

**The California State University  
Long Beach, California  
Central Plant  
LB-438**

**EXECUTIVE SUMMARY**

The goal of our review of the California State University, Long Beach - Central Plant Project was to evaluate the following areas, state particular findings and make recommendations, as appropriate:

**CONTRACTOR'S JOB COST ACCOUNTING SYSTEM  
CHANGE ORDERS  
CONTRACTOR'S PAY REQUESTS  
CONTRACTOR COMPLIANCE  
LIQUIDATED DAMAGES  
CLOSE-OUT DOCUMENTS  
FINAL ACCOUNTING**

**INTRODUCTION**

The primary purpose of our review is to provide the Trustees of California State University with assurance that appropriate procedures and controls are applied to the construction process as identified in the contract documents issued for the Central Plant Project at the California State University at Long Beach campus. In addition, we are providing recommendations that will, upon implementation, provide improved controls and contractor reporting in future construction projects.

We conducted a sampling audit of the CSULB Central Plant construction documents on August 11, 1997, through August 15, 1997, and additional sampling on October 13 and 14, 1997. Our audit included thorough interviews with Physical Planning and Development (PP&D) personnel, located at The California State University Office of the Chancellor's West Ed offices in Los Alamitos, discussions with campus management, a physical tour of the CSULB Central Plant, file reviews at PP&D (Owner's) and at Amelco Industries (Contractor's) offices and sample testing of documents for cost and process compliance

This review is based on the information contained in the project files at both Contractor's and Owner's offices. The findings and recommendations included in this Executive Summary are supported with additional detail that is available upon request.

## CONTRACTOR'S JOB COST ACCOUNTING SYSTEM

### *Findings:*

The Contractor, Amelco Industries, provided three (3) cost reports reflecting total job costs for this project varying in levels of detail. Additionally, Amelco provided a Subcontractor Status Report that proved critical in our efforts to perform the construction review. At the Contractor's office, we were given access to all job cost files, including subcontracts and change orders thereto. **We found the methodology and reporting documents used by the Contractor were adequate.** However, Owner's current contract specifications do not require several necessary reports that should be furnished by contractors.

### *Recommendations:*

1. The contract specifications issued by Physical Planning and Development (PP&D) should include provisions requiring specific project management reports to insure contractor's have appropriate project cost control tools in place. Following are three recommended reports that should be specified in the contract documents to be made available to Owner upon request:
  - **Detailed cost ledger** reflecting each payee's name, payees' invoice number, invoice date and amount of the charge posted to the project. This report should identify costs as subcontract amounts, labor charges, material costs and other costs the contractor employs for cost reporting.
  - A **summary report** reflecting total costs charged against the project. This report should reflect accumulated totals by type of work performed. The summary report should also reconcile to the detailed cost ledger described in the preceding paragraph.
  - A **subcontract report** identifying each subcontractor's original contract amount and each change order issued against the subcontract.

We recommend these reports become part of the project close-out documentation.

### *Management's Response:*

We agree that general contractors should make available reports detailing cost ledgers, total costs charged, and subcontractors' accounting status if requested. We also believe that the requirements for these reports should be added as a last sentence in the language of our contract general conditions, Article 4.01.c.(1) as follows:

"The Contractor's records shall also include the following reports, or similar reports acceptable to the Trustees of the California State University: a detailed cost ledger reflecting total charges against the Project which present an itemization by invoice and labor costs by cost code; a summary report identifying total Project costs by cost codes; and a subcontractor history report including each subcontract amount and change orders issued thereto. These reports shall be made available within the period identified in

Article 4.01.c.(3), upon request by the Trustees (or designee) of the California State University.”

The inclusion of this language is, of course, subject to General Counsel review and approval.

### **CHANGE ORDERS**

#### *Findings:*

Since the original agreement entered into by the Owner and Contractor was a stipulated sum, or lump sum amount, this review was limited to reconciling change orders issued by the Owner to the change orders issued to subcontractors by the Contractor. The Owner had methods to track requests for, causes of, associated costs, and final dispositions of change orders. On the Central Plant project, there were 371 Amelco Industries Change Estimates (AICE's) incorporated into 137 Change Orders totaling \$1,273,197. This added 5.2% in cost to the construction contract of \$24,450,000. **Although, the numbers of changes were above average for comparable projects, the dollar amounts were well within normal and expected values.**

The PP&D Final Contingency Status Report (FCSR) presented a description of each change estimate. This report included the Contractor's change estimate number, the Owner's change order number, and the final amount included in the change order.

We found that 137, of the 371 AICE's reflected on the FCSR, did not include a "Type of Change" code, nor did the report, dated September 3, 1997, include a final reconciliation of all changes issued to the Contractor. We sampled approximately 51 AICE's representing \$637,212 (50%) in change estimates.

PP&D furnished a Change Order Log listing each Change Order issued and approved by the Owner. This log totaled \$1,302,759. Actual Change Orders issued on the Central Plant project were \$1,273,197, **a difference of \$29,562.** The Change Order Log did not reflect a credit amount for Change Order No. 68 in the amount of (\$29,562), nor did it include a running total of the change order costs.

In our review of the AICE's sampled, we **found possible overpayments totaling \$67,507.11.** They are as follows:

- **AICE 86** is a request from Murray Company (a subcontractor to Amelco), for additional costs associated with the underground pipeline distribution. Murray's original claim was for \$486,226. Included in this amount was a 15% "home office processing" fee for \$63,423. PP&D, Amelco and Murray negotiated and reduced the "hard" costs to \$28,188, however, "home office processing" remained as claimed and a settlement of \$90,000 was agreed upon. If the negotiators had applied the 15% formula to the negotiated hard costs, Murray would have been entitled to \$4,212 vs. \$63,423. **This oversight appeared to result in an overpayment of \$61,920. If this is a negotiated lump sum settlement that is intended to be "all inclusive" it should be documented as such.**

Breakdown	As Submitted	Approved	Should Be	Overpayment
Murray Hard Costs	\$422,803	\$28,188	\$28,188	
Soft Costs (home off) 15%	<u>63,423</u>	<u>63,423</u>	<u>4,212</u>	
Subtotal Murray	\$486,226	\$91,611	\$32,400	
Rounded		<u>- 1,611</u>		
Amount to Murray		\$90,000	\$32,400	<b>\$57,600</b>
Amelco 7.5% Fee		<u>6,750</u>	<u>2,430</u>	<b>4,320</b>
Total Change Order		\$96,750	\$34,830	<b>\$61,920</b>

- **AICE 236R** included a recap sheet for work performed by Gemini (a subcontractor to Amelco) in the amount of \$8,864.24 less a deduction of \$2,000.00, or \$6,864.24, which was approved and paid by PP&D. A recap sheet for AICE 236 reflected \$7,500 less the deduction of \$2,000, or \$5,500, due to Gemini. Amelco paid the subcontractor \$5,500, rather than the \$6,864.24 approved for AICE 236R. Additionally, Amelco received a 15% mark-up. This represents an **overpayment of \$1,569.24**.
- **AICE 311** includes copies of two quotations from subcontractor Fontana Steel. One quote reflected a 15% mark-up for overhead & profit of \$1,806.86. The amount approved by PP&D included the 15% subcontractor fee. The amount Amelco paid Fontana Steel did not include the fee. However, Amelco received a 15% mark-up. This represents an **overpayment of \$2,077.86**.
- **AICE 317** includes a recap sheet for work performed by subcontractor Karcher Insulation for \$11,083.04, including a 15% subcontractor mark-up for \$1,445.61. This amount was approved and paid by PP&D. There is a revised recap sheet that includes adjustments for labor and material bringing the amount due to Karcher to \$9,396.03. Amelco paid the subcontractor the lower amount and did not pay the 15% mark-up. Again, Amelco received a 15% mark-up. This represents an **overpayment of \$1,940.01**.

**Despite the discrepancies listed above, we found the majority of changes had been thoroughly reviewed by both PP&D and the contractor.** There was significant evidence of deletion of change order mark-ups and excess overhead calculations not allowed by contract that resulted in cost savings to the Owner.

We also found our attempts to reconcile costs paid by the Owner to actual costs incurred by the Contractor to be more difficult than normally found in construction audits. Extensive negotiations on change orders certainly added to the confusing paperwork found in the Contractor's subcontract files and the PP&D change order files.

*Recommendations:*

2. We recommend that:

- a. Owner initiates an on-going review, during construction, of contractors' records to ensure costs incurred by the contractor for subcontractor change orders reconcile to actual costs expended by the University. This review should minimize overpayments to the Contractor.
- b. PP&D develop a standard for documenting change estimates submitted by the Contractor. Such documentation should require an itemized breakdown of costs including profit and overhead. Change estimates should be sorted and totaled by "Type of Change." Data reported in this manner would enable the Owner to easily follow and understand changes and their monetary impact. This information may also prove useful in future similar CSU projects in managing architects and contractors.
- c. PP&D develop documentation explaining action taken for "Type of Change" codes where another party may be responsible for the cost impact of the change (i.e., consulting architect/engineer).
- d. The Change Order Log should include a running total of changes issued to the construction contract. As reported above, this report was inaccurate and did not provide an adequate control of amounts requested on the Contractor's monthly billings.
- e. Owner arranges to have change orders audited by either uninvolved PP&D personnel or other qualified auditors on a routine basis, at least quarterly, during construction.

*Management's Response:*

- a. We disagree with this recommendation that the owner should initiate during construction an on-going review of the contractor's records. In view of the audit findings we fail to see the cost benefit to the system to engage in this practice.

We also disagree with the findings of the report that pertain to alleged overpayments. Our response to these allegations is as follows:

AICE 86: Change Order No. 027 – This was a negotiated lump sum settlement change order that was all inclusive. This was spelled out several times in this change order. As is common in the construction industry, once a lump sum amount is agreed to by all parties, previous elements of the negotiation leading to the lump sum settlement amount are no longer considered to be relevant to the settlement. **There was no overpayment.**

AICE 236R 311 and 317 – **There was no overpayment.** Back charges are a normal practice in the construction industry. In fact, when contacted on this matter, the

general contractor notified us that AICE 236R was reduced by \$2,000 due to a backcharge to the subcontractor; AICE 311 was a backcharge against the reinforcing subcontractor for clean-up and offloading truck loads of steel; and AICE 317 discounted payment due a subcontractor in lieu of obtaining services from the general contractor.

- b. We agree that our existing standards requiring the general contractor and subcontractor to submit detailed breakdowns for change estimates should be more rigidly enforced as a part of contract provisions. We will ensure that the project management team reinforces these requirements in future contracts.
- c. We concur with the need to monitor the type of changes that occur during construction. We consider however, the existing change proposal procedures in place for all CSU contracts to satisfy this requirement. The procedure identifies the "type of change," being considered, including those that may involve suspected architect/engineer errors and omissions.
- d. We agree that the change order log should identify a running total of changes issued. Our current practice is being improved with the implementation of the CPM electronic project tracking program that will more easily capture this information. We expect to have the program fully operational by the end of the 1998 calendar year.
- e. We disagree with this recommendation. Once again, in view of the audit findings we fail to see the cost benefit to the system to engage in this practice.

### **CONTRACTOR'S PAY REQUESTS**

#### *Findings:*

The consulting architect/engineer is required under the contract specifications (Paragraph 8.02 and 8.05) to review and approve each "Contractor's Pay Request." **We found the last seven (7) pay requests (numbers 31 through 36) had no such approval from the architect/engineer.** These seven (7) payments totaled \$1,655,040. All other Contractor's Pay Requests were appropriately approved.

#### *Recommendations:*

3. **The established approval process should be reinforced by PP&D, without exception.** The payment approval requirement is critical in validating payments made on construction projects. We strongly recommend that PP&D obtain consulting architect/engineer approval on all payments made to the Contractor. If there are reasonable exceptions to this policy, they should be defined by PP&D and incorporated into the contract.

*Management's Response:*

We agree with the recommendation that the established approval process for contractor pay requests should be strictly followed. At the same time, on occasion, valid exceptions may occur. In these instances we will incorporate them into the contract.

**CONTRACTOR COMPLIANCE**

*Findings:*

We sample tested the most significant statutory compliance requirements identified in the contract specifications. We found the following requirements tested to be in accordance with the requirement of the contract specifications:

- M/W/DVBE Documentation: Amelco Industries included 15.66% for Minority Business Enterprises, 4.92% from Women Business Enterprises and 45% from Disabled Veterans Business Enterprises as evidenced by CSU's Contract Administrator and MWDVBE Coordinator.
- Insurance Requirements: A Certificate of Insurance including required coverage was obtained for Amelco Industries. This certificate is standard in the industry and provides adequate evidence of coverage.
- Bonding: We examined Amelco's payment Bond No. B2445927 executed May 5, 1994, in the amount of \$24,450,000 and found it was in accordance with the specifications.
- Drug-Free Workplace Certification: The required form, STATE of CA Std. 21 (New 11-90), was on file and in accordance with CSU requirements.

*Recommendations:*

None

**LIQUIDATED DAMAGES**

*Findings:*

While contractual language for liquidated damages exists for this project, the Owner waived any rights of assessment of liquidated damages and granted the contractor a time extension to April 4, 1997, in Change Order 137. In return, the Contractor waived any additional claims for extended overhead. Change Order 137, referred to as the "global change," was aggressively negotiated to \$203,000 from \$393,065 as originally submitted by the Contractor. The language in Change Order 137 was written by CSU legal counsel and we accepted the settlement as properly reviewed and evaluated by PP&D. (See Exhibit A.)

*Recommendations:*

4. In the construction industry, liquidated damages have negative repercussions for both the Contractor and Owner. It is our opinion that both parties negotiated in good faith and reached agreement satisfactory to PP&D on this issue. In the majority of our construction audits we find negotiated settlements in matters of project delays, rather than strict application of liquidated damage clauses. In the future, we recommend that PP&D clearly document the amount of liquidated damages waived, and the reasons for the waiver, in any future settlements.

*Management's Response:*

We agree to reinforce in future settlement documentation, justification of the amount of any liquidated damages waived and the reasons for the waiver.

### **CLOSE-OUT DOCUMENTS**

*Findings:*

PP&D maintained a “**Stop Notice Log**” that identified all claimants and amounts claimed. **We found this log to be thoroughly and adequately maintained.** The amounts identified in the claimants’ Stop Notices had been deducted from the Contractor’s Payment Request No. 36, the last invoice paid at the time of our audit. For any claims outstanding from subcontractors and material suppliers, bonds were provided by the Contractor to protect the Owner from future liability.

We were unable to verify if close-out documents were missing. The Contractor maintains accurate as-built drawings had been provided to the Owner.

*Recommendations:*

5. We recommend PP&D formalize a process to ensure that contractors deliver to PP&D, or to a designated on-site CSU representative, all documents relating to the project. Facilities' Management personnel, on the campus, should receive and retain a full set of maintenance manuals and warranties on file. PP&D should create a **checklist** of close-out submittals and prepare an appropriate schedule of those submittals, based on the requirements included in the specifications, that verify all warranties and maintenance manuals are received. This would provide better control than relying on the Contractor to voluntarily provide these documents. It is important that campus personnel are provided information from manufacturers that describe appropriate maintenance so that warranties remain in effect.

*Management's Response:*

We agree with the recommendation. As a matter of fact, this close-out check list is in place and was incorporated into our procedures in 1996.

## FINAL ACCOUNTING

### *Findings:*

The Contractor's final cost (excluding his fee) at the time of our review was \$25,188,552. The final contract amount, including change orders, was \$25,723,197. The difference of \$534,645 represents the Contractor's profit for this project, or 2.12%. From calculations on the Contractor's final cost report, he was anticipating a profit of \$1,498,874, or 5.95%.

### *Recommendations:*

6. We recommend that periodic reviews of this nature be performed in order to give the Owner an "inside" look at how the contractor is financially performing on project work. We have found this analysis beneficial in evaluating the financial strengths of contractors as well as providing insight into profit margins that contractors realize on bid projects. This factor is a good indicator of the "tightness" of the Contractor's bid and can be used as a predictor of when contractors may begin to aggressively compensate for unrealized profits. In this case, and other lump sum bid situations, the only area a contractor can attempt to increase total project profits is through change orders.

### *Management's Response:*

We disagree with this recommendation. Because our work by law is low bid, the major driver on contractor profit margins is the general economic conditions of the state at any given point in time. We do not see the recommended periodic reviews producing any beneficial information over what we gain in the general understanding of economic conditions at time of bid.

### *Recommendations:*

7. As recommended in the above section entitled "Contractor's Job Cost Accounting System," we recommend that as part of the close-out process, PP&D include interim and final contractor's cost reports and a final calculation of the Contractor's profit. This information would benefit budgeting of similar projects in the future and provide historical information on the profit margins of approved contractors.

### *Management's Response:*

As with recommendation one, we believe that the documents should be provided as a part of the audit requirements.

## MISCELLANEOUS

8. We recommend the following areas warrant review to improve current procedures and should be reviewed on subsequent audits:

- a. **Bidding procedures** -- We reviewed the bidding instructions for the Central Plant project and found the process to be acceptable. The **Abstract of Bids**, a CSU worksheet identifying all bidders and bid amounts was unacceptable in specifying who actually received and recorded the bids. **We reviewed three (3) of these reports and found signatures and/or dates missing.** In order to maintain the integrity of the bidding process, this form must be carefully completed and reflect dates and time's bids are received.
  
- b. **General Conditions -- duplicate information** -- In a general overview of the Contract General Conditions, we found contract auditing was covered both in Article 2.12.g of the General Conditions and covered in greater detail in Article 4.01.c of the General Conditions. Redundancies cause confusion and can be misconstrued if written more than once. We found that the March 1997 edition of the Contract General Conditions issued by PP&D does not contain this duplication. We recommend continued review of the contract documents.
  
- c. **Technical Prequalification** - We reviewed a draft of a document referred to as a "technical prequalification" included in the PP&D files. This document related specifically to the Central Plant project at Long Beach. This document requested information regarding specific experience and references on Heating and Chilling Distribution Systems for Multi-Building Facilities. We feel this document could be extremely helpful in selecting a qualified contractor with the necessary experience for a project of this nature. **We were unable to obtain an executed copy of this document.** We recommend that the draft document be finalized and used to qualify contractors on all future projects requiring similar levels of technical expertise and experience.

*Response to Recommendations:*

- a. Bidding Procedures: We agree.
  
- b. General Conditions: We agree.
  
- c. Technical Prequalification: We agree that technical prequalification may be appropriate where the construction to be undertaken requires a specialized contractor to perform the work. We have used technical prequalification requirements on a specialized project basis. Each specialized project requires technical prequalification unique to the project. It is our intent to continue the practice of tailoring technical prequalifications on a project-by-project basis as appropriate.