

**The California State University
Los Angeles, California
Thermal Energy Storage (TES)
Upgrade Electrical Infrastructure
LA-442**

GOAL

The goal of KPMG, Peat Marwick, LLP's review of the California State University, Los Angeles (CSULA) - Thermal Energy Storage (TES)/Electrical Infrastructure Project was to evaluate the following areas:

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

INTRODUCTION

The purpose of this 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 Thermal Energy Storage (TES)/Electrical Infrastructure Project at California State University, Los Angeles campus.

KPMG conducted a sampling audit of the CSULA TES/Electrical construction documents during the period of February 16, 1997, through February 20, 1998. The audit included interviews with personnel from the Office of the Chancellor, Division of Physical Planning and Development (PP&D), in Los Alamitos, discussions with campus management, file reviews at PP&D's (Owner) and at Nielsen-Dillingham Builder's (Contractor) offices, and a sample testing of documents for cost and process compliance. Our review also included submittals prepared by the Ray Rahn & Sons and Jobe Corporation (Owner's Project Manager's for the project).

This review is based on the information contained in the project files at both Owner's (Owner shall mean both CSULA and PP&D) and Contractor's offices.

PROJECT DESCRIPTION

This multi-task project involved the construction of a central chilled water plant and thermal energy storage system and included an underground utility tunnel 10' (10 feet) in diameter; high voltage electrical distribution system; underground water, sewer, storm drain, and gas distribution systems; chilled water distribution system; campus energy management system; telecommunication system; and landscape and irrigation systems. Plans and specifications were prepared by Popov Engineers. The engineer's construction estimate was \$17,467,000.

Bids were originally scheduled to be accepted on May 14, 1996. An addendum was issued to postpone the bid date to May 23, 1996. There were four bidders, with Nielsen-Dillingham Builders being the low bidder at \$16,637,000 (the budget established for construction on the CSU Capital Outlay Estimate (Form PPD 2-7)). A contract was executed with Nielsen-Dillingham (Contractor) on June 5, 1996. Notice of Completion was filed on January 15, 1998.

CONTRACTOR'S JOB COST ACCOUNTING SYSTEM

Findings:

KPMG found the methodology and reporting utilized by the Contractor in conformance with industry standards and appropriate for the project. The Contractor fully cooperated with the audit team and provided all requested documentation during the review.

Recommendations:

None.

CHANGE ORDERS

Findings:

The original agreement entered into by the Owner and Contractor was based on a lump sum amount. KPMG's review included 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. At the time of the review, the TES/Electrical project had 88 approved Change Orders totaling \$2,200,340. The final pay request reflected an additional change order in the amount of \$44,000 bringing the total changes to \$2,244,340. This added 13.5% in cost to the construction contract of \$16,637,000. This is approximately 94% greater than the \$1,157,000 contingency established in the project construction budget. In August, 1997, PP&D determined the required amount needed to supplement the entire project budget to be \$720,000 after application of the construction contingency and surplus funds in non-construction areas. They prepared a Request for Augmentation and these funds were approved on September 30, 1997.

Neither Owner, Jobe nor Rahn & Sons (PM's) provided a report listing total change orders issued and approved. Without this information it was difficult to confirm the accuracy of the change order amounts billed on the Contractor's pay requests. The Contractor included a listing of approved change orders on their final billing. We verified that the Contractor's final pay request No.19 accurately included all approved change order amounts.

The second Project Manager (Rahn & Sons) provided a report that included a description of each change estimate. This report listed the Owner's CRB number, Change Proposal Number, Field Instruction Number, and the final amount included in each change order. Additionally, this report was sorted by the reason for each change but was not totaled by change type as of the February 2, 1998, document (the latest report on file at the time of the review). KPMG manually calculated the amounts by code from a fax copy. The Contractor's records listed \$2,244,340 in changes on their pay request No. 19, which was verified to be correct. The Rahn report totaled approximately \$1,868,074. While we were unable to reconcile the difference of \$376,266, we suspect that the Rahn report did not include several change orders.

The following is a recap of total changes according to the project based on the information available:

<u>Type Of Change</u>	<u>C.O. Totals</u>	<u>% of CO</u>	<u>% of Contract</u>
4.1 Error/Omission from the Contract Documents	\$ 985,894	43.9%	5.9%
4.2 Unforeseeable job site conditions	491,823	21.9%	3.0%
4.3 Regulatory agency, bldg. code, safety, health	0	0.0%	0.0%
4.4 Originated by the University	481,364	21.4%	2.9%
4.5 Unavailability of specified materials	- 1,222	0%	0.0%
4.6 Other	2,119	0%	0.0%
Uncoded on the Rahn Report	- 89,378	- 4.0%	- .5%
Number to Balance w/Rahn report	- 2,526	0%	0.0%
CO Amounts not Included on Rahn Report	<u>376,266</u>	<u>16.8%</u>	<u>2.2%</u>
Total Change Orders	\$2,244,340	100.0%	13.5%
Original Contract Amount	\$16,637,000		

Of the total changes, approximately 44%, or \$986,000, was attributed to code 4.10, "Errors/Omissions by Architect/Engineer." This amount represented 5.9% of the total construction contract. It is our experience the normal range for errors and omissions is 2% - 3%. On this project, change orders costs exceeded the norm by \$486,784.

KPMG sampled approximately 29 CRB's representing \$520,812 (23.2% of total change orders). In our review of the CRB's sampled, we found that 100% of subcontract proposals were traceable to actual subcontract change orders. The Contractor's records cross referenced the Owner's CRB and RFI's on each subcontract change order. We found the Contractor's records to be in excellent order.

Recommendations:

1. We recommend:
 - a. Documentation for recovery of change order costs due to Architect/Engineer Errors and Omissions should be implemented and written reasons provided for non-recovery items. Further, PP&D should investigate the change orders attributable to Architect/Engineer Errors and Omissions and, if warranted, implement a recovery strategy. This recommendation is currently under consideration by PP&D.
 - b. The PP&D change order tracking system should include capabilities to sort change orders by “type” of change. This recommendation is currently under consideration by PP&D.
 - c. A cumulative change order log or summary should be prepared by PM and reviewed by PP&D in order to confirm the amounts billed by the Contractor. This recommendation is presently under consideration by PP&D.

Management’s Response:

- 1a. We agree. PP&D in conjunction with General Counsel will work towards establishing a guideline policy on pursuing recovery of costs incurred due to excessive errors and omissions in the Construction Documents. Staff has started review with General Counsel. We expect to finalize by 9/11/98.
- 1b. We agree. The new Capital Project Management (CPM) System does identify under each cost item in the change order the Cost Request Bulletin, Field Instruction (if there is one), the Change Proposal, the type of change, and the agreed upon price.
- 1c. We agree. The new CPM project tracking system will perform that task. We do not agree that Construction Management staff in the field should be required to generate this additional data. CPM is fully functional on 8 projects, all of which started in the 97/98 fiscal year. It will be used for all future projects administered by PPD.

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.” KPMG found that at least the last three (3) pay requests (numbers 17 through 19) had no such approval from the architect/engineer.

Recommendations:

2. We recommend:

The established approval process should be reinforced by Owner, without exception. If there are reasonable exceptions to this policy, they should either be defined by Owner and incorporated into the contract documents or approved in writing as exceptions.

Management's Response:

2. We agree. 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, especially after the Notice of Completion has been filed. We will incorporate the potential exception to Architect certification into the contract accordingly. After review by General Counsel, the change to Contract General Conditions will be made via Supplementary General Conditions; this will occur by 8/12/98.

CONTRACTOR COMPLIANCE

Findings:

KPMG sampled the most significant statutory compliance requirements identified in the contract specifications. The following requirements were tested and found to be in accordance with the requirement of the contract specifications:

- **Minority, Women, and Disabled Veterans Business Enterprises (M/W/DVBE)**
Documentation: Contractor included 8.4% for Minority Business Enterprises, 2.61% from Women Business Enterprises and .0% for Disabled Veterans Business Enterprises as adequately evidenced by the CSU Contract Administrator and M/W/DVBE Coordinator. Although only partial goals were met for MBE and WBE, Contractor did document good faith efforts and was considered eligible for contract award according to Title 5 of the California Code of Regulations and Section 10115.2 of the Public Contract Code.
- **Insurance Requirements:** A Certificate of Insurance documenting required coverage was obtained from Contractor. At the time this report's preparation, this certificate is standard in the industry as acceptable proof of insurance.
- **Bonding:** KPMG examined Contractor's Payment and Performance bonds (executed June 11, 1996) in the amount of \$16,637,000, and found them to be in accordance with Owner's 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, there was no cause for the enforcement of these provisions.

Recommendations:

None

CLOSE-OUT DOCUMENTS

Findings:

PP&D maintains a "Stop Notice Log" that identifies all claimants and amounts claimed. The log was found to be adequately maintained. KPMG was informed that the consulting Architect/Engineer remains responsible for the compilation of the final set of "As-Built" Drawings.

Recommendations:

None

MISCELLANEOUS

The following observations may warrant consideration for further review by CSU:

- **15% Change Order Overhead & Profit Fee** - Per Article 6.01.c.(5) of the General Conditions of the CSU Construction Contract, "Where changed work is performed, the Contractor may add to the total cost estimate for such work no more than fifteen (15) percent for profit, overhead, ...". From our experience with similar projects in the construction industry, 5% - 10% is a more typical General Contractor's mark-up on changes. Change orders for the TES/Electrical project totaled \$2,244,340 which included approximately \$292,740 for the 15% mark-up. A 5% to 10% fee would have reduced costs by \$98,000 (10%) or \$195,000 (5%). A "sliding scale" change order overhead and profit fee is under consideration by PP&D.
- **Project Management Services** - A project management service agreement was entered into between Owner and Jobe Corporation on June 20, 1996. Project Management

services were to include two full-time personnel from June 24, 1996, through February 28, 1997, and a Sr. Project Manager on a part-time basis, for approximately 9 months, at a cost of \$153,544. This agreement additionally provided for reimbursable expenses up to \$30,000. The actual amount charged for reimbursables was \$16,141. This included the purchase of three computers, a laser printer and a digital camera for a total of \$11,263.

Jobe Corporation was to supply an on-site project manager at \$55/hr., an administrative assistant at \$27/hr., and a Sr. project manager at \$65/hr.

In August, 1996, an amendment was issued to delete project management and administrative services from the contract due to a departure of staff which resulted in a contract credit of \$92,724. Sr. project management services were retained. Subsequently, \$80,000 was added to the contract for additional project management through August 31, 1997, bringing the total contract to \$179,820. Following is a recap of the Jobe agreement and amounts expended:

<u>Service</u>	<u>Contract Amount</u>	<u>Amount Paid</u>
Sr. Project Management	\$153,544	\$146,650
Project Management	Incl. Above	Incl. Above
Administrative Assistant	Incl. Above	Incl. Above
Delete PM and AA	- 92,724	- 92,724
Additional PM Change 10/21/96	20,000	20,000
Additional PM Change 1/8/97	25,000	25,000
Additional PM thru 6/30/97	25,000	25,000
Additional PM thru 8/31/97	10,000	10,000
Supplies	<u>30,000</u>	<u>16,141</u>
Totals	\$179,820	\$156,961

In January, 1997, a second project management agreement was entered into between Owner and Rahn & Sons. This agreement was to provide project management services for two persons full-time from January 27, 1997, through December 31, 1997, at \$50 per hour. Subsequent amendments added various services such as secretarial services in the amount of \$6,000 (although no secretarial services were billed) and construction work in the amount of \$87,500. Provision of construction services by the Project Manager is an unusual practice and a conflict of interest. Rahn & Sons were in the position of inspecting their self-performed work.

The original agreement also provided an allowance of \$10,000 for office/computer supplies. The proposal attached to the agreement stated that Rahn & Sons was to be reimbursed for and keep various software, modems and computer back-up hardware/software. Additionally, the agreement specified that Rahn & Sons would purchase and be reimbursed for various RS Means construction references and monthly updates for trade work periodicals. On actual invoices from Rahn & Sons, reimbursables for supplies carried a 10% mark-up.

On final invoices for services Rahn provided a \$1,700 credit against \$3,100 for furniture purchases and a \$450 credit against a \$750 apartment deposit.

Subsequent amendments were issued to Rahn & Sons to cover additional project management time in the amount of approximately \$88,300 but did not extend the original contract period beyond the 12/31/97 completion date. These additional costs appeared to be for overtime services. The following is a recap of the Rahn & Sons agreement amounts approved and the amounts expended:

<u>Service</u>	<u>Amount Contracted</u>	<u>Amount Paid</u>
Project Management	\$178,300	\$146,650
Secretarial Services	6,000	0
Subcontract Construction	87,500	99,657
Added to proposal	2,200	
Travel	0	9,647
Furniture	0	1,423
Apartment/Utilities	5,000	9,925
Apartment Deposit	0	300
Trade Updates	0	956
Supplies	<u>10,500</u>	<u>10,478</u>
Sub-Total	\$289,500	\$279,036
Less Construction Work		- \$99,657
Total		\$179,379

After combining the two PM agreements, amendments (including living and travel expenses of Rahn & Sons) and reimbursables, the total project management services were \$336,340 (Jobe Corp. \$156,961 and Rahn \$179,379), or 1.8% of the total construction contract. The total costs for PM services provided is below industry standards (2% - 3%).

Recommendations:

3. We recommend:
 - a. A formalized process and procedure for project management selection should be adopted and adhered to. Exceptions should be approved in writing. It is our experience that “best practices” in both public and private construction projects of this size involve developing criteria to qualify PM service providers, preparing a list of PM’s who meet that criteria, establishing written work requirements and expectations for the project, and soliciting requests for quotation.
 - b. Owner develop standard written expense reimbursement criteria for project management consultants. Specifically, written documentation, with appropriate approvals, regarding the disposition of materials, equipment and supplies paid for by CSU.

- c. Owner obtain a legal opinion as to whether or not errors and omissions insurance is necessary for project management and/or construction management consultants. This requirement should be consistently applied.
- d. Owner ensure that service contractors provide only those services for which they were hired in order to avoid potential conflicts of interest (i.e. project management firms should manage the project and not provide construction services).

Management's Response:

- 3a. We agree. Presently PP&D has a procedure in place for selection of Project Management services. Our policy is to go through a project specific proposal and selection process.
 - 3b. We agree. Presently our Project Management Agreements have written expense reimbursement criteria. For several years we have had the requirement that all purchases require prior written authorization from the Construction Engineer. The allowance for reimbursables in these agreements is project specific.
 - 3c. We agree. PP&D has commenced review with General Counsel in establishing a guideline policy on pursuing recovery of costs incurred due to excessive errors and omissions in the Construction Documents. We expect to finalize by 9/11/98.
 - 3d. We agree. In this specific instance, however, there was no conflict of interest. The Construction Management company, at our direction and acting on our behalf, solicited three proposals for the work. This procedure was reviewed and approved by General Counsel as appropriate. Smith-Emery, a testing and inspection company under contract to California State University, performed the testing and inspection services and, therefore, there was no conflict of interest.
- **Final Accounting** - The Contractor's final cost (excluding his fee) at the time of our review was \$18,254,872. The contract amount at the time of our review, including change orders, was \$18,881,340. The difference of \$626,468 represents the Contractor's profit for this project, or 3.32%.