



# **Inquiry Into Personnel Practices Associated with the San Francisco-Oakland Bay Bridge Project**

**(REPORT AND FINDINGS)**  
**California Highway Patrol**



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### **SUMMARY**

On January 24, 2014, the California State Senate Committee on Transportation and Housing held an informational hearing entitled “*Lessons Learned from the Development and Construction of the Bay Bridge.*” Multiple California Department of Transportation (Caltrans) employees and private contractors who worked on the new eastern span of the San Francisco-Oakland Bay Bridge (SFOBB) testified at the hearing about the quality and safety of the eastern span as well as the cause of delays in construction. As a result of this hearing, concerns arose regarding the removal of a Caltrans Supervising Bridge Engineer and a quality assurance contractor, MACTEC, on the SFOBB. California State Transportation Agency (CalSTA) Secretary Brian Kelly, requested the California Highway Patrol (CHP) investigate the reassignment of the Caltrans engineer and the loss of the contract by the private contractor (MACTEC) as possible violations of the California Whistleblower Protection Act (WPA), Government Code § 8547, et seq., or any other associated violation of state law or policy.

CHP investigators assigned to the case were charged with evaluating whether administrative and/or criminal misconduct occurred during construction of the SFOBB. If administrative misconduct was identified, CHP investigators were directed to provide findings and make recommendations to CalSTA. If criminal misconduct was identified, CHP investigators were directed to take appropriate enforcement action pursuant to their jurisdictional authority prescribed in Government Code § 14615(b).

### **SCOPE**

This investigation did not examine facts surrounding the merits of construction or component quality associated with the bridge, and does not purport to quantify or evaluate issues of longevity or safety.

The scope of this investigation was limited to a determination of whether any Caltrans employees violated the provisions of the WPA and associated criminal and civil statutes. Specifically, this investigation sought to answer the following questions:

1. Was a Caltrans Supervising Bridge Engineer, influenced or coerced from reporting his concerns and removed from the Bay Bridge project in violation of the WPA?
  2. Were the private quality assurance contractor project manager and contract firm, MACTEC, influenced or coerced from reporting concerns and replaced on the Bay Bridge project in violation of the WPA?
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3. Was a Caltrans Engineering Geologist influenced or coerced from reporting concerns in violation of the WPA?

Investigators determined that conduct which might be associated with a WPA violation relating directly to MACTEC could constitute a violation of numerous similar statutes. These issues were thoroughly examined in the course of this investigation.

Although not included in the original scope, the investigation additionally sought to determine if the Caltrans Toll Bridge Program Manager discouraged employees from documenting their concerns in an attempt to subvert the intent of the California Public Records Act (PRA). This issue is addressed in the Additional Issues and Recommendations Section.

A team consisting of 13 CHP investigators conducted interviews of over 50 witnesses, including all members of the project management team and the principal engineers assigned to the SFOBB during the contract. Additionally, the CHP team conducted a thorough review of volumes of project documentation.

### **BACKGROUND:**

#### **Introduction**

Throughout the construction process and since the east span completion in 2013, concerns have been raised regarding the quality of several components of the bridge. The concerns have been over production of the orthotropic box girder and tower sections at Zhenhua Port Machinery Company (ZPMC), of Shanghai, China, the fabricator for American Bridge Fluor Joint Venture (ABFJV). Personnel within Caltrans, as well as the principal engineer for the private contractor responsible for quality control assurance, MACTEC, Inc., elevated these concerns to Caltrans executive management. The ensuing debate on both sides has called into question the Caltrans response as well as associated personnel and contracting decisions relating to the SFOBB. A background of the events ultimately resulting in these decisions is outlined below.

***Investigator's Note:** The events in question occurred between the years 2007 and 2011. The significant lapse in time created a multitude of investigative challenges, including difficulties in locating documentation and faded recollections of witnesses.*

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### **History**

The SFOBB is one of seven toll bridges that cross the San Francisco Bay. It is a vital element of the state highway transportation system in California and carries more vehicular traffic than any other bridge in the system. In 1989, the Loma Prieta Earthquake caused a portion of the bridge to collapse and highlighted the deficiency of the old span. As a result, the decision was made to replace the old east span with construction of a new bridge. The next several years were spent studying feasibility, selecting a design, and addressing various political and environmental issues surrounding construction.

In mid-2001, a design concept was selected and approved for the SFOBB consisting of a skyway from Oakland and transitioning to a Self-Anchored Suspension (SAS) span near Yerba Buena Island. Construction of the skyway began in 2002 and continued until 2005. The SAS portion of the bridge went out to bid initially in 2004. At the close of the bid deadline, only one bid was submitted on the SAS project. The sole bidder was a joint venture consisting of American Bridge Company, Fluor Corporation, and Nippon Steel. This bid of \$1.4 billion was nearly double the amount originally estimated for the project. The bid was rejected by Caltrans, and the SAS project was tabled for further review. The review included consideration of alternative funding to remove the federal funds and the "Buy America" requirements. The "Buy America" requirements mandated that steel, iron, and manufactured products be produced in the United States. Several new plans were considered, and Caltrans determined that a skyway design was the most feasible for the entire east span. However, in December 2004, the concept of the skyway was rejected by the legislature and public opinion. In December 2004, new source funding was identified that removed the "Buy America" requirement. This less restrictive funding alternative increased the potential for additional bidders on the project and allowed for foreign steel sourcing and fabrication. The SAS design was again selected, and the project was again open for bid.

### **Creation of the Toll Bridge Program Oversight Committee**

In 2005, Assembly Bill 144 (AB144) was signed by Governor Schwarzenegger, which created the Toll Bridge Program Oversight Committee (TBPOC) and mandated the SAS design. The committee consisted of the Director of Caltrans, the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). AB144 required the TBPOC to report to the legislature regularly and provide updates on the progress of the SFOBB. In addition, it set budgetary constraints and a delivery schedule. AB144 increased funding for the project from \$2.6 billion to \$5.49 billion and added a program contingency fund of \$900 million. Initially, TBPOC conducted their meetings in closed session due to an exemption from the "Bagley-Keane Act." Although meeting minutes would eventually

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be published and meetings conducted in open session, the initial lack of public access to TBPOC actions caused concerns about a lack of transparency. The timeframe of this investigation has been the period after implementation of the TBPOC.

### **SFOBB EAST SPAN CONSTRUCTION IN CHINA:**

#### **Selection of Fabrication Contractor**

There were two bids submitted for the SAS construction, one from a consortium of Kiewit/Koch/Skanska/Manson for \$1.68 billion. ABFJV submitted the lowest bid for \$1.43 billion and was selected by Caltrans pursuant to California Public Contract Code § 10180, which requires construction contracts be awarded to the lowest bidder. The difference in the bids was attributed to lower labor costs associated with steel fabrication.

The contract for the SAS portion of the new east span of the SFOBB was awarded to ABFJV in 2006. ABFJV was a joint venture between two companies, American Bridge Company and Fluor Corporation. The formation of a joint venture between large companies is not uncommon in the construction industry, particularly on “mega projects.” According to their respective websites,

*“American Bridge is a legendary construction company whose projects include a significant proportion of the world’s large bridges, marine installations, and other complex structures. Its history, project experience, safety leadership, reputation for integrity and competence, commitment to in-house development of human talent, equipment fleet, and above all, its advanced engineering technology, make the company unique in the entire world.”*

*“Fluor is one of the world’s largest publicly traded engineering, procurement, construction (EPC), maintenance, and project management companies. Fluor works with governments and clients in diverse industries around the world to design, construct, and maintain complex and challenging capital projects.”*

ABFJV chose ZPMC located in Shanghai, China, as the fabricator of the steel structure components and listed ZPMC in the bid package. At the time, ZPMC was a port crane manufacturer with minimal prior bridge fabrication experience. Although there were other fabrication companies with bridge experience, Caltrans had little influence or control over the selection of an individual fabricator once the bid was awarded.

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### **Quality Assurance and Quality Control**

During the construction of the SFOBB, Caltrans was responsible for verifying quality of all work performed. There are two terms used to describe the inspection process, Quality Control (QC) and Quality Assurance (QA). The QC is the responsibility of the contractor or fabricator (ZPMC). QC is provided to ensure compliance with contract specifications. QA is the responsibility of the owner (Caltrans). It is mandated by California Government Code § 14105, which states,

*(b) Unless a contract provides that a contractor or service provider will perform quality control under the contract, the department may assign qualified state employees or other persons, subject to existing law, to perform all inspection and testing required under existing law, regulation, or policy on any project performed under its jurisdiction that requires the inspection of construction activity or material, including, but not limited to, commercial and fabricated material.*

*(c) If no other law or regulation requires inspection and testing, the department may adopt and enforce a strict policy requiring inspection of construction activity or material, including, but not limited to, commercial and fabricated material.*

*(d) Any contractor or service provider who performs quality control inspections and tests as part of a contract with the department shall be certified on a prescribed random basis by qualified state employees or an organization certified by the department pursuant to applicable law, regulation, or policy.*

*(e) Quality assurance testing and inspection shall be performed over the entire period of a contract.*

In order to accomplish its QA responsibilities, Caltrans uses a consultant firm under contract for source (or fabricator) inspection. Caltrans, Office of Engineering Services, Materials Engineering and Testing Services (METS), is responsible for administering QA inspections. METS first reached an agreement with a contractor for QA work following a welding test falsification controversy in 1995 in Mission Valley. Prior to this time, Caltrans did not have sufficient safeguards in place to verify QC was being satisfactorily performed. In the Mission Valley case, a contractor had falsified tests on welds in reinforcement rods used in construction of a bridge project in southern California. In response, a Caltrans Engineering Services Division Chief was given oversight of METS and implemented an on-call source inspection contract. Law Cradle Engineering (which became MACTEC and later AMEC) was the first firm hired by

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Caltrans. The statewide on-call QA contract was rebid and awarded to Law Crandle/MACTEC/AMEC for the next several years.

### **ZPMC Audit**

As part of the SAS construction contract, Caltrans required the QA contractor at the time, MACTEC, to conduct an audit on the proposed fabrication facility to ensure it had the overall capability to produce the required materials. METS directed MACTEC to conduct an audit of ZPMC at the Changxing Island facility on February 15 and 16, 2006. MACTEC determined ZPMC was capable of performing the work and had certifications from the American Institute of Steel Construction. However, during the audit, MACTEC identified several items of concern that required attention. The items listed were:

- Inadequate number of qualified welding inspectors;
- Inadequate number of Non-Destructive Testing (NDT) personnel;
- Lack of NDT written practice in accordance with American Society of Nondestructive Testing (ASNT) standards;
- Lack of experience with fabrication and assembly of bridges in general;
- Inadequate quality of welds observed by the audit team;
- Inadequate experience with U-rib (supports for the deck plates) welding; and
- Inadequate U-rib forming capacity.

The facility was granted a “contingent pass” in the audit, requiring a follow-up audit to be completed after satisfactorily addressing the concerns. ABFJV responded to the audit and provided Caltrans with their plan to address each of the concerns identified. These steps included: ABFJV acquired additional personnel to address the concern of the lack of qualified inspectors and testing personnel, developed a written procedure for NDT testing, and offered to demonstrate welding capabilities prior to the start of the mock up. On August 9, 2007, MACTEC conducted a follow-up audit of ZPMC. On August 23, 2007, Caltrans issued an Audit Summary, recommending ZPMC be given an audit status of “pass,” and production was allowed to begin.

### **Logistical Challenges and “Team China”**

The production of steel components on such a large scale in a foreign country created many logistical challenges. Some of those challenges included finding personnel willing to be assigned to reside in China, locating housing, travel to and from China, and difficulty in securing the proper visas. In addition, time difference (15 hours) made communication with decision makers

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in California difficult. Cultural differences were also a problem. Caltrans personnel on the project were accustomed to dealing with fabricators in the United States whose primary focus was minimizing the number of hours expended on any given component due to high labor costs. This naturally creates an environment where speed and accuracy are preeminent factors in the process. However, labor costs in China are exceptionally low. Therefore, ZPMC was not averse to repairing or reworking fabricated components multiple times in order to ultimately comply with contract specifications. Additionally, the accelerated schedule established after formation of the TBPOC magnified the impact of delays that would have resulted if the fabricator was forced to stop and correct the problems.

In response to these challenges, a Caltrans team consisting of representatives from Design, Construction, and METS was assigned to the Shanghai fabrication facility during production, and the "Team China" concept was formed. The philosophy from Caltrans executive management was "Team China" would handle issues arising from production on-site in China. Caltrans assigned a principal level engineer from Structures Construction to spearhead this new concept.

### **Change in QA Reporting**

Traditionally, Caltrans Structures Construction did not have personnel assigned to a fabrication facility. Normally, the only on-site representatives for Caltrans were QA inspectors from METS. The on-site inspectors reported to the regional METS division office, and METS would in turn report their findings to Construction. According to the METS Division Chief, the METS reporting chain was put in place to provide checks and balances to ensure the reporting of problems was not influenced by the potential impact on schedule.

During production of the Orthotropic Box Girder (OBG) and tower sections in China, Caltrans implemented a change in the QA reporting process. The reporting chain for QA inspections and associated reports was moved from the METS office in Sacramento directly to Structures Construction and the construction lead. A principal level engineer was put in charge of construction and assigned to China. The presence of a Caltrans manager from Structures Construction at a production facility was, in itself, a vast departure from past practice. Some witnesses expressed concern over the QA reporting process being changed. Other witnesses, however, agreed that due to the need to have immediate communication in this project, it was a proper streamlining of information. Although evidence could not be established that the change in reporting was motivated by an effort to avoid looking for defects, this change created a perception in the minds of many witnesses that METS reporting directly to the Caltrans Construction Manager weakened the QA function on this project.

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The Senior Principle Engineer of MACTEC and the METS Division Chief expressed concern for the importance of retaining METS independence despite the new “Team China” structure. The Senior Principle Engineer of MACTEC related the METS Division Chief gave direction to conduct meetings without the Construction personnel present and report findings back to METS. The METS Division Chief did not want the quality message to be filtered. There were also disagreements between the Caltrans Construction Manager, the Caltrans Program Manager, and the METS Division Chief regarding control over inspectors and the reporting of production problems. The Senior Principle Engineer of MACTEC said there was direction by the Caltrans Construction Manager not to put things in writing and not to look for problems that could delay the schedule. These changes in inspection reporting created tension between METS and Construction.

### **Unusual Fabrication Process**

Logistical issues were not the only obstacles with production in China. Caltrans was not accustomed to dealing with the management philosophy employed by ZPMC. For example, the Senior Principle Engineer of MACTEC explained the Chinese saw the terms and conditions of the contract as a starting point for a negotiation process, rather than requirements to be met. Additionally, ZPMC was not motivated by the same incentives and penalties commonly implemented in the United States. Domestic fabricators have a built-in incentive to ensure quality is achieved the first time due to the average labor rate. Conversely, ZPMC had no such incentive because labor costs were minimal. As a result, ZPMC was less concerned about repair, retooling, or refabricating. Additionally, contract specifications and applicable welding code standards did not restrict or prohibit multiple repairs or refabricating.

Another unique feature of the fabrication at ZPMC was the immense size of the facility and the difficulty in keeping track of all the fabricated components. The Senior Engineer for Caltrans, Office of Structural Materials, said one of the major problems was tracking fabricated sections of the bridge, or “panels.” The Senior Engineer said ZPMC was not talking to Caltrans and some of the panels could have been relocated over a mile away due to the immense size of the facility. There was concern because the inspectors spent significant amounts of time tracking the panels and were unsure if all panels had been tracked or fixed.

### **Schedule Pressure**

An additional challenge of production in China was the emphasis on an accelerated schedule created by TBPOC. Several witnesses indicated the current TBPOC chairman made comments during a project kick-off dinner about having a contingency fund to spend to improve schedule. The dinner included several people from the project, ABFJV officials, Caltrans officials, and

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others. The TBPOC chairman made it clear the bridge had to be completed before another earthquake occurred, and there was going to be a push to get the work done.

The TBPOC chairman said the intent of comments made was misrepresented. The TBPOC chairman's recollection was that ABFJV was advised there was money available to appropriately accelerate the project.

### **U-Rib Weld Problems**

Production problems were encountered early at ZPMC, the most prevalent being weld quality and consistency. A fabrication consultant to Caltrans Office of Structures Construction suggested, and Caltrans agreed, to allow production of a small number of panels (6-12) to test for quality. This is common practice in the early stages of the fabrication process. However, ZPMC shifted into full fabrication and did not limit production to the small number of panels originally agreed upon. Caltrans management considered issuing a "stop order" until ZPMC met this requirement. A stop order occurs when the owner (Caltrans) takes action to direct the contractor (ABFJV) to stop work or production for a number of reasons, but commonly because of a defect or violation of the contract. The stop order creates a complete halt to all production. This is considered a drastic step as it creates a liability to the owner for potential claims from the contractor for costs incurred during the stop order. In this case, Caltrans elected to allow ZPMC to continue due to concerns over schedule.

The majority of panels did not meet contract specifications, largely due to cracks within the U-rib stiffener welds. The U-rib stiffeners are U-shaped steel reinforcement components welded to the bottom of the steel deck plates. Some witnesses indicated there were "hundreds" of panels produced that did not comply with contract standards. The Senior Principle Engineer of MACTEC and other witnesses expressed concern that ZPMC was continuing to produce panels and unwilling to stop production to ensure quality standards were met. The continued production of defective panels, combined with the unwillingness of Caltrans to stop production, gave the impression that quality was not a priority.

The Caltrans Deputy Program Manager was surprised at the number of panels that had been produced but were not approved. This issue caused a great deal of controversy over how to proceed. Some managers were in favor of halting production and forcing the contractor and fabricator to propose a solution without additional input from Caltrans. Others were in favor of contributing to the proposed solution and seeking alternative options to resolve the problem. The Caltrans Deputy Program Manager expressed the opinion that the "group" in China was not working together and "everybody hated each other." Ultimately, the failure to resolve the issue led to a large number of deck panels stacking up which halted or slowed fabrication and

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production after the issuance of Contract Change Order (CCO) #89 (addressed at length later). Some deck panels were allowed to be repaired, some were accepted, and some were discarded.

The Caltrans Deputy Program Manager traveled to China and visited the production facility to deal with the welding issue and observed 100 to 300 panels stacked to the ceiling. The Deputy Program Manager would not speculate as to what the motive was for not stopping production.

The Caltrans Senior Bridge Engineer was an advocate for stopping production. However, the Caltrans Project Manager and the Caltrans Construction Manager provided justification for continuing the process. They related ZPMC was making improvements and getting better. If production were to stop, they would not have had the opportunity to gain the experience necessary to make the improvements. To complicate matters, Caltrans could not direct ZPMC activities without going through the primary contractor. On a construction contract, the primary contractor has sole responsibility for the fabricator.

The Caltrans Project Manager recalled a discussion that took place between Caltrans managers requesting input and recommendations regarding this issue. Ultimately, the decision was made by the Caltrans Construction Manager to continue with the project because the CCO #89 did allow for some cracks. Caltrans management arrived at a consensus that, as long as the rejected cracks were repaired, ABFJV should continue.

### **Opinion from Outside Expert**

Caltrans obtained an opinion from an expert consultant firm to resolve the issue of cracks in the panel welds. The firm is widely considered the preeminent expert and foremost authority on this matter. The expert determined that, despite the identified cracks, many of the panels were nevertheless acceptable because the original contract weld standard was overly restrictive. The expert conducted a scientific review to determine what was necessary to get the performance out of the welded joint on the U-rib stiffeners. In a trip report, the expert outlined the issue involving cracking in the tack weld between the stiffener and the deck plate. The expert cited several experimental studies on fatigue resistance of the orthotropic rib to deck welds and opined the cracks in the welds would not propagate into the deck plate or into the final sub-arc weld pass. The expert related the cracks in the tack welds were insignificant, provided there was 80 percent penetration as measured by the throat of the partial joint penetration weld.

Some witnesses had significant roles on the project and questioned the expert's conclusions. A Fabrication Manager was hired as a consultant to Construction, with expertise in fabrication. The Fabrication Manager personally sought direction from The Welding Institute, the leading international membership body for welding and joining professionals. The Fabrication Manager

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was unaware of what the expert was told because of not being allowed to attend meetings with the Caltrans Construction Manager, the Caltrans Program Manager, and the expert. In addition, the Fabrication Manager believes the expert was given information specific to closed rib welds, not on the transverse cracks. The expert said it was acceptable to grind out the weld to a certain depth and weld over the same spot. The Fabrication Manager did not agree, and said The Welding Institute also did not support that solution. The Fabrication Manager said welding over the existing cracks would only result in the existing cracks propagating into the new welds.

An expert peer review panel subsequently issued a detailed report affirming the opinion of the expert regarding the closed rib welds (*Project Team Response to QA/QC Expert Panel Recommendations Report* [300 page weld report]). However, the Fabrication Manager admitted to not reading the report and could not provide an opinion on its accuracy.

The Senior Principle Engineer of MACTEC characterized the expert as a very good structural mechanics expert, but stipulated that the expert had to be given all the facts to be able to come to the right conclusion. The Senior Principle Engineer of MACTEC questioned the basis for the expert opinion and felt the expert was not getting all the information. The Senior Principle Engineer of MACTEC related that along with others assigned to the project they were coached by the Caltrans Construction Manager and the Caltrans Project Manager on what could be said to the expert.

According to the expert, travel to China was accomplished to view the problem at the ZPMC production facility. The expert related the information the engineers provided while in China, was accurate, thorough, and complete. The expert said there were many cracks, and it did not change their opinion. The expert inspected the welds, girders, and the cracks and formed the opinion they were safe. The expert met with the Senior Principle Engineer of MACTEC and other welding inspectors and Caltrans managers. They examined the fabrication, tower components, panels, and various portions of the project. There were several conversations that led the expert to believe they were fully informed. The Senior Principle Engineer of MACTEC showed the cross sections of the panel and provided enough information to complete the necessary evaluations. The expert related more panels were rejected than needed to be. The expert said the Fabrication Manager's feedback was no more significant than the Senior Principle Engineer of MACTEC.

The expert further related Caltrans was very open, and the information gathered was accurate and beneficial to the report. The expert stated the fabricator was very conservative with allowable cracks. The expert further related the American Welding Society (AWS) code in place at the beginning of this contract did not take into account what was needed from the type of joint being used on the SFOBB, and an AWS code change would be forthcoming. The expert stated

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Caltrans put a lot of people on the project, more than any other state has, and felt they took every precaution necessary to build the safest bridge possible. The expert said Caltrans was very conservative in its contract specifications, and the SFOBB was built to higher standards than in many other places throughout the world.

Following the expert's evaluation, Caltrans processed CCO #89 that allowed for cracks in the tack welds, as long as the final weld met the requirement of the 80 percent penetration outlined by the expert. This change was viewed by the Senior Principle Engineer of MACTEC, the Fabrication Manager, the Caltrans Supervising Bridge Engineer, and the Resident Engineer as a compromise of quality on the project. These witnesses were convinced that the AWS, D1.5 welding code did not allow cracks, and it was specifically referenced in the contract for the SFOBB. The *Project Team Response to QA/QC Expert Panel* had a contrary opinion about this issue as explained in more detail on page 15.

### **Blue Tag Process**

The change to the welding standard was not the only controversial new process implemented on the SFOBB. In December 2007, Caltrans, Office of Structural Materials, approved the development of a new process when a fabricated element was not in compliance with the contract specifications. This new process was implemented on the SFOBB project and was termed "blue tag." The blue tag was a substitution to the CCO requirement for an individual component. Prior to the blue tag process, when a component was not within the contract specifications, but was acceptable for the intended purpose, a CCO was required before it could be approved for use on the project. The blue tag process was a more effective process to quickly approve a component that was determined to be "fit for purpose." The blue tag approval required input from Structures Construction, METS, and Design before the component could be accepted.

The Caltrans METS Division Chief related the blue tag idea came from the Senior Principle Engineer of MACTEC and was implemented so Caltrans could accept materials that did not meet specifications. The METS Division Chief said that after the blue tag material was accepted, you could do a fit for purpose on the material at a later time.

In the SFOBB project, the new blue tag process was implemented to save time and keep the project on schedule. However, a former Caltrans Resident Engineer of the SFOBB and a former Caltrans Structure Representative for the SAS stated the process allowed for components to be accepted at a lower quality standard and Caltrans often accepted "good enough" or "fit for purpose," effectively lowering standards to accommodate schedule.

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The blue tag process caused many witnesses to suspect Caltrans was relaxing QA standards even though the process was actually developed by the Senior Principle Engineer of MACTEC, the same individual who many witnesses believe was committed to imposing the highest QA standards. This suggests a lack of communication among personnel involved in the SFOBB project and a lack of understanding about the purpose behind changes in certain procedures during the fabrication process.

### **Changes to Non-Conformance Report Process**

Another controversial change was the implementation of the Incident Report (IR) process. As production problems with welds continued in 2009, Caltrans was forced to issue more Non-Conformance Reports (NCRs). Traditionally, if a part was not determined to meet the specifications of the contract, an NCR was issued. The NCR served as documentation for the project record and provided notice to the contractor if an issue was outside the provisions or specifications of the contract requirements. Any deviation from the contract was traditionally documented on an NCR, including a procedural issue, even if it had no consequential effect on the product or construction. The issuance of NCRs was time consuming and had a negative stigma to the contractor.

In response to the increase in NCRs, a new QA contractor, CALTROP/Alta Vista Solutions, developed the IR process to streamline repairs in a less formal manner. An IR was completed by an inspector when an issue with contract specifications was noted. The IR was forwarded to an engineer with Structures Construction for review and determination of needed action. A Structures Construction engineer determined whether an issue identified in an IR needed to be elevated to an NCR.

The President of Alta Vista Solutions claimed the IR procedure was their idea, and was necessary due to the large number of NCRs being generated without the knowledge or input of personnel from Caltrans Construction. Since Structures Construction was responsible for the administration of the contract, it was critical they were informed and aware of the issue before the contractor was notified of the NCR. In addition, in China the fabricator was especially sensitive to being served an NCR, which strained the relationship between Caltrans and ZPMC. The IR process was less formal than the NCR process. If an issue was documented as an NCR, it had to be addressed or resolved and closed out. Construction made the decision whether an IR was elevated to an NCR.

Although the President of Alta Vista Solutions and others insist all issues documented using the IR process were addressed, the new process created suspicion, once again, that Caltrans was weakening its QA oversight. Caltrans personnel with METS Division questioned the change and

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implementation of the IR process. This led to the perception that Caltrans reduced expectations of quality by the fabricator. However, the process still required the welds to be repaired to conform to the acceptable standard.

### **Transverse Crack Identification Testing Process and Reassignment of Senior Bridge Engineer**

In mid-2009, a controversy developed over the extent of weld inspections. In October 2009, ZPMC was prepared to ship the first major roadway sections to California. The Caltrans Supervising Bridge Engineer insisted a more extensive form of testing be conducted on those sections prior to acceptance and shipping. This culminated in a conference call confrontation with the Caltrans Program Manager. The Caltrans Program Manager traveled to China shortly after the conference call to personally reassign the Caltrans Supervising Bridge Engineer from the SFOBB project. Ultimately, the SFOBB sections questioned by the Caltrans Supervising Bridge Engineer were removed from the ship for testing and repair. However, the incident created a perception among many personnel that they were not free to express their opinion or contradict management decisions.

The Caltrans Supervising Bridge Engineer was in charge of production related to the tower section of the bridge and was asked to fulfill the Caltrans Construction Manager's duties for a short period of time due to vacation. During this time, a welding issue on the panel section splices was detected. The issue was the discovery of transverse line indications referred to by many witnesses as cracks in the splice welds between large panel segments. The indications were a sign there could be cracks in the joint between two panel sections. The indications were first detected on panels #3 and #4. Welds on panels #1 and #2 were tested utilizing a scanning pattern (scanning pattern E) as specified in the contract and AWS D1.5 code. The panels were determined to be acceptable and were loaded awaiting shipment to Oakland. The Caltrans Supervising Bridge Engineer related the type of indication observed was difficult to detect, and there was concern panels #1 and #2 would have previously undetected defects that required additional testing and possible repair.

In order to detect the indications, the Caltrans Supervising Bridge Engineer was a strong proponent of using a specific scanning pattern that was not specifically required in the contract (scanning pattern D). Scanning pattern D was a more invasive inspection because it required the weld face to be ground flush to the level of the surrounding panel surface. Scanning pattern E did not require the weld to be ground and could be conducted without the need for any additional surface preparation. The Caltrans Supervising Bridge Engineer believed that scanning pattern D was the most effective in locating indicators, or cracks, in the deck panel splices. The Caltrans Supervising Bridge Engineer's opinion was the AWS code allowed for a variety of means to

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detect defects once indications of defects were present. However, due to the additional labor involved in grinding, there would have been a dispute over who was responsible to pay for the added expense.

The Caltrans Supervising Bridge Engineer prepared a power point presentation for management to address his concerns and provided three proposed solutions. However, there was no concurrence among personnel regarding the appropriate testing pattern to be used, and Caltrans project management subsequently made the decision not to use the pattern advocated by the Caltrans Supervising Bridge Engineer. Shortly thereafter, the Supervising Bridge Engineer was reassigned from the project. The Caltrans Supervising Bridge Engineer testified in the Senate hearing the reassignment came as a result of advocating for the additional testing.

To resolve the issue over testing patterns and other weld-related issues, the SFOBB project management team assembled an expert panel (QA/QC Expert Panel) to assess and provide recommendations on weld quality problems during production at ZPMC. The panel included members of the AWS Code Committee, a fracture mechanics specialist, and a welding engineer. Both the Caltrans Program Manager and Deputy Program Manager related that, due to the problems with the weld quality and the dispute among Caltrans personnel and consultants about the best way forward, they requested the Seismic Safety Peer Review Panel (SSPRP) examine the weld problems. A report was issued by the QA/QC Expert Panel that addressed which welds were the most critical (welds of interest) and would need a closer level of inspection. The report was reviewed by the SSPRP, and the panel concurred with the evaluation and recommendations included in the report. The Conclusion of the Project Team Response to QA/QC Expert Panel Recommendations was as follows:

*The fabrication of the OBGs for the Self-Anchored Suspension segment of the San Francisco-Oakland Bay Bridge is advancing on schedule for a final shipping date from ZPMC, in July 2011. The fabricated work is in compliance with the Contract Documents, including the American Welding Society D1.5 Bridge Welding Code.*

Caltrans personnel were asked in detail about the Caltrans Supervising Bridge Engineer's removal. The Caltrans Senior Bridge Engineer assigned to Structures Construction in China was a subordinate of the Caltrans Supervising Bridge Engineer. There was some debate over the best test to detect possible defects. The Senior Bridge Engineer related the contract called for compliance with the AWS code, and the code clearly stated that scanning pattern D was appropriate. According to the Senior Bridge Engineer it was the Caltrans Supervising Bridge Engineer's intent to personally check the panels to determine whether scanning pattern D was used. He believes it was at that point the Caltrans Program Manager formed the opinion the

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Caltrans Supervising Bridge Engineer was insubordinate and should be reassigned from the project.

The current Caltrans Resident Engineer on the SFOBB said the Caltrans Supervising Bridge Engineer took a position that broke the system down rather than solve problems that arose, such as transverse cracks. Although they never heard anything firsthand relating to the Caltrans Supervising Bridge Engineer's reassignment, they did not believe the Caltrans Supervising Bridge Engineer's reassignment was punitive.

The Caltrans Project Manager related that the Caltrans Supervising Bridge Engineer did not have the ability to carry out the responsibility and get the job done. The Supervising Bridge Engineer had a combative relationship with the contractor and let them struggle with issues instead of . Several issues occurred in China while under the direction of the Caltrans Supervising Bridge Engineer. The Project Manager described a conference call during which the Caltrans Supervising Bridge Engineer called the CEO of Alta Vista Solutions a liar, and that was the last straw. According to the Project Manager, it was the philosophy of Caltrans management to build a relationship with the contractor and the Caltrans Supervising Bridge Engineer did not feel that was essential. For this reason the Caltrans Supervising Bridge Engineer was reassigned because they did not work with the contractor and lost their trust.

Personnel from outside Caltrans were also interviewed regarding the Caltrans Supervising Bridge Engineer's overall performance on the weld inspection issue and their reassignment from the SFOBB. A private consultant with CALTROP stated there is some discretion regarding how to proceed in the investigation and solution of any identified problems. The Caltrans Supervising Bridge Engineer knew there were problems with the welds, and felt the best technique would be scanning pattern D. Instead, scanning pattern E was utilized, which is a method to discover discontinuities in non-ground welds. The CALTROP consultant indicated the AWS code stipulated that pattern E was appropriate. The consultant stated the welds were not required to be ground flat; the contract was not more restrictive than the AWS code, and did not require scanning pattern D. The Deputy Director of BATA stated the Caltrans Supervising Bridge Engineer is very skilled, but not the right person to move a project forward.

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### **REBID FOR QUALITY ASSURANCE CONTRACT:**

#### **MACTEC Contract**

During the Toll Bridge Seismic Retrofit Program, MACTEC held the contract from April 1, 2005, to March 31, 2009, for toll program work (contract #59A0429) and statewide work (contract #59A0428), to include all source inspection/QA services needed by Caltrans. Contract #59A0429 was executed between Caltrans and MACTEC in 2005, and was initially set at \$39 million. However, MACTEC exceeded the contract allocation well before the end of the contract term. This was due to concerns over conformance with contract requirements relating to ZPMC, resulting in additional QA measures implemented by MACTEC. On November 16, 2007, the first amendment for an additional \$12 million was approved by Caltrans. On April 21, 2008, there was a request for an additional \$12 million to extend the current contract while a Non-Competitive Bid (NCB) procurement was assessed. There would eventually be a total of five amendments to the MACTEC contract #59A0429, totaling \$68.2 million, and extending the term to April 30, 2010.

#### **Caltrans QA Contracting Process**

The QA contract was handled through the Architectural and Engineering (A&E) contracting process. A&E contracts are created and handled internally through Caltrans Department of Procurement and Contracts (DPAC). Caltrans is exempt from the normal process of awarding a contract to the lowest bidder on A&E contracts, because of the type of work and the potential ramifications if standards are not maintained. Rather, Caltrans is required to award A&E contracts to the most qualified contractor.

The contract procurement is broken up into four phases: Planning, Procurement, Performance, and Post-Performance. DPAC initially receives a Service Contract Request, Statement of Work (SOW), from the District. DPAC then advertises a Request for Qualifications (RFQ) for plausible consultants. Interested consultants are given a predetermined deadline to submit a Statement of Qualifications (SOQ) for the project. Qualified consultants are then invited to conduct a presentation and oral interview. Once the interviews are complete, the highest ranking firm is notified. Once the notification has taken place, contract negotiations begin. The negotiations involve the acceptance of billing and all financial issues regarding the contract. Once negotiations are successful, the contract is signed and work begins.

The Caltrans District 4 Contract Manager for CALTROP/Alta Vista contract (#04-A3144), explained the interview panel selection and process. The panel usually consists of between five to seven people, depending upon the size and complexity of the project. The panel is created and

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approved by DPAC before the contractors' SOQs are submitted. A general rule is that the panel cannot have a majority of people from the same chain of command. There is usually a subject matter expert, a district representative, and someone from outside the process who serves on the panel as a fresh set of eyes. Each panel member reviews the SOQs to determine if the contractor meets the RFQs, and gives an initial score. Initial evaluations are conducted independently by each panel member. Interviews are then conducted, during which the panel members and the unit seeking the contract ask questions. Each panel member then scores the contractors based on their presentation. The panel does not verify the certifications of the contractor, but relies on the SOQs as factual. The contractors' final scores are based on a combination of their presentation and the question and answer portion of the panel.

### **Decision to Re-compete the Contract**

In July 2008, the request for a new contract for QA services for the toll bridge program was initiated by Caltrans District 4. The advertisement was posted and three engineering firms responded with their SOQs. The timing of the rebid caused speculation as to the true motivation for a new contract. Some witnesses expressed concern over potentially changing consultants when MACTEC had the experience on the project and was embedded in the production process in China. Other witnesses held the opinion that repeated amendments were unfair and contracts should be rebid at the end of the term, or when funding was depleted. At the time the decision was made to rebid, there was also mounting tension between the MACTEC Project Manager and Caltrans managers regarding how to handle weld issues. The Construction Manager and the Project Manager related MACTEC inspectors were not always available during the hours of ZPMC production. These witnesses stated the QA contractor should have been housed on Changxing Island. The Senior Principle Engineer of MACTEC related there were safety concerns, specifically the lack of any medical facilities and the poor housing offered on the island, and they were unwilling to have their personnel housed on Changxing Island.

The process to obtain an NCB and leave MACTEC in place was assessed, but was not approved. There were conflicting statements regarding why the NCB was not approved. The former Caltrans Director related that the Caltrans Chief Financial Officer denied the request. However, the Caltrans Program Manager related the request was denied by the Caltrans Consultant Services Chief. As a result, a competitive bid process for a new A&E contract was initiated.

Several witnesses were asked about the NCB procurement to keep MACTEC on the project. The Deputy Director of BATA related the idea of a sole source contract to retain MACTEC was discussed at a TBPOC meeting. Their opinion was re-competing a contract was usually the right approach, as there is an obligation to the public for fiduciary responsibility. The Deputy Director of BATA recalled that DPAC played a significant role in that debate and was strongly in favor of

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having competitors compete for a new contract. The Senior Engineer for Caltrans Office of Structural Materials related the MACTEC contract was out of money but not time, and it was not unusual for a contract like that to go back out for rebid. The Caltrans Contract Manager for contract #04-A3144, related sole source bids are difficult to justify, and rebidding supports the fair competitive process.

The Caltrans METS Division Chief stated MACTEC was going through the allotted money in their contract due to increased responsibilities in China. Because of that, the decision to try and keep MACTEC on through an NCB process or going out for a new contract was discussed. The METS Division Chief said a paper was authored about the pros and cons of an NCB. That paper was used as the basis for a Significant Issue Report (SIR) that the Program Manager was going to submit to the California Business, Transportation and Housing (BTH) Agency (now known as the California State Transportation Agency [CalSTA]). The METS Division Chief does not believe the SIR was ever forwarded to BTH. The Program Manager related they were trying to make sure they had the ability to keep a non-competitive bid in play. It was their Chief Financial Officer who stepped in to stop it.

### **Contract Panel Selects CALTROP**

An SOW and RFQ were developed, and the contract for QA on the SFOBB was advertised. The members of the selection panel were chosen from both inside and outside of Caltrans. The seven member panel consisted of: one representative from the Bay Area Toll Authority (BATA); one from the California Transportation Commission; and five from Caltrans. The interview process started just after the panel members were selected. Each member of the panel was provided the consultants' SOQs. They were given a week to review each SOQ and assign an initial score using established criteria from DPAC. DPAC received the score sheets and established a "short list" of candidate firms that moved on and were given the opportunity to give an oral interview/presentation to finalize the bid.

There was disagreement among witnesses regarding the vetting of certifications submitted by competing firms. All of the panel members, with the exception of the METS Division Chief, were of the opinion DPAC had the responsibility of vetting the certifications required by the RFQ. The Caltrans DPAC Contract Coordinator was adamant it was their responsibility and not the job of the panel members to verify the SOQ from each company met the RFQ as advertised by DPAC, including certifications for required personnel. They further related it was the responsibility of the panel members to evaluate the qualifications of each firm, including plans for project delivery and experience. The DPAC Contract Coordinator was upset the METS Division Chief conducted an independent review of certifications.

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According to the DPAC Contract Coordinator, on August 28, 2008, the day of the panel interview, specific direction was given on the interview scoring procedures and required panel members to sign a confidentiality agreement. The three consultant firms (MACTEC, CALTROP, and LAN) provided presentations on how they planned to complete the work and were asked to respond to specific technical questions as it pertained to the scope of work in China. To ensure uniformity, all questions were the same for each consultant firm. The final score and ranking of candidate firms was based on the oral presentation. The majority of panel members interviewed said CALTROP/Alta Vista gave the strongest presentation.

There have been accusations, primarily from the Senior Principle Engineer of MACTEC, alleging the panel was “stacked” against MACTEC and the vote of the panel was predetermined. Investigators asked several witnesses about this allegation. The Caltrans District 4 Contract Manager was a voting panel member for contract #04-A3144. They stated the panel members did not discuss the presentations or their scores with one another, and there was absolutely no collusion to get panel members to vote for or against a specific contractor. In the opinion of the Caltrans District 4 Contract Manager and others, based on the presentations, there was no doubt CALTROP/Alta Vista was qualified to handle the QA contract. The Deputy Program Manager related this panel was unique because panel members were not allowed to discuss anything prior to the three companies giving their presentations. The Deputy Program Manager said they had been a part of panels previously where members were allowed to discuss opinions with other panel members prior to casting a vote. In their opinion, this panel was different. They felt the panel members not being able to talk to each other was an attempt to keep any one panel member from swaying the vote or persuading other members to vote a certain way.

Ultimately the panel members voted four to three in favor of CALTROP/Alta Vista. The representative from the California Transportation Commission, the METS Division Chief, and the Deputy Program Manager voted for MACTEC, while the representative from BATA, the Caltrans Construction Manager, the Caltrans District 4 Contract Manager, and the Caltrans Project Manager voted for CALTROP/Alta Vista.

### **CALTROP Qualifications**

During the selection process, one panel member, the METS Division Chief, was concerned about CALTROP/Alta Vista qualifications and conducted research to evaluate whether the proposed personnel had the specific certifications listed in the SOQ. This led the METS Division Chief to believe CALTROP/Alta Vista had misrepresented their qualifications. The information that was discovered created doubt about certifications, which called into question whether the company was qualified for the project. This uncertainty resulted in confusion about how to proceed.

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The investigation revealed the METS Division Chief checked certifications using the national database of the American Society for Nondestructive Testing (ASNT) and could not locate specific certifications required for some of the personnel listed. According to ASNT standards and the advertised RFQ, consulting firms are allowed to certify their own inspectors if they have the proper personnel to do so. Under these circumstances, the certifications would not show up in the national ASNT database.

The METS Division Chief was also concerned the organizational chart submitted by CALTROP/Alta Vista did not contain the requisite qualified personnel. The METS Division Chief solicited Mayes Testing Engineers, Inc., to conduct independent testing of inspector qualifications. Although this was not required by the contract, CALTROP/Alta Vista agreed to submit to the testing process. During the testing process, CALTROP/Alta Vista recruited additional personnel and Mayes Testing Engineers, Inc. related by the end of the process CALTROP/Alta Vista had a qualified team. Once qualifications became an issue, it prompted the involvement of Caltrans legal counsel and eventually the direction of the former Caltrans Director. Ultimately, DPAC and Caltrans management determined CALTROP/Alta Vista met the requirements listed in the RFQ.

The Senior Engineer for Caltrans Office of Structural Materials was involved in the testing conducted by Mayes Testing Engineers, Inc. The Senior Engineer said the majority of people passed the Mayes test. Although a few people did not pass the test, the Senior Engineer said it was not a big issue. A few MACTEC people might not have passed the test either. The Senior Engineer explained that it was not a disqualifier that CALTROP/Alta Vista did not have qualified people at the time they submitted their SOQ.

The former Caltrans Chief of DPAC related the METS Division Chief acted inappropriately during the 2008 panel for award of the QA/QC contract. It was not normal for panel members to research clients, and it was unusual for the METS Division Chief to question the certifications of CALTROP/Alta Vista.

The Level III Non Destructive Testing (NDT III) Engineer from MACTEC was approached by an employee of CALTROP during the open bid period. The CALTROP employee tried to persuade them to change employers, stating that CALTROP had a strong team including the President and CEO, and were well positioned to win the contract. The MACTEC NDT III declined the employment offer and stayed with MACTEC. The NDT III felt that MACTEC was the most qualified company for the job and when they did not receive the contract, he questioned the fairness of the process. The NDT III related after MACTEC failed to win the contract, they did not intend to seek employment opportunities with other companies. The NDT III said once the contract was signed, they were again approached by CALTROP and AltaVista Solutions. The

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NDT III was offered a more lucrative contract offer with CALTROP and was uncertain of his future with MACTEC. In December of 2009, the NDT III accepted employment with CALTROP. Regarding the issue of proper qualifications, the NDT III stated CALTROP had level III personnel that were qualified and properly certified. One employee of CALTROP was a level III in the United States, and another was properly certified and qualified to perform the level III work in China. The NDT III said the one employee was qualified and on staff with CALTROP as a level III inspector at the time of the contract award.

The METS Division Chief, the Senior Principle Engineer of MACTEC, and the Regional Manager of MACTEC related they believed CALTROP/Alta Vista should have been disqualified from competing for the contract, based on certification concerns. However, there was no consensus among those interviewed regarding the personnel requirements as advertised in the RFQ for this contract. The Caltrans District 4 Contract Manager related contractors are not required to have personnel with the necessary certifications until the work of the contract actually starts and the owner of a company does not necessarily need to be qualified to complete the work but does need qualified people doing the work.

The Deputy Program Manager said that, if the personnel were mistakenly listed with certifications, CALTROP/Alta Vista should be allowed to correct the mistake before the contract was invalidated.

Several employees of MACTEC were interviewed to determine if any improprieties regarding the rebid process occurred. These witnesses all related Caltrans appeared to be very pleased with MACTEC performance on the project until immediately prior to the announcement of the rebid. They questioned the timing of rapid degradation of the relationship between MACTEC and the SFOBB project management team associated with a memorandum authored by the Senior Principle Engineer of MACTEC. In the memorandum, the Senior Principle Engineer of MACTEC alleged insufficient safeguards were in place to assure QA, and called into question the measures taken to assure the safety of the bridge. The memorandum was not well received by the Caltrans Construction Manager and was viewed by other members of the project management team as confrontational and adverse to the direction they had implemented for the project.

These same witnesses called into question the certifications of the team assembled by CALTROP/Alta Vista, and their qualification to compete for the contract given the requirements listed in the RFQ. In addition, there were allegations of a relationship between Caltrans management and employees of CALTROP/Alta Vista that may have led to inappropriate influence on the contract award. Additionally, MACTEC personnel raised questions regarding the cancellation of two unrelated contracts where MACTEC was the top ranked firm. These

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contracts were not related to the SFOBB, but the timing of audits conducted on MACTEC seemed curious to some individuals involved in the SFOBB project.

As previously discussed, the investigation revealed that DPAC and Caltrans management determined CALTROP/Alta Vista met the requirements listed in the RFQ after conducting independent testing of inspector qualifications. Additionally, the investigation revealed there was insufficient evidence to support a claim of collusion, or an effort to select other than the most qualified firm, for the continuing QA in China.

The investigation confirmed that Caltrans initiated an audit of MACTEC billing practices in late 2007. Although the timing appears to be suspicious, the motivation for completing the audit was based on shortcomings on Caltrans part. Caltrans had recently undergone an audit by the Federal Highway Administration related to federal funding on transportation projects, and Caltrans was deficient in conducting audits for contracts under their control. As a result, the Caltrans Director issued a directive that Caltrans would comply with all required federal regulations as soon as practicable. During the audit conducted at MACTEC headquarters in Alpharetta, Georgia, MACTEC officials did not or could not comply with Caltrans auditor request; therefore, these contracts were not taken forward into the negotiation stage.

There was no evidence to support the allegation that cancellation of the contracts was in response to anything other than MACTEC failing to comply with audit requests. Caltrans Audits and Investigations provided information indicating MACTEC billing practices in general were questionable, resulting in the audits. When MACTEC did not comply with the auditors' request, they recommended to DPAC that contracts under negotiation with MACTEC be cancelled.

Qualifications for the QA contract were based partly on project delivery. Panel members agreed the CALTROP/Alta Vista plan to be housed on Changxing Island was good for the project. Conversely, MACTEC was reluctant to stay on the island. Although many witnesses believed MACTEC did not win the contract again because of the MACTEC Senior Principle Engineer's insistence on stricter QA, there was no substantial evidence to support this as a factor in the decision to rebid or the selection of CALTROP/Alta Vista.

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### **FINDINGS**

1. Was a Caltrans Supervising Bridge Engineer influenced or coerced from reporting concerns and removed from the Bay Bridge project in violation of the WPA?

The California Whistleblower Protection Act (WPA), is defined in Government Code § 8547, et seq. To establish a violation of the WPA, the following circumstances must be present:

- Violation of state or federal law.
- Noncompliance with an executive order, a Rule of Court, the State Administrative Manual, or the State Contracting Manual.
- Misuse or waste of state resources.
- Gross misconduct, incompetence, or inefficiency.
- Intimidation, threats, or coercion by state employees that could interfere with the right to disclose improper governmental activities.

The totality of the evidence does not support the elements of a violation of the WPA. Initial evidence indicated the Caltrans Supervising Bridge Engineer was removed for their outspoken and unrelenting reporting of inconsistencies and issues with the project and quality control. However, several witnesses reported this employee was disruptive and could not effectively communicate with the fabricator. The employee was vocal about concerns and maintained this position even after management had decided on a way forward. This created a work environment which was causing delay in the project schedule (the only person assigned to the SFOBB that was involuntarily reassigned from the project was the Caltrans Supervising Bridge Engineer). It appears this employee was reassigned primarily because they were vocal and disruptive and their approach was not consistent with maintaining an efficient or effective process. Caltrans managers stated this employee had a history of not getting along with the fabricator. However, a review of the employee's personnel file showed no indication of any current or previous performance issues. This transfer did not constitute a violation of the WPA due to the fact it involved an intra-District transfer; Caltrans has no policy prohibiting such a transfer, and there was no loss of financial compensation to the employee. Although no violation of the WPA could be established, this incident was mismanaged and compounded by a lack of documentation to memorialize the employee's performance and behavior.. Additionally, the failure to communicate the purpose of this reassignment resulted in rumors that speaking out would be cause for removal from the project.

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2. Were the private quality assurance contractor project manager and contract firm, MACTEC, pressured or coerced from reporting concerns and replaced on the Bay Bridge project in violation of the WPA?

The project manager and their firm, MACTEC, Inc., were not awarded the contract to stay in China and finish the quality assurance service they had been providing since 2005. The project manager was a very outspoken member in China, and had criticized Caltrans management for what was perceived as a lack of concern for quality in the fabrication process. This criticism reached a critical point when a memorandum surfaced, purportedly prepared by the project manager documenting the concerns previously conveyed. The timing of the decision to rebid the contract was called into question as it was made public shortly after this memorandum surfaced. Additionally, concerns were expressed regarding the relationships between the Caltrans Construction Manager and employees of Alta Vista Solutions. Witnesses expressed a belief that these apparent personal ties coupled with the recent formation or expansion of Alta Vista Solutions seemed suspicious.

The CEO of Alta Vista Solutions worked closely with and was a friend of this Caltrans employee. This Caltrans employee was one of seven panel members assigned to select the most qualified company for the rebid of the QA contract in 2008. This contract was eventually awarded to CALTROP/Alta Vista. Following retirement from Caltrans in 2011, the former Caltrans Construction Manager was hired and assigned as Executive Vice President of Alta Vista Solutions. The former Caltrans employee requested the Fair Political Practices Commission (FPPC) review the circumstances surrounding their employment with Alta Vista Solutions to determine whether it constituted a conflict of interest. The FPPC replied to this employee that, based on information provided, there were no apparent conflicts. This former Caltrans employee and the employees of Alta Vista Solutions all denied any inappropriate influence in the contract award process, and the evidence does not establish their relationships had any direct impact on the decision to rebid the QA contract or the selection of CALTROP/Alta Vista by the contract panel.

California State transportation projects because of their importance, prestige, and size have appeal to many in the construction industry throughout the nation. Contractors often see California projects as opportunities to build their businesses, experience, and portfolios. Building relationships and understanding how Caltrans functions allows contractors to better deliver the needs of a given project. Although these relationships can be mutually beneficial, they can also have the detrimental effect of potentially creating the appearance or perception of preferential treatment toward a particular contractor or company. This issue was examined carefully during the course of the investigation.

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As the competition for the contract moved forward, questions were raised regarding the qualification and recent expansion of Alta Vista Solutions through the recruitment of MACTEC employees. Although extraordinary measures were allowed which enabled CALTROP/Alta Vista to recruit personnel until questions regarding qualifications were satisfied; the investigation revealed this was the result of a lack of clearly defined policy delineating which certified personnel were mandatory at the time of the bid and which positions could be filled as the need was identified. These circumstances were compounded by a lack of communication between DPAC and panel members. Ultimately, despite this unorthodox and unprecedented approach, DPAC determined CALTROP/Alta Vista met the minimum requirements listed in the less than specific Request for Qualification (RFQ). The investigation revealed there was insufficient evidence to support a claim of collusion, or an effort to select other than the most qualified firm, for the continuing QA in China.

3. Was a Caltrans Engineering Geologist influenced or coerced from reporting concerns in violation of the WPA?

A Caltrans Engineering Geologist was assigned to the geotechnical branch of METS. This employee had some involvement with test data on the tower foundation piles and was concerned over a co-worker who had been accused of falsifying data on a different project. This employee was frustrated over the lack of disciplinary action taken against the co-worker and voluntarily left the geotechnical branch to avoid having to work with them. There is no information to substantiate this employee left the project due to any pressure or influence. The allegations regarding this employee related to concrete issues raised years earlier prior to the ZPMC fabrication issues. The employee was included because their name came up at the Senate Hearing. While retaliation was investigated and not substantiated, this is another example of Caltrans management not effectively communicating a response to a subordinate employee when they raised issues. The employee had no firsthand knowledge or involvement in SFOBB construction in China or circumstances surrounding the changes in QA contractors. While Caltrans was slow to respond to these issues, ultimately appropriate action was taken.

### **Treatment of Employee Concerns**

During the course of the investigation, multiple witnesses stated they reported concerns about testing and quality of various components of the eastern span to their superiors at Caltrans, but these concerns were rejected or ignored. The witnesses further reported they were dissuaded and/or prevented from expressing concerns in writing. However, a majority of middle and upper management witnesses provided an alternate view and explained that each decision was intended to ensure quality while staying on schedule. While management personnel indicated that those

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concerns brought forward were considered, and a course of action selected, they failed to communicate this information to subordinate employees, resulting in a perception that management intended to suppress or ignore concerns.

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### **ADDITIONAL ISSUES AND RECOMMENDATIONS**

The objective of this investigation was to determine if Caltrans violated the WPA and if they complied with law, policy and procedures in the awarding of the QA contract in 2009. Through this investigation, it became evident there were larger systemic issues involving SFOBB construction in China and the A&E contracting process. The investigation included a review of applicable statutes, existing policies and procedures, as well as examining previous contracts and audits to determine consistency.

During the course of this investigation the following issues were identified, all of which contributed to negative perceptions, both internally and externally, regarding the conduct of the SFOBB project in China:

#### **COMMUNICATION:**

##### **Poor organizational communication fueled or precipitated many of the issues experienced on this project.**

There was considerable evidence that information was not effectively conveyed throughout the organization as issues arose. The lack of defined goals and objectives left many of those who were interviewed unsure of management expectations. Additionally, when problems were addressed, the solution and associated reasoning supporting the resolution were not conveyed to those responsible for implementation. This lack of a unified purpose resulted in frustration and confusion through all levels of the project organization. These issues were exacerbated by the Program Manager, who avoided the use of the electronic mail system or other available forms of mass communication to convey perspective on solutions to problems and overall project progress.

Several witnesses indicated communication was lacking on the SFOBB. Many indicated there was an "inner circle", and if you were not included, there was not a good flow of information or communication. This is supported by witness testimony at the Senate hearing and interviews in which personnel assigned to the SFOBB indicated their concerns were ignored, or they had no way to express concerns. Witnesses involved at the upper management level, including the Project Management Team (PMT), stated they felt communication was very good on the project. Most witnesses below the PMT level did not share this view. Due to nontraditional practices Caltrans utilized in this project, communication was critical.

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While “Team China” assisted in allowing decisions to be handled at the ZPMC facility, it may have led to other communication issues. For instance, the Caltrans Project Manager related they were not aware of most of the questions regarding the U-rib and tack weld problems. The SAS Structures Representative believes the purpose behind keeping documents in draft form was a means of preventing their discovery as the project moved forward.

### **Recommendation**

A system should be established to ensure effective and timely communication (electronic mail, video or conference calling, informational newsletters, etc.) is used whenever possible to convey project progress, goals, objectives, and solutions to problems. This will eliminate speculation, increase confidence in the decision making process, and provide for a common understanding of project setbacks and achievements.

### **DOCUMENTATION:**

**The lack of a formal documentation process created confusion in a wide variety of areas and failed to provide clear direction or memorialize critical information on an already complicated project.**

The investigation revealed that Caltrans lacked adequate documentation pertaining to personnel performance, contractor/subcontractor performance, the selection of the QA firm, and contract selection and procedures. Despite the fact that guidelines have been established by the California Department of Human Resources, Caltrans has no policy requiring annual performance evaluations. The failure to properly document performance creates uncertainty and a lack of foundation to substantiate any personnel action. Although Caltrans managers related the Caltrans Supervising Bridge Engineer had a history of difficulties in dealing with the fabricator, the lack of documentation made this difficult to establish.

Witnesses indicated policy and procedures were viewed as a “guideline” rather than official requirement to be followed. This lack of documentation allowed for personal interpretation rather than a clear path to achieve a stated goal. A tracking system was not established at the forefront of the project to allow all members of management access to the information from production occurring in China. This was rectified during the project with the implementation of a database program (CCO77). The solution was implemented only after problems with document retrieval and information sharing were encountered. CCO77 set up a database program, Project Management Integral Vision (PMIV), for the project records associated with the SAS.

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This lack of documentation resulted in doubt about the project meeting the established goals. Additionally, the failure to memorialize decisions, discussions, and approved changes in process and structure resulted in a circumstance where recurring issues had to be revisited or data which might have resolved future issues was lost.

Supporting documentation was often produced well after a discovered problem and implemented solution. A prime example of this is the Project Team Response to QA/QC Expert Panel Recommendations. Initial weld problems were identified at the beginning of panel production (late 2007) and a solution implemented well before the completion of the report (March 2011, with an update November 2011) that provided a clear discussion of the problem and solution.

### **Recommendation**

Emphasis should be placed on the importance of adherence to established policy to provide a clear understanding of requirement and allow the organization a foundation to reference the acceptability of actions when issues arise. A system should be established to ensure that documentation is used throughout the project to provide clear and concise direction. This will eliminate doubt and personal interpretation of the path to established goals and milestones along the project. Additionally, clearly defined policy needs to be developed and adhered to addressing transfer under voluntary, administrative, or punitive circumstances.

### **ROLES AND RESPONSIBILITIES:**

**There was a lack of clearly defined roles and responsibilities at every level which resulted in frustration, confusion, and a lack of individual purpose.**

Due to the complexity, geographic distance, and unique design involved, Caltrans was forced to implement an organizational structure that had not previously been used. This, from the very initiation of activities, created a feeling of uncertainty on the part of all personnel involved and fueled frustration when those accustomed to more substantial responsibility found themselves in less significant roles. In the absence of clearly defined individual job descriptions, SFOBB project personnel attempted to apply traditional roles and responsibilities to their new assignments and became frustrated when these duties did not conform to the current paradigm. This led some on the project, who were reassigned different duties during the project, to feel marginalized.

This issue became apparent at the highest levels once the TBPOC structure was established. Project managers found themselves reporting to more than one oversight body, which diluted the management decision making process and sheltered individuals from direct accountability when

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issues were not dealt with properly. At the operational level, this was especially true when METS was removed from the reporting process and QA personnel found themselves reporting directly to Construction on fabrication quality issues.

### **Recommendation**

The plan associated with each project operation should involve a clearly delineated organizational chart that outlines reporting structures and clearly describes each individual and unit duties and responsibilities. Furthermore, those tasked with project management responsibilities should be accountable to one individual or body providing for strict accountability and communication.

### **TRANSPARENCY:**

**A lack of transparency and insufficient documentation fueled a perception that actions were being taken specifically to prevent public disclosure and subvert the intent of the California Public Records Act (PRA).**

The investigation sought to determine if the Caltrans Toll Bridge Program Manager discouraged employees from documenting their concerns. While many witnesses stated there was an impression or sentiment that documenting concerns was discouraged, none of the witnesses interviewed could corroborate that a directive was ever issued prohibiting it. Witnesses stated the Program Manager preferred to communicate by telephone or in person. As previously discussed, the lack of documentation on this project has been a recurring problem. The Program Manager indicated they only discouraged the memorialization of inaccurate information for fear it might become detrimental to the progress of the project. The Program Manager preferred a face-to-face or direct approach to addressing issues as they arose. Despite the Program Manager's stated intentions, the resulting practice was perceived as a lack of transparency, and led those both inside and outside the project to distrust leadership and doubt the motivation for the established course of action.

Additionally, the Toll Bridge Program Oversight Committee (TBPOC) conducted their meetings in closed session, due to an exemption from the "Bagley-Keane Act." Although meeting minutes would eventually be published and meetings conducted in open session, the initial lack of public access to TBPOC actions caused concern about this process.

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### **Recommendation**

A system should be established to ensure a more intensified focus on documentation and public decision making. Transparency and accountability are pivotal to public and employee trust. In its newly-adopted departmental Vision Statement, Caltrans describes their organization as "...performance-driven, transparent, and accountable..." While no direct evidence of intent to subvert the PRA could be established, the actions taken or omitted on this project have provided a foundation to fuel perceptions to the contrary.

### **CONTRACT:**

**Language used in the contract was not specific enough to outline the needs and unique requirements of this project.**

Caltrans did not clearly define the process for verification of certifications required by the RFQ in the QA contract advertisement. DPAC personnel interviewed, indicated that standard contract language was used in the advertisement of this contract and was not specific enough for the needs of this project. The contract did not clearly define the standards to use for personnel certification. In addition, specific personnel that were required on the project and when a candidate company would be required to show employment of required personnel was not established. The process implemented by the Mayes Report for independent testing of personnel assigned to complete work would be beneficial, but was not required as part of the selection process in the advertisement of the contract. Caltrans was unprepared to adapt to a radically different fabrication environment.

### **Recommendation**

Caltrans should develop and adhere to policy and procedures to strengthen the integrity of the A&E contracting process. At the beginning of each contract, specific language should detail who is responsible for verifying certifications and when key personnel from the prospective firm need to be in place.

### **INDIVIDUALS WHO FELT MARGINALIZED OR REASSIGNED:**

During the documentation of the CHP investigation, a report commissioned by the Senate Transportation and Housing Committee alleged several Caltrans employees and/or consultants on the SFOBB were either marginalized or retaliated against for reporting QA concerns. Although one individual was reassigned and the roles of several others changed during the SFOBB project, the evidence does not support this was done for retaliatory reasons.

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