

**UNIVERSITY OF CALIFORNIA, IRVINE  
ADMINISTRATIVE AND BUSINESS SERVICES  
INTERNAL AUDIT SERVICES**

**CONSTRUCTION MANAGEMENT  
Report No. 2012-601**

**April 19, 2012**

Prepared by:  
Loran Lerma  
Senior Auditor

Reviewed by:  
Gregory Moore  
Audit Manager

Reviewed by:  
Bent Nielsen  
Director

April 19, 2012

**SHERYL VACCA**  
**VICE PRESIDENT/CHIEF COMPLIANCE AND AUDIT OFFICER**

**RE: CONSTRUCTION MANAGEMENT**  
**Report No. 2012-601**

Internal Audit Services has completed the review of Construction Management and the final report is attached.

Please let me know if you have any questions regarding this document.



Bent Nielsen  
Director  
UC Irvine Internal Audit Services

Attachment

C: Terry Belmont, Chief Executive Officer, UC Irvine Medical Center  
Rebekah Gladson, Associate Vice Chancellor and Campus Architect  
Alice Issai, Chief Operating Officer, UC Irvine Medical Center  
Gary Krekemeyer, Director of Campus Operations, Design and Construction Services  
Bruce Morgan, Assistant Vice Chancellor for Research  
Leon Roach, Director, Capital Design and Construction Projects  
Audit Committee

**CONSTRUCTION MANAGEMENT**  
**Report No. 2012-601**

**I. BACKGROUND**

University of California (UC), Irvine (UCI), Internal Audit Services (IAS) conducted an audit of construction management at the request of the UC Office of the President. This review was performed at all UC campuses using a standard system-wide audit program that was developed for this construction review.

**II. PURPOSE, OBJECTIVES, AND SCOPE**

The purpose of the review was to assess the adequacy of the internal controls and construction management processes over the bidding and award process, change order execution, compliance with construction funding restrictions and requirements, and overall compliance with UCI policies and the UC Facility Manual (FM). The period of the review was construction projects started within the last three years and retention on the project has not yet been released.

IAS selected a major capital project for examination of the bid and award process, selected eight change orders from three major capital projects for a detailed review and required approvals, and reviewed compliance with restrictions and requirements attached to construction project funding.

The review included the following procedures:

1. Reviewed local and system-wide policies related to campus and medical center construction;
2. Interviewed management and other key personnel responsible for construction management activities and individuals with process responsibilities;
3. Reviewed and evaluated local bidding award practices to include contractor pre-qualification procedures, invitation for bid submission, review and approval of bids submitted, and to ensure contractors selected met the minimum responsibility for licensing, bonding and insurance requirements;
4. Reviewed construction project drawings and documentation;
5. Reviewed the change order review and approval processes and procedures;
6. Reviewed change order backup documentation for adequate support, and to determine if the scope of work was reflected in the change order;
7. Reviewed change orders for labor and material pricing accuracy, and accurate calculations of construction charges and fees;

**CONSTRUCTION MANAGEMENT**  
**Report No. 2012-601**

8. Reviewed funding restriction requirements associated with different types of construction projects;
9. Reviewed and evaluated departmental practices and controls to monitor compliance with construction funding restrictions and requirements.

**III. CONCLUSION**

Based on our review, the construction bidding and award process appears to be satisfactory and functioning in accordance with UCI policies and FM requirements.

However, IAS found exceptions with the review and approval of change orders. Some of the change orders reviewed lacked detailed support for labor and materials that are necessary to accurately quantify and calculate costs.

In addition, there was a misunderstanding and/or miscommunication regarding the sequence of approvals required for one restricted National Institute of Health (NIH) project, which led UCI personnel to assume that the award sponsor had given approval to start construction. This resulted in a potential violation of the terms and conditions to the award and may result in a potential cost disallowance. University personnel are working with NIH to resolve this issue.

Observation details and recommendations were discussed with management who formulated action plans to address the issues. These details are presented below.

**IV. OBSERVATIONS AND MANAGEMENT ACTION PLANS**

**1. Change Order Review**

**Background**

A change order may revise, add to, or delete previous requirements of the construction work, adjust the contract sum, and/or adjust the contract time. Change orders may not be executed until the contract has been signed by University authorized personnel and the contractor.

**Observation**

IAS examined the change order review and approval processes for the campus and the medical center. IAS judgmentally selected eight change orders from three capital projects for the medical center that had not yet been released. There were a total of 25 change order requests (COR) included in the eight change orders that

## **CONSTRUCTION MANAGEMENT**

### **Report No. 2012-601**

were reviewed for compliance with UCI policies and FM requirements. The COR cost methods were based on actual cost plus a contractor fee (overhead and profit).

Based on our review of the 25 CORs our observations are as follows:

- All eight change orders were approved by authorized personnel;
- All 25 CORs were approved by authorized personnel;
- Eleven of 25 (44%) CORs did not have a sufficient labor breakdown (hours/unit labor detail) to support the costs submitted by the contractor;
- Seventeen of 25 (68%) CORs did not have sufficient material quantity and unit price detail to support the costs submitted by the contractor;
- All 25 of the CORs reviewed were in agreement with the contract requirements.

In addition, the daily records of the contractor's actual costs are not reviewed and approved by Planning and Administration (PA) on a consistent basis. This review process would likely catch the accounting irregularities noted above.

The FM Volume 5, Part II, Section 3.2.1, Cost Proposals, and General Conditions, authorizes compensation for extra work based on actual cost plus a contractor fee. The contractor is paid for the actual time spent by the contractor's employees and subcontractors and the materials they actually used. The contractor is required to keep daily records of its actual costs, and submit them on a weekly basis for approval by the University's Representative. As a result, the contractor should be able to provide sufficient labor breakdown, material quantity and unit price details on every project.

Failing to provide adequate documentation to support actual time spent and materials used could result in improper payments and contractor fees and violate UCI policies and FM requirements.

#### **Management Action Plan**

Audit review of PA's change orders disclosed two concerns with the supporting documentation. The supporting time sheets and cost proposals submitted by the general contractor (GC's) and subcontractor were missing key cost details such as wage rates, labor classification and list of materials and the extended unit price. The cost proposals were largely lump sum amounts, which are allowed under the University's General Conditions, but did not properly adhere to the instructions of the cost proposal, Exhibit 7 form which states "Attach supporting data to each such form to substantiate the individually listed costs. The costs provided on

**CONSTRUCTION MANAGEMENT**  
**Report No. 2012-601**

these forms shall be used to substantiate additional costs shown on the cost proposal summary.”

PA will develop a training program internally for staff and for GC's and subcontractors. The training program and materials will include a cost proposal template with cost summary categories and detailed instructions on completing the required University Exhibit.

To reduce the likelihood of overpayments or underpayments, PA will rely on, subsequent to the PA project manager's review, an internal PA dedicated financial analyst (as per similar MCA's of previous IAS project 2011-402) to review all change orders. Employing dedicated staff for this review will strengthen our quality control system and identify any accounting errors before final University approval of payment.

**2. Restriction/Requirements Attached to Funding**

**Background**

There are several sources of funding for construction projects that vary in source type and restriction requirements. Although contract agreements and general conditions document the general requirements and restrictions of a project and the responsible parties, some sources such as NIH, a federal agency, have additional conditions, greater restrictions and pre-approval requirements for the documentation review and approval process prior to the start of construction and the release of award funds.

For construction projects funded by extramural sponsors, Design and Construction Services (D&CS), PA, Capital Planning, the Budget Office, Accounting and Fiscal Services and Sponsored Project Administration (SPA) interact for clarification and guidance with regard to project award action information that require sponsor prior approval, and to clarify and resolve potential issues and problems related to sponsored projects.

**Observation**

A review of restricted awards determined that one NIH grant award issued under the American Recovery and Reinvestment Act of 2009 (ARRA), and subject to NIH and ARRA terms and conditions was issued a “stop construction” order by the NIH.

Discussions with D&CS and SPA personnel and review of the documentation provided determined that the guidelines issued by NIH for Design-Build may have been subject to interpretation regarding the approvals required to start

**CONSTRUCTION MANAGEMENT**  
**Report No. 2012-601**

construction and the release of funds, which resulted in authorizing the Design-Build contractor to commence construction prior to receiving NIH's approval to do so.

As required by the Notice of Award (NOA), the schematic design drawings, design development drawings and construction documents were submitted to the NIH for review and approval. There was an assumption made that NIH's guidelines allowed for some flexibility necessary to implement UCI's Design-Build method. The General Instructions for the National Center for Research Resources (NCR) Design Requirements state, for projects that are procured through a Design-Build (DB) mechanism (combining design and construction in a single contract), NCR recommends a particular process to follow. D&CS interpreted the word recommends to mean that the process for approvals allowed for the flexibility needed to implement the Design-Build method of construction and as a result, believed the actions to start construction were made in good faith and that it was complying with the NOA, the terms and conditions, and the General Instructions for the NCR Design Requirements.

SPA is working with NIH to resolve the situation and preserve the funding for construction costs.

**Management Action Plan**

To address the situation and ensure that similar issues do not occur in the future, the Vice Chancellor for Research has appointed a Project Coordinator to work closely with D&CS, PA, Capital Planning, the Budget Office, SPA, and Accounting and Fiscal Services to maintain integral lines of communication and coordinate project and award management related activities. In addition, the Assistant Vice Chancellor for Research Administration has directed SPA staff to hold regularly-scheduled project status meetings with the above offices and the Principal Investigators and Project Coordinators for all UCI extramurally-funded construction projects, including project kick-off meetings, team review of draft construction contracts to ensure the alignment of milestones with sponsor administrative requirements and team review of contractor performance and project status prior to authorizing the contract to move from one phase of the contract to the next.