

SUNNE WRIGHT McPEAK
Secretary

Attachment

Department of Transportation
Office of the Director
1120 N Street
P. O. Box 942873
Sacramento, CA 94273

January 17, 2006

Sunne Wright McPeak, Secretary
Business, Transportation and Housing Agency
980-9th Street, Suite 2450
Sacramento, CA 95814

Dear Secretary:

I am pleased to provide our response to the Bureau of State Audits (BSA) draft audit report entitled, "San Francisco – Oakland Bay Bridge Worker Safety: Better State Oversight Is Needed to Ensure Injuries Are Reported Properly and Safety Issues Are Addressed."

Overall, the BSA draft audit report found that the California Department of Transportation (Caltrans) safety oversight on the San Francisco-Oakland Bay Bridge (SFOBB) Skyway project is sufficient. However, the draft report provided the following recommendations to further improve Caltrans safety oversight on the SFOBB Skyway project:

- 1) To ensure that the project safety coordinator assigned to the Skyway project has the necessary independence and authority to evaluate and report on project safety, Caltrans should have this position be independent of the managers whose safety performance the coordinator must oversee.
- 2) Caltrans should ensure that its construction managers and staff on the Skyway project attend the required bi-weekly safety sessions and other necessary safety training.

Caltrans Response

Response to Recommendation 1:

The BSA audit report did not identify, nor is Caltrans aware of, any instance in which the Skyway Project Safety Coordinator (Project Safety Coordinator) has been hampered by having a reporting relationship to a field Senior Transportation Engineer. Under the current notification procedures, the Project Safety Coordinator notifies the District's Toll Bridge Safety Coordinator of all reportable accidents and incidents. This information is then transmitted to district and headquarters management. Furthermore, the District Toll Bridge Safety Coordinator and the Caltrans Headquarters Safety Officer may at any time review the project independently for safety, monitor compliance efforts, and initiate any necessary safety changes.

In addition, the Caltrans Headquarters Safety Officer, who works in the Headquarters Office of Health and Safety Services (OHSS), provides a service to District 4. The Project Safety Coordinator has direct access to and consults with OHSS on safety issues.

The position of Caltrans is that there has not been a lack of independence of the Project Safety Coordinator to evaluate and report on project safety to top management. However, to address the BSA audit concern, and to establish even greater independence from his immediate supervisor, the Project Safety Coordinator will provide reports regarding safety directly to the SFOBB Construction Manager. In addition, the SFOBB Construction Manager will report directly to the Deputy District Director for Construction, and the District Toll Bridge Construction Safety Coordinator will provide reports regarding safety directly to the Deputy District Director on a periodic basis.

Response to Recommendation 2:

The SFOBB Construction Manager has taken the following steps to improve attendance at the bi-weekly safety meetings:

- 1) Make-up sessions have been implemented.
- 2) Safety meeting sign-in sheets have been modified to improve tracking and verification of compliance. The sign-in sheets are sorted by supervisor, and differentiate those employees required to attend the safety meetings on a bi-weekly or quarterly basis.
- 3) Attendance at safety meetings is evidenced by attendees' signatures.
- 4) After each safety meeting, copies of sign-in sheets are provided to each supervisor for verification that attendance is accurate and compliant with the requirements.

Other necessary safety training will be monitored for compliance by the employee's direct supervisor on the SFOBB Skyway project. Construction Safety Orientation/Refresher, Confined Spaces, Fall Protection, and Defensive Drivers training will be tracked for compliance in accordance with the Caltrans Safety and Construction Manuals.

Caltrans will continue to work diligently to provide a safe work environment for its employees, contractors, and the general public. We consider the findings and recommendations of this draft audit report as helpful, providing us with an opportunity to further develop and improve the safety program on the new SFOBB Skyway.

Sunne Wright McPeak, Secretary
January 17, 2006
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If you have any questions, or require further information, please contact Pete Siengenthaler, SFOBB Construction Manager, at (510) 622-5112, or Gerald Long, External Audit Coordinator, at (916) 323-7122.

Sincerely,

(Signed by Randall H. Iwasaki for)

WILL KEMPTON
Director

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COMMENT

California State Auditor's Comment on the Response From the Department of Transportation

To provide clarity and perspective, we are commenting on the response to our audit report from the California Department of Transportation (Caltrans). The number corresponds with the number we have placed in Caltrans' response.

- Caltrans misunderstands our concern. Although we did not attempt to identify any specific instances in which the independence of the Skyway project's safety coordinator was impeded, the potential exists for such a condition because of the current location of the position in the organizational structure. Furthermore, if such a situation had in fact occurred, it is not likely that documented evidence would have been available for our review. The correction that Caltrans indicates it will take to remedy this situation does not present an appreciable difference from the condition we evaluated. As we recommended, the project safety coordinator should be independent of the managers whose safety performance the coordinator must oversee.

cc: Members of the Legislature
Office of the Lieutenant Governor
Milton Marks Commission on California State
Government Organization and Economy
Department of Finance
Attorney General
State Controller
State Treasurer
Legislative Analyst
Senate Office of Research
California Research Bureau
Capitol Press