IIA San Diego Chapter
Government Auditing Seminar

Capital Project Performance Auditing

November 2013
Introduction

In today’s contracting environment, it is important to understand the risks when embarking on projects. Depending on the contracting method, risks may fall on the Contracting Entity, Contractor or both.

We’ll discuss risks in general and focus on how performance auditing can verify effective controls are in place and further mitigate risks in projects.
Performance Auditing

**Definition**

- “Performance audits are defined as audits that provide findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria.”

  - *Government Auditing Standards*

**Definition**

- “An independent examination of the efficiency and effectiveness of government undertakings, programs or organizations, with due regard to economy, and the aim of leading to improvements.”

  - *International Organization of Supreme Audit Institutions*

**Guide to Project Management Body of Knowledge (PMBOK)**

- The PMBOK Guide describes the "generally accepted" knowledge and practices “applicable to most projects most of the time, upon which there is widespread consensus about their value and usefulness.”
- Thirteen (13) knowledge areas identified in the PMBOK Guide and construction extension have been further examined to identify associated risks, considerations and applicable audit steps.
Project Management / Contract Auditing Areas

1. Project Integration Management
2. Project Scope Management
3. Project Time Management
4. Project Cost Management
5. Project Quality Management
6. Project Human Resource Management
7. Project Communications Management
8. Project Risk Management
9. Project Procurement Management
10. Project Safety Management
11. Project Environmental Management
12. Project Financial Management
13. Project Claim Management
1. Project Integration Management

**Overview:**

- The processes required to ensure that the various elements of the project are properly coordinated. It involves making tradeoffs among competing objectives to meet or exceed stakeholder needs and expectations.

**Process Risks / Considerations:**

- Third party coordination and “right of way” issues may not be appropriately monitored
- Cost saving opportunities may be forgone if Value Engineering Proposals are not identified and processed appropriately

**Audit Steps:**

- Review and evaluate third party contracts
- Evaluate process to management and resolve eminent domain risks
- Verify cost savings resulting from Value Engineering Change Proposals are passed back to the Contracting Entity
- Review the Work Breakdown Structure (WBS) of approved projects to validate it was in place prior to commitment of funding
- Identify opportunities to standardize WBS across projects
Example

Work Breakdown Structure
2. Project Scope Management

Overview:

- The processes required to ensure that the project includes all work required, and only the work required, to complete the project successfully.

Process Risks / Considerations:

- The contracted scope of work is not adequate, clearly defined, or lends itself to change orders and project overruns
- Change Orders may not be an appropriate addition or may be for work included in the original scope
- Change orders may not be properly reviewed and approved
- Unauthorized or excessive changes may occur

Audit Steps:

- Compare the project details and objectives to the final outcome of the project
- Evaluate the process to track and monitor change orders
- Verify change orders are properly approved prior to commencement of work
3. Project Time Management

Overview:

• The processes required to ensure that the project is completed within the approved timeframe.

Process Risks / Considerations:

• The project budget and schedule may not be adequately monitored
• Project deadlines may be missed due to risks not being appropriately identified, analyzed, and responded to throughout the course of the project

Audit Steps:

• Evaluate processes and controls to monitor status of the project including project schedules and forecasts.
• Ensure proper processes and controls are in place to timely close out projects
## Example

### Project Schedule

#### Overall Construction Summary Schedule - 29-May-11

<table>
<thead>
<tr>
<th>Activity ID</th>
<th>Activity Name</th>
<th>Remaining Duration</th>
<th>Start</th>
<th>Finish</th>
<th>May</th>
<th>Jun</th>
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<tr>
<td><strong>Area 0 - Infrastructure/Utilities/Reclaim Water</strong></td>
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<tr>
<td>CWP-0237-001 Permanent Warehouse (Electrical)</td>
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<td>37 - Fresh Water Supply</td>
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<td>Coarse Ore Stockpile &amp; Reclaim Tunnel</td>
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<td>31 - Ore Feed, Storage and Reclaim</td>
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<td>53 - Grind Area</td>
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<td>56 - Tailings System</td>
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<td>57 - Regert Systems</td>
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<td>Pebble Re-circulating</td>
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#### Critical Paths - 29-May-11

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<tr>
<th>Activity ID</th>
<th>Activity Name</th>
<th>Remaining Duration</th>
<th>Start</th>
<th>Finish</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
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<tr>
<td>185</td>
<td>Delivery of last Batch of Structural Steel/Pebble Crusher Internal Steel</td>
<td>115</td>
<td>15-Jul-11</td>
<td>07-Oct-11</td>
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<tr>
<td>187</td>
<td>Mechanical Installation of Pebble Crusher Building Structural Steel (Building Steel)</td>
<td>115</td>
<td>15-Jun-11</td>
<td>07-Oct-11</td>
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<tr>
<td>189</td>
<td>Mechanical Installation of Pebble Crusher Building Structural Steel (Internal Steel)</td>
<td>115</td>
<td>15-Jun-11</td>
<td>07-Oct-11</td>
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<tr>
<td><strong>Regind Area - Critical Path</strong></td>
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<tr>
<td>A5930</td>
<td>Installation of Fotation Columns Structural Steel (GW-561-35-003) (Includes Wallway to Fotation)</td>
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<td>1109</td>
<td>Mechanical Installation of Cleaver Fotation Columns (GW-FC-01A)</td>
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<td>07-Oct-11</td>
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</tr>
</tbody>
</table>
4. Project Cost Management

**Overview:**

- The processes required to ensure that the project is completed within the approved budget

**Process Risks / Considerations:**

- Payment Applications may not be properly supported and approved to verify compliance to contract terms and conditions
- Lack of monitoring of provisional sum expenditures and allowances may lead to inflated costs
- Invoiced costs may not be properly allocated between funding categories
- Roles and responsibilities within the payment process may not be appropriately segregated

**Audit Steps:**

- Review invoices / payment applications to verify compliance with contract terms and conditions
- Review invoices to ensure proper approval
- Ensure payments are only made to authorized vendors
- Ensure reconciliation of contracted amounts to funds spent is performed at completion of project
### CONTRACTOR'S APPLICATION FOR PAYMENT

<table>
<thead>
<tr>
<th>CHANGE ORDER SUMMARY</th>
<th>ADDITIONS</th>
<th>DEDUCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE ORDERS APPROVED IN PREVIOUS MONTHS BY OWNER</td>
<td></td>
<td></td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
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<tr>
<td>APPROVED THIS MONTH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER</td>
<td>DATE APPROVED</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
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<td></td>
</tr>
</tbody>
</table>

**NET CHANGE BY CHANGE ORDERS**

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The undersigned contractor certifies that to the best of the contractor's knowledge, information and belief the work covered by this application for payment has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work which previous certificates for payment were issued and payments received from the owner, and that current payment shown

**APPLICATION IS MADE FOR PAYMENT, AS SHOWN BELOW, IN CONNECTION WITH THE CONTRACT. CONTINUATION SHEET, AIA DOCUMENT G 703, IS ATTACHED.**

1. ORIGINAL CONTRACT SUM ........................................... $ 40,305,512
2. Net Change by Change Orders ........................................... $ -
3. CONTRACT SUM TO DATE ........................................... $ 40,305,512 (Line 1 + 2)
4. TOTAL COMPLETED AND STORED TO DATE ........................................... $ 24,790,621 (Column G on G703)
5. RETAINAGE ........................................... $ 1,058,661 (Total in Column I of G703)
6. TOTAL EARNED LESS RETAINAGE ........................................... $ 23,731,960 (Line 4 less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ........................................... $ 20,185,389 (Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE ........................................... $ 3,546,571 (Line 3 less Line 6)
9. BALANCE TO FINISH, PLUS RETAINAGE ........................................... $ 16,573,552

**STATE OF: Arizona**
**COUNTY OF: Maricopa**
## Example

### G703 Payment Application

<table>
<thead>
<tr>
<th>AIA ACCT</th>
<th>DESCRIPTION OF WORK</th>
<th>ORIGINAL BUDGET</th>
<th>CHANGES TO DATE</th>
<th>SCHEDULE OF VALUE</th>
<th>WORK COMPLETED</th>
<th>STORED MATERIALS</th>
<th>TOTAL COMPLETED &amp; STORED TO DATE</th>
<th>BALANCE TO FINISH</th>
<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
<th>Net Due</th>
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<td>0%</td>
<td>133,663</td>
<td>100%</td>
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### 3505

**FF&E BUILDING SYSTEMS**

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<th>SCHEDULE OF VALUE</th>
<th>WORK COMPLETED</th>
<th>STORED MATERIALS</th>
<th>TOTAL COMPLETED &amp; STORED TO DATE</th>
<th>BALANCE TO FINISH</th>
<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
<th>Net Due</th>
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<tbody>
<tr>
<td>0012500.505.0003</td>
<td>Building Systems</td>
<td>54,455</td>
<td>54,455</td>
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<td>54,455</td>
<td>100%</td>
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### 3909

**FF&E CURTAIN & DRAPES**

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<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
<th>Net Due</th>
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<tbody>
<tr>
<td>0012500.506.0003</td>
<td>Curtain &amp; Drapes</td>
<td>110,671</td>
<td>(75,829)</td>
<td>34,842</td>
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<td>0%</td>
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### 4900

**GENERAL CONDITIONS**

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<th>ORIGINAL BUDGET</th>
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<th>STORED MATERIALS</th>
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<tr>
<td>C004000.001.0000</td>
<td>General Conditions</td>
<td>2,790,678</td>
<td>(2,768,371)</td>
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### 0004900.001.0000

**Direct General Conditions**

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<th>BALANCE TO FINISH</th>
<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
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<tbody>
<tr>
<td>C003</td>
<td></td>
<td>264,866</td>
<td>(202,040)</td>
<td>(27,174)</td>
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<td>(27,174)</td>
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### 0004800.020.0000

**General Liability Insurance**

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<th>STORED MATERIALS</th>
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<tbody>
<tr>
<td>C003</td>
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<td>409,175</td>
<td>(294,594)</td>
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### 0004800.070.0000

**Surety Contract**

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<tbody>
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<td>C003</td>
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<td>2,343,649</td>
<td>(1,474,483)</td>
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### 0004820.010.0000

**Contractor's Contingency**

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<th>BALANCE TO FINISH</th>
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<th>CUMULATIVE RETAINAGE</th>
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<tbody>
<tr>
<td>C003</td>
<td></td>
<td>1,322,810</td>
<td>1,322,810</td>
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<td>1,322,810</td>
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### SUBTOTAL - GENERAL CONDITIONS

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<th>STORED MATERIALS</th>
<th>TOTAL COMPLETED &amp; STORED TO DATE</th>
<th>BALANCE TO FINISH</th>
<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
<th>Net Due</th>
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<tbody>
<tr>
<td>7,131,178</td>
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<td>7,131,178</td>
<td>3,884,137</td>
<td>333,153</td>
<td>4,217,290</td>
<td>59%</td>
<td>2,913,888</td>
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### TOTAL - BASE CONTRACT

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<th>STORED MATERIALS</th>
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<th>BALANCE TO FINISH</th>
<th>CURRENT RETAINAGE</th>
<th>CUMULATIVE RETAINAGE</th>
<th>Net Due</th>
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<td>40,305,512</td>
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<td>40,305,512</td>
<td>21,258,988</td>
<td>2,220,895</td>
<td>30,106,621</td>
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<td>15,514,891</td>
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5. Project Quality Management

- The processes required to ensure that the project will satisfy the needs for which it was undertaken.

Process Risks / Considerations:

- Ineffective quality oversight may result in:
  - Poor quality work
  - Project re-work
  - Schedule delays
  - Increased costs
  - Personal injuries or fatalities
  - Prolonged negative public attention and national news coverage

Audit Steps:

- Review procedures for verifying quality of goods / services received
- Evaluate vendor quality control and quality assurance processes and plans
6. Project Human Resources Management

**Overview:**

- The processes required to make the most effective use of the people involved with the project. This includes all the project stakeholders, sponsors, customers, partners, and individual contributors.

**Process Risks / Considerations:**

- Contracts may not define damages for turnover of key personnel
- Contractually defined liquidated damages may not be appropriately reported or paid

**Audit Steps:**

- Review contract terms and conditions to ensure language is included regarding substitutions of key personnel and liquidated damages
- Determine if events warranting liquidated damaged have occurred
- Review if employee wage increases are within the allowable amount per the contract
### Example

**Rate Increases**

<table>
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<tr>
<th>Sample Firm</th>
<th>Rate Adjustments 2004</th>
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<tr>
<td></td>
<td>2003 Salary</td>
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<tr>
<td>Employee A</td>
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<td>Employee U</td>
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<tr>
<td>Employee V</td>
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</table>
7. Project Communications Management

**Overview:**
- The processes required to ensure timely and appropriate generation, collection, dissemination, storage, and ultimate disposition of project information.

**Process Risks / Considerations:**
- Timely and adequate information may not be reported to management
- Insufficient project oversight

**Audit Steps:**
- Review controls in place for project oversight and reporting
- Review methodologies and management reports that reflect project status and projections
- Review status meeting schedule, frequency, minutes, action items, follow up, and any other documentation
8. Project Risk Management

Overview:

- The systematic process of identifying, analyzing, and responding to project risk.

Process Risks / Considerations:

- Project risks may not be appropriately identified or mitigated
- Adequate bonds may not be purchased
- Adequate insurance coverage may not be maintained

Audit Steps:

- Review the process to identify and track risks of the project / contract.
- Verify proper insurance coverage is provided to the owner
  - OCIP Program
  - CCIP Program
  - General Liability Insurance
  - Workers Compensation Insurance
  - Builders Risk
  - Sub-Guard Insurance
- Review the Risk Analysis and / or Register for the identified risk, owner and updates
9. Project Procurement Management

**Overview:**
- The processes required to acquire goods and services from outside the organization, to attain project objective.

**Process Risks / Considerations:**
- The bidding / vendor selection process may not be established or followed
- Work may be improperly awarded to less qualified contractors
- False and misleading bids may be accepted
- Contracts may have non-advantageous terms and conditions
- Contracts may not be appropriately reviewed and approved
- Contracts may not be properly maintained and communicated

**Audit Steps:**
- Evaluate Procure to Pay process, policies, and procedures
- Review and evaluate contract terms and conditions
- Review the processes in place for monitoring the performance of vendors
Definitions

*Single Source versus Sole Source*

**Single Source Definition:**
Choosing a specific company and bypassing the competition refers to single sourcing. Different suppliers and distributors typically produce and sell similar merchandise. This is advantageous to companies that purchase supplies because they can choose among various companies. However, after a thorough analysis of possible suppliers, company heads, managers or owners may choose to sign with a single company and pass up the opportunity to work with other suppliers. This decision could be based on price or the quality of products.

**Sole Source Definition:**
Sole-sourcing contracts vary from single-sourcing contracts. With single sources, companies weigh their options and then choose a supplier that meets their needs. With sole sourcing, there are no options. Companies may search for multiple suppliers and distributors for a product or service, then discover only one vendor is capable of producing the product.
10. Project Safety Management

Overview:

• The processes required to assure that the construction project is executed with appropriate care to prevent accidents that cause or have the potential to cause personal injury or property damage.

Process Risks / Considerations:

• Appropriate measures may not be in place to ensure compliance with safety regulations
• Safety regulations may not be identified or communicated

Audit Steps:

• Determine if process to communicate and enforce safety protocols are effective
• Verify required safety regulations are in place and assess the process to identify and implement safety requirements per OSHA and / or CalOSHA Standards
The Division of Occupational Safety and Health (DOSH), better known as Cal/OSHA, protects workers from health and safety hazards on the job in almost every workplace in California through its research and standards, enforcement, and consultation programs. Cal/OSHA also oversees programs promoting public safety on elevators, amusement rides, and ski lifts. In addition, the division oversees programs promoting the safe use of pressure vessels (e.g., boilers and tanks).
11. Project Environmental Management

**Overview:**

- The processes required to ensure that the impact of the project execution to the surrounding environment will remain within the limits stated in legal permits.

**Process Risks / Considerations:**

- Appropriate measures may not be in place to ensure compliance with environmental regulations.
- Environmental regulations may not be identified or communicated.

**Audit Steps:**

- Determine if process to communicate and enforce environmental protocols are effective.
- Verify required safety regulations are in place and assess the process to identify and implement environmental requirements.
- Determine the procedures to obtain necessary permits
  - Working Hours
  - Noise Permits
  - Storm Water Management
Stormwater runoff is generated when precipitation from rain and snowmelt events flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots, and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated. The primary method to control stormwater discharges is the use of best management practices (BMPs). In addition, most stormwater discharges are considered point sources and require coverage under an NPDES permit.
12. Project Financial Management

Overview:

• The processes to acquire and manage the financial resources for the project.

Process Risks / Considerations:

• Controls may not be established for administration of federal awards
• Principles may not be established to determine allowable costs / reimbursable expenses

Audit Steps:

• Evaluate process to monitor commitments, cash flow and budget forecasts
• Evaluate controls for ensuring compliance with OMB Circular A-87
• Review established principles for allowable / reimbursable costs
• Review the objectives detailed in the planning phases of the project to determine if they were achieved (e.g., ROI, IRR, production, etc.)
• Review the close-out of the project to identify any recoverable funding
• Evaluate any resulting assets related to the project to determine the proper application of accounting principles (e.g., in service date, depreciable lives)
• Review the process for valuations of key financial estimates
• Evaluate the impact of multiple ERP systems
13. Project Claims Management

Overview:

• The processes required to eliminate or prevent claims from arising and for the expeditious handling of claims when they do occur.

Process Risks / Considerations:

• Controls may not be established to ensure compliance with federal, state and local standards or regulations
• Non-compliance to prevailing wage requirements can lead to debarment, civil / criminal prosecution or possible negative media coverage
• Workers may be undocumented or may not be properly licensed leading to non-compliance of Federal and State labor laws

Audit Steps:

• Determine the process for monitoring compliance with the Buy America provision of the ARRA
• Determine the process for managing and mitigating anti-corruption compliance risks including FCPA and OFAC
• Review payroll of contractors / vendors to verify payroll forms and other labor compliance reports are standardized and properly filed
• Review payroll of contractors / vendors to verify wage rates are above the applicable prevailing wage determination
Questions
Change Orders
Time & Material Change Orders

With these type of change orders, most of the risks have been accepted by the Owner:

- Emergency services
- Environmental services
- Undefined scope of work
- Time is of the essence

Here are some risk areas the Owner needs to be concerned with:

- Materials
- Equipment
- Expenses
- Allowances
- Rework/Warranty
- Insurance/Bonds
Auditing Time & Material Type Change Orders

**Labor**
- Determine if labor hours and rates billed per contract
  - Higher rates (ST, OT) / levels
  - Excessive / Inflated hours
  - Billing ghost / Terminated employees
  - Inflated labor burden

**Material**
- Determine if materials billed appropriately
  - Wrong project
  - Duplicate invoices
  - Excess materials

**Equipment**
- Determine if equipment hours and rates billed per contract
  - Idle equipment
  - Higher / Missing rates
  - Rent vs. Buy
Auditing Time & Material Type Change Orders

**Expenses**

- Determine if expenses are reasonable
  - Travel
  - Meals
  - Entertainment
  - Discounts

**Allowances**

- Determine if allowance billed along with expense
  - Relocation
  - Office supplies
  - Data processing
  - Mobile phones
  - Safety program
  - Vehicles

**Expenses**

- Determine if work was previously performed and billed again
- Emergency services required because of sub-contractor mistake or negligence
  - Flood or mold work
  - Improper moisture plan
    - Windows left open after finish work was completed
Auditing Time & Material Type Change Orders

- Determine the following:
  - Insurance / bond costs incurred were less than billed
    o Verify and validate bonding rate percentage
    o Request copies of cleared checks
  - Insurance/bonds billed but not obtained
    o Request copy of notarized bond
    o Call the surety company to verify bond
    o Upon completion, request a copy of the bond release
  - Insurance / bond refunds / rebates were not credited back to the project at close out
Questions