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Risk & Business Consulting.
Internal Audit.

CONSTRUCTION AUDIT WEBINAR

CONSTRUCTION PROCESS,
CONTROLS, AND
CONTRACT AUDITING

OCTOBER 1, 2015

WEBINAR TOPICS AND AGENDA

Construction Process, Controls, and Contract Auditing

1. Opening Remarks

2. Introductions

- UCOP Team
- Protiviti Team

3. Construction Process and Controls Auditing

- Bidding
- Insurance
- Change Orders
- Project Funding

4. Construction Contract Auditing

- Fixed Price / Lump Sum
- Unit Price
- Cost Plus GMP
- Time & Materials





CONSTRUCTION PROCESS AND CONTROLS AUDITING

CONSTRUCTION PROCESS AND CONTROLS

Bidding

Audit Objectives	Audit Procedures and Typical Findings
<p>Determine whether construction documents (designs, scope, building requirements, etc.) are reviewed and approved in accordance with the type of construction contracting being considered.</p>	<ol style="list-style-type: none"> 1. Determine if bidding process utilized to award construction contracts comply with the University Facilities Manual;. Judgmentally select one major capital project for detail testing. 2. Obtain construction documents for the selected project and verify that designs, scope, building requirements, etc. are appropriately documented, reviewed and approved as required by the Facilities Manual.
	<ul style="list-style-type: none"> • Typical findings include poorly documented designs, missing scope and lack of building requirements. Designs, scope and building requirements not appropriately reviewed and approved, which may lead to change orders that increase costs and delay facility openings.
<p>Determine that contractor pre-qualification process complies with University Facilities Manual requirements.</p>	<ol style="list-style-type: none"> 1. Verify that the Advertisement for Contractor Prequalification informs bidders that prequalification documents will be issued to interested bidders, and that bidding documents will only be issued to prequalified bidders. 2. Verify that a prequalification process (including evaluation form or equivalent) was used to evaluate the bidders. 3. Verify that the Supplementary Instruction to Bidders is modified as appropriate for prequalifying bidders. 4. Verify that capital programs only accept bids from prequalified bidders.
	<ul style="list-style-type: none"> • Typical findings include using unqualified bidders, which may impact quality of the work, drive up rework, increase costs and delay facility openings.

CONSTRUCTION PROCESS AND CONTROLS

Bidding (continued)

Audit Objectives	Audit Procedures and Typical Findings
<p>Determine if advertising, receiving, opening, evaluating and awarding of contract complies with University Facilities Manual requirements.</p>	<ol style="list-style-type: none"> 1. Verify that an invitation for bids (IFB) was advertised in both 1) a general circulation publication and 2) a trade publication at least twice in the 60 days prior to the bid deadline. 2. Verify that the IFB provided notice of the time/space for receiving and opening sealed bids, described the scope of work, and the method by which a responsible bidder will be selected. 3. Verify that bids collected are received on or before the Bid Deadline and are opened publicly according to the IFB instructions. 4. Review the Bid Form Checklist and the Selected Contractor's bid package to validate if required items were submitted. 5. Review the Bid Summary to validate that the contractor selected was appropriate based on evaluation method prescribed. 6. Review the bid package to validate that contractor selected met the minimum responsibility requirements of licensing, bonding and insurance. 7. If a CM-At-Risk Contract was used, verify if all subcontract awards agree to the Bid Package Certification.
	<ul style="list-style-type: none"> • Typical findings include lack of contractors bidding, bids submitted late, or incomplete bid packages which may lead to rebidding and further delays on the project. Other findings include bids awarded to unlicensed contractors that lack appropriate bonding and insurance coverage, which may increase risk exposure to default and lack of recourse.

CONSTRUCTION PROCESS AND CONTROLS

Insurance

Audit Objective	Audit Procedures and Typical Findings
For projects over \$25 million, ensure that contractor and subcontractors are enrolled and covered under the UCIP according to program underwriting requirements.	<ol style="list-style-type: none">1. For the project selected for review, request list of all contractors and subcontractors performing on job site.2. Confirm with the UCIP administrator that the general contractor and all subcontractors have been enrolled in UCIP.3. Request insurance documents for the general contractor and all subcontractors from the UCIP administrator to validate appropriate insurance coverage.
	<ul style="list-style-type: none">• Typical findings include uninsured and under insured general contractors and subcontractors, which may increase risk exposure to default and lack of recourse.

CONSTRUCTION PROCESS AND CONTROLS

Change Orders

Audit Objectives	Audit Procedures and Typical Findings
<p>Gain a detailed understanding of the number of change orders (COs) processed, as well as the amount and description of each change order (reviewed for a specific project selected for review).</p>	<ol style="list-style-type: none"> 1. In consultation with the campus architect, select a construction project in which the retention has not yet been released, and on which several COs have been processed (this may be the same project reviewed in the Bidding Process section). 2. For the project selected, obtain a listing of COs that were processed (CO Log). If possible, the listing should contain the CO/field order number, brief description of the CO and total costs associated with the CO. Review this listing and complete the following steps: <ol style="list-style-type: none"> a) Review for COs exceeding \$100,000. Determine if it was competitively bid. If not, is there a permanent record of the facts and conditions justifying not conducting an advertised bid? Review for appropriateness. b) Review for COs which include costs based upon an agreed upon lump sum amount. Typically, COs based on lump sum agreed upon amounts are distinguishable because total costs are rounded to the nearest thousand, ten thousand or hundred thousand. Review COs based on agreed upon lump sum amounts to ensure that costs are supported by a detailed cost breakdown.
	<ul style="list-style-type: none"> • Typical findings include excessive COs and depleted contingency, which may lead to budget overruns and claims. Other findings include COs just under \$100,000 and COs without detailed cost breakdowns, which may lead to inflated costs and circumventing controls.

CONSTRUCTION PROCESS AND CONTROLS

Change Orders (continued)

Audit Objectives	Audit Procedures and Typical Findings
<p>Ensure that change orders (COs) are priced in accordance with the Facilities Manual and/or the construction contract documents, and that deficiencies do not exist in the pricing methodologies or the pricing data.</p>	<p>Select a representative sample of approved COs, and perform the following:</p> <ol style="list-style-type: none"> 1. Obtain the detailed CO backup documentation (Cost or Pricing Data) for each CO included in the sample. 2. Ensure that CO has been approved in accordance with the contract terms and conditions. 3. For projects in excess of \$20 million, verify that COs that exceed 25% of the project cost are approved by the Regents. Determine if augmentations have been made, and the CO was approved by the Chancellor that otherwise should have been approved by the Regents. 4. For projects that were approved by the Regents, determine if any scope changes occurred between Regent approval and contract signing. If scope changes did occur, ensure that the scope changes were appropriately approved by the Regents. 5. Perform recalculation of CO to detect any math and/or calculation errors. 6. Verify that CO costs are in accordance with the contract terms and conditions. Usually, allowable costs and cost limitations for COs are included in the construction contract. 7. Verify labor and labor burden pricing for COs. Pay rates should agree with amounts actually paid to the workers subject to maximums, which may be included in the contract agreement. Burden rates should reflect the actual cost of the specific cost components included within the rate.
	<ul style="list-style-type: none"> • Typical findings include unapproved COs, math and/or calculation errors, inflated costs, burdens and markups, which may lead to cost overruns.

CONSTRUCTION PROCESS AND CONTROLS

Change Orders (continued)

Audit Objectives	Audit Procedures and Typical Findings
	<ol style="list-style-type: none">8. Verify appropriateness of CO material pricing, material quantity take-offs (list of materials), labor productivity factors and related extensions. A detailed review of quantity take-offs may be warranted as a part of the audit test work. Common overcharges typically can occur when the contractor makes mistakes in their CO material take-offs. A common error would be to include additive material but forget to delete material quantities removed from the plans.9. Verify the detailed scope of work required by the CO to ensure that it represents a legitimate change in scope (i.e., work included in the CO is not already included in the base contract).10. If possible, perform a visual inspection of the CO work to ensure that the work was properly executed.11. Discuss any exceptions noted with the project manager to determine reasons.
	<ul style="list-style-type: none">• Typical findings include inflated material pricing, excessive quantities, missing material credits (net amounts), which may lead to cost overruns and excess material. Other findings include CO work already included in the base contract and CO work not completed but billed, which may lead to cost overruns and falsified billings.

CONSTRUCTION PROCESS AND CONTROLS

Project Funding

Audit Objectives	Audit Procedures and Typical Findings
<p>Determine whether funding restrictions or requirements only accompany particular types of construction projects or those above a designated dollar threshold.</p>	<ol style="list-style-type: none">1. Interview appropriate Capital Programs and/or Facilities Management staff to determine whether the most common types of restrictions and requirements are typically associated with particular types of construction projects. If so, summarize the results.2. Validate the linkage between funding restrictions and construction project type by contacting department personnel to arrange a review of sample construction project files. The sample selected for review should be sufficiently diverse to get a cross section of varying types and size (by cost) of construction projects.3. Review sample construction project files and note any relationships between the source(s) of funding, restrictions or requirements tied to the funding, and project type or size (\$).4. Verify project review results with appropriate departmental personnel.
	<ul style="list-style-type: none">• Typical findings include construction projects not in compliance with funding restrictions or requirements, which may lead to lack of future funding.



CONSTRUCTION CONTRACT AUDITING

CONSTRUCTION CONTRACT AUDITING

Fixed Price / Lump Sum Contracts

OVERVIEW

In a Fixed Price / Lump Sum contract, the **OWNER** agrees to pay the **GENERAL CONTRACTOR (GC)** a stipulated amount for services (e.g., project management, construction) provided by the **GC**.

POTENTIAL RISK AREAS

1. Percentage of Completion (POC)

- Difficult to audit unless done in real time (physical progress)
- Review the process to ensure POC is not inflated

2. Quality

- Difficult to audit unless you have the technical skills and knowledge
- Review the process to ensure inspections occur and specifications are met

3. Change Orders

- Most likely area to audit for potential cost recovery
- Select a sample or audit the entire population
- Determine if change was for out of scope work (Contractor driven, Owner driven)
- Audit the underlying support and usage of contingency

CONSTRUCTION CONTRACT AUDITING

Unit Price Contracts

OVERVIEW

In a Unit Price contract, the **OWNER** agrees to pay the **GENERAL CONTRACTOR (GC)** a stipulated price for each unit installed (e.g., cubic yard of concrete, linear foot of pipe/cable) provided by the **GC or Trade**.

POTENTIAL RISK AREAS

1. Units Installed

- Most likely area to audit for volume discrepancies
- Difficult to audit for some units unless done in real time
- May require actual measurement of units installed (sand, concrete, cable, pipe, etc.)
- Review the process to ensure completeness and accuracy of quantities and measurements

2. Change Orders

- Most likely area to audit for potential cost recovery
- Select a sample or audit the entire population
- Determine if change was for out of scope work (Contractor driven, Owner driven)
- Audit the underlying support and usage of contingency

CONSTRUCTION CONTRACT AUDITING

Cost Plus GMP Contracts

OVERVIEW

In a Cost Plus arrangement, the **OWNER** agrees to reimburse the **CONSTRUCTION MANAGER (CM)** for actual project material and labor costs incurred by the **CM**, as well as a stipulated amount (in the form of either a fixed fee or a fixed percentage of the contract cost) for **CM** overhead and profit (i.e., “compensation”). A **Guaranteed Maximum Price (GMP)** establishes a “cap” or “target price” for project costs.

POTENTIAL RISK AREAS

1. Construction Manager Fees

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population
- Determine if fee was calculated per the contract terms (i.e., on the cost of the work)
 - Normal Work
 - Change Order Work

2. General Conditions

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Audit the underlying support

CONSTRUCTION CONTRACT AUDITING

Cost Plus GMP Contracts (continued)

POTENTIAL RISK AREAS

3. Self-Performed Work

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Audit the underlying support
 - Labor (including burden)
 - Materials
 - Equipment
 - Expenses

4. Subcontractors

- Audit for potential cost recovery
- Select a sample of subcontractors to audit
- Determine if they billed more than contracted

5. Risks involving Change Orders and Quality may also be present if a cap or target price have been negotiated.

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts

OVERVIEW

In a Time and Materials contract, the **OWNER** agrees to pay the **GC** agreed upon rates for time incurred and material costs for all work performed by the **GC**. Fees are also negotiated between the **OWNER** and **GC** and applied in addition to the cost of work.

POTENTIAL RISK AREAS

1. Labor Burden

- Determine components of labor burden

- Tax accrual / percentage
- Insurance accrual / percentage
- Medical / Dental accrual / percentage
- Pension / 401K accrual / percentage
- Other accruals (bonus, safety, etc.)

- Vacation accrual / percentage
- Sick day accrual / percentage
- Holiday accrual / percentage
- Training accrual / percentage
- Vehicle accrual / percentage
- Phone accrual / percentage

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

2. Labor

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine if labor hours and rates along with burden were billed per contract terms

- Rates (Hourly, Daily, Monthly)
- Job Classification
- Exempt / Non-exempt
- Taxes (FICA, FUTA, SUTA)
- Vacation days
- Sick days
- Holidays
- Weekends
- Overtime
- Double Time
- On / Off Duty Time

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

3. Equipment

- Audit for potential cost recovery
- Select a sample of payment applications or audit the entire population using data analytics
- Determine if equipment was billed appropriately

- Type
- Number
- Rates (hourly, daily, monthly)
- Hours
- Operator
- Onsite / Offsite
- Rentals (contractor owned, 3rd party)
- Purchases

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

4. Expenses

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine if expenses were reasonable / appropriate

- Null or blank description fields*
- Accruals*
- Projections / Projected costs*
- Charge backs*
- Adjustments*
- Intercompany transfers*
- Markups
- Bonuses
- Incentives
- Permits

- Certifications / licenses
- Repairs
- Safety equipment / gear
- Mileage
- Fuel
- Surcharges
- Credits
- Discounts
- Team building events
- Outings

** may only be found through job cost data analytics*

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

4. Expenses (continued)

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine if expenses were reasonable / appropriate

- Gifts or gift cards
- Insurance (employee health, workers comp, auto liability, general liability, umbrella, pollution coverage, etc.)
- Training
- Cell phone / Smart phone / walkie-talkie
- Meals (snacks, breakfast, lunch, dinner, drinks, food)
- Travel (air, hotel, car, per diem, parking, tolls)

- Relocation / Moving
- Recruiting
- Entertainment
- Materials
- Tools
- Equipment
- Car / Truck / Vehicle

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

5. Allowances

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine if allowance was billed along with expense
 - Relocation
 - Office supplies
 - Data processing
 - Mobile phones
 - Safety program
 - Vehicles

6. Rework / Warranties

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine if work was previously performed and billed again

CONSTRUCTION CONTRACT AUDITING

Time and Material Contracts (continued)

POTENTIAL RISK AREAS

7. Insurance / Bonds

- Audit for potential cost recovery
- Select a sample of invoices / payment applications or audit the entire population using data analytics
- Determine the following:
 - Insurance/bond costs incurred were less than billed
 - Insurance/bonds billed but not obtained
 - Insurance/bonds refunds/rebates were not credited back to the project at close out

WEBINAR RECAP

Construction Process, Controls, and Contract Auditing

Construction Process and Controls Auditing

- Bidding
- Insurance
- Change Orders
- Project Funding

Construction Contract Auditing

- Fixed Price / Lump Sum
- Unit Price
- Cost Plus GMP
- Time & Materials



QUESTIONS



THANK YOU!

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