

## Make or Buy Decisions in Proposal Audit

### The Scenario

#### Risk Assessment-Research and Planning:

The auditor was assigned to evaluate the materials portion of a contractor's \$175 million proposal to manufacture light weight all-terrain vehicles (ATV) for the Army. The firm-fixed price proposal was for Lot 4 of the program. The supervisor stated that the lead auditor initially reviewed the proposal and determined that it was adequate for audit. The lead auditor also reviewed the electronic permanent file and identified information about the contractor and the status of the relevant business systems' internal controls.

- Contractor's primary business was manufacturing light weight ATVs for the Army and the Marine Corps.
- Contractor is a subsidiary of a major defense contractor. Annual sales were around \$500 million and all to the Government. The contract mix was 80 percent firm-fixed price, 10 percent time and material (T&M), and 10 percent cost reimbursable.
- DCAA audited several proposals over the last year and questioned costs due to lower audit recommended labor and indirect rates. DCAA also audited the Lot 1 proposal for the ATV program, but did not question any costs.
- DCAA issued an estimating system deficiency report six months prior for two significant non-compliances with Defense Federal Acquisition Regulations Supplement (DFARS) requirements identified during a proposal audit. The contractor:
  - significantly changed its methodology for estimating labor rates without informing the Government [DFARS 252.215-7002 (d)(3)(ii)]; and
  - did not adjust the indirect rates for known increases to its indirect rate bases [DFARS 252.215-7002 (d)(3)(i)].
- The Defense Contract Management Agency (DCMA) Administrative Contracting Officer (ACO) initially disapproved the estimating system based on the DCAA deficiency report. The ACO later approved the estimating system based on the contractor's submitted corrective action plan to address the significant deficiencies.
- The status of the remaining related business systems is illustrated in the following table.

Business System	Date Last Reviewed	Reviewer	Findings
Accounting System and Control Environment	3 months ago	DCAA	None
Contractor Purchasing System Review	6 months ago	DCMA	None
Material Management Accounting System (MMAS) <sup>1</sup>	3 years ago	DCAA	None

<sup>1</sup> Contractor recently upgraded its MMAS.

### Risk Assessment-Initial Review of Proposal:

The lead auditor documented general information from an initial review of the proposal.

- The proposal was for a 2-year \$175 million sole source firm-fixed price Army contract to manufacture a lot of 350 ATVs. The contractor was required to certify that the submitted cost or pricing data was current, accurate and complete as of the date of price agreement.
- The proposal was for Lot 4. Lots 1 and 2 were based on the original vehicle design, and Lots 3 and 4 used a revised vehicle design. The contractor had completed Lots 1-3.
- The contractor used the Lot 3 actual costs as the basis for the proposed unit price for the Lot 4 vehicles.

### Risk Assessment-Coordination with Procuring Contracting Officer (PCO) and ACO:

The lead auditor discussed the audit request with the PCO and ACO to confirm audit expectations, identify any specific concerns, and obtain information about the ATV program. The lead auditor documented relevant information from the discussions.

- The PCO provided historical information about the ATV program and the major redesign after Lot 2.
  - More effective bomb-resistant armor plating for vehicle body and enhanced bullet-proofing of windows was added.
  - Additional testing protocols were added because DCMA technical staff found incidences of inadequate and incomplete contractor testing. All quality control testing was now required to be performed by an independent third-party prior to delivery.
  - Both the testing and design issues resulted in product failure in combat and improvised explosive device attacks.
- The PCO added that they were concerned that the proposed fixed Lot 4 price was almost 20% higher than the independent government cost estimate (IGCE)<sup>1</sup> and the negotiated fixed Lot 3 price. Since both Lots 3 and 4 used the same revised design and were for production of the same number of ATVs, the proposed Lot 4 price should not be higher than the expected increase for normal escalation factors. The PCO stated DCMA would be doing a technical evaluation on labor and material quantities.
- The lead auditor requested the PCO to provide the technical evaluation when completed, the independent government cost estimate for Lot 4, and any cost/price analyses performed for Lot 3.

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<sup>1</sup> The independent government cost estimate (IGCE) is developed by the requiring activity and used to establish a realistic price/cost for budget purposes. It represents the Government's estimate of the resources and projected cost, including profit or fee, a contractor will incur in the performance of a contract. In addition, the Contracting Officer uses the Government cost estimate for technical and management information, and this government cost estimate is the baseline for evaluating a contractor's proposed contract price/cost. The format and contents of the Government's cost estimate vary with the complexity and value of the requirement.

- The ACO did not have any other specific concerns about the proposal or program.

Preliminary Analytical Procedures:

The auditor reviewed the proposal sections for direct material cost. Direct materials represented 40 percent of the total proposed cost and were supported by a consolidated priced bill of material (BOM)<sup>2</sup>. The contractor had also included assembly/subassembly and engineering bills of material in the technical part of the proposal. The consolidated priced bill of material identified the part number, vendor, total quantity required, unit price, total cost, and assembly/subassembly to which the part related. Most parts were priced based on purchase history for Lot 3. The auditor used the contractor- provided online access to the contractor's accounting system to compare the proposed Lot 4 material costs with the Lot 3 actual costs. The auditor performed the following analytical procedures.

Analytical Procedure: Scanned the work breakdown structure (WBS) in the Lot 3 contract to determine how costs were segregated and recorded in the contractor's accounting records. Compared the Lot 3 work breakdown structure to the work breakdown structure in the Lot 4 proposal to verify consistency between how the costs were estimated and then accumulated in the accounting records.

Result: The work breakdown structure segregated costs by major vehicle assemblies and subassemblies. The Lot 3 work breakdown structure was consistent and comparable to the Lot 4 proposal structure.

Analytical Procedure: Compared the proposed direct materials for Lot 4 to the Lot 3 actual direct material costs.

Result: Proposed Lot 4 material costs were about 15% higher than the actual Lot 3 incurred costs. The auditor noted that this difference was more than normal escalation for inflation.

Entrance Conference:

The proposal audit team, including the supervisor, met with the contractor's audit liaison and the proposal preparer to gain an understanding of the basis for each cost element in the proposal, the related supporting documentation, and the relevant policies, procedures, and processes (walk-through of the proposal). The lead auditor asked questions regarding the changes/status of contractor internal control systems, fraud risk considerations, and management knowledge of potential fraud related to the proposal or contract program. The contractor representatives responded as follows to these questions.

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<sup>2</sup> A properly prepared consolidated priced bill of material will usually contain a detailed listing of the types, quantities and proposed prices required for raw material and for each component and part. It may also include allowances for expected losses such as defects; spoilage during processing, and scrap. Some companies may produce multiple types of bills of material. An engineering bill of material will list all the parts required to produce the end products and usually can be matched to detailed engineering drawings. In cases where the final product is comprised of multiple components or systems, a contractor may have an assembly/subassembly bill of material in addition to the consolidated priced bill of material. An assembly/subassembly bill of material is hierarchical and first lists the major assemblies followed by the various levels of subassemblies. It is often referred to as a "Christmas Tree" bill of material because of its pyramidal or Christmas tree shape.

- Changes to estimating system controls were made based on the corrective action plan and provided for a more consistent proposal preparation process and a more effective monitoring of the estimating system. The previous deficiencies should not happen again. Internal audit was also currently assessing the estimating system internal controls including implementation of the corrective action plan.
- Management didn't consider that a significant risk of fraud related to proposal preparation or defective pricing existed. Since so much of their business is repeated manufacturing of the same products, they rely heavily on the knowledge and expertise of program management staff to provide current, accurate and complete data for proposals.
- Management did not have any knowledge of fraud or suspected fraud affecting this proposal or any of the contracts for previous lots.
- Management was unaware of any allegations of fraud or suspected fraud that could affect the negotiation and award of this contract.

In addition, the auditor asked about the proposed material costs.

**Auditor Question: "Please explain why the proposed Lot 4 direct material costs are higher than the Lot 3 actual direct material costs?"**

*Contractor (proposal preparer) Response: "I would need to look into that further before responding. I am very surprised since the program management office provided the detailed cost estimate based on the Lot 3 actuals. Perhaps the difference could be escalation or maybe the redesign."*

Audit Team Brainstorming for Fraud Risk Assessment:

The audit team met to discuss the results of the risk assessment/preliminary audit procedures and to consider the potential fraud risks and/or misstatements associated with the proposal audit. The team brainstormed the following factors indicating potential risk or susceptibility of the proposed cost to fraud or error.

- DCAA had not verified that the contractor had adequately implemented the corrective action plan for the previous significant estimating system deficiencies.
- Previously DCAA questioned costs in other proposal audits.
- Contractor non-compliances with Lot 1 and 2 contractual testing requirements could indicate inclination to cut corners to improve profit margin.
- PCO had concerns that the Lot 4 proposed price was higher than independent government cost estimate.
- The proposal preparer could not explain the increase in direct material costs and should have known that the ATV redesign occurred with Lot 3 not Lot 4.

The team decided to perform the following audit procedure to evaluate the direct material costs.

- Perform a stratified statistical sample on the consolidated priced bill of material<sup>3</sup>. Use a sample size sufficient to address a high risk of misstatements (high expected error rate) which the auditor is unwilling to accept (low tolerable misstatement). Test that the selected material parts' proposed unit prices and quantities verify to the price source documents listed in the proposal. This would be either Lot 3 purchase history or vendor quotes.

#### Results from Audit Procedures:

The auditor performed the planned testing and only identified exceptions related to parts from the proposed engine assembly.

The engine block and pistons were reviewed as part of the high dollar strata, and the auditor was unable to find any purchases for these parts in the Lot 3 engine assembly work breakdown structure actual cost details. The auditor noted from the assembly/subassembly bill of material that the engine block and pistons were major components of the engine assembly. The engine assembly represented 20 percent of the proposed direct materials. The basis of estimate (BOE)<sup>4</sup> stated that the contractor would make the engine assembly in-house as had been done with all previous lots. The proposal included a copy of the contractor's approved make or buy plan<sup>5</sup> for the engine assembly and stated that the plan had been incorporated into the contract. The contractor could not have made the engines for Lot 3 per the make or buy plan without the critical engine blocks and pistons.

#### Expanded Audit Procedures and Results:

The auditor discussed this finding with the supervisor and lead auditor. The auditor suggested comparing the Lot 3 actual costs for the engine assembly work breakdown structure to the Lot 4 proposed costs for the engine assembly work breakdown structure. The team agreed.

The auditor performed the comparison and found that the Lot 4 proposed engine assembly costs were about 25 percent higher than the Lot 3 actual engine assembly costs. The difference was primarily related to the purchased materials.

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<sup>3</sup> In some cases a wide variation between the smallest and largest individual dollar amounts in an audit universe can exist, with most of the amounts being relatively small and only a few amounts being very large. Since a random sample from the entire universe would probably include only a few large (high dollar) items, the reliability of the results would be correspondingly low. To improve sample reliability, auditors can "stratify" the universe into several dollar ranges or strata. Normally, the universe is stratified into a high-dollar stratum (for 100 percent evaluation) and several other strata from which samples are selected for evaluation. Audit effort is concentrated on the high-dollar items where the risk is usually greater. Samples are then statistically selected from each of the other strata.

<sup>4</sup> The basis of estimate is the part of a contractor's proposal that identifies the sources of data and the estimating methods and rationale used in developing the proposed cost estimates. The contractor should include a basis of estimate description for each major cost element or significant sub-cost element.

<sup>5</sup> FAR 15.407-2, Make or Buy Program, specifies a contracting officer's responsibilities for including in the request for proposal (RFP) the requirement for contractors to submit make or buy plans. Contracting officers then evaluate and negotiate proposed make-or-buy programs as soon as practicable after their receipt and before the contract is awarded. The approved programs can then be incorporated into the contract. The FAR clause also specifies all the items that should be included in the contractor's proposed make or buy plan.

The team reconvened to discuss why there would be this great a difference. The lead auditor suggested that the contractor may not have used the Lot 3 actuals to price all the components of the engine assembly as was stated in the proposal. After the discussion, the team concluded that the auditor needed to review some transactions from the Lot 3 actual purchased materials account and compare the prices paid to the Lot 4 bills of materials. The auditor performed the testing as follows:

Expanded Audit Procedure: Identified material purchases greater than \$100,000 and reviewed the related invoices. Verified that the vendor, material part, quantities and unit prices matched what was on the Lot 4 assembly/subassembly and engineering bills of material.

Result: The auditor identified that most of the purchased material transactions were invoices from Engines Are Us, Inc. for purchases of Engine number XXA. This part was not listed as part of the engine assembly on either the assembly or engineering bills of material. Engines Are Us, Inc. was also not a listed vendor on the consolidated priced bill of material.

After another brainstorming discussion, the team decided that the auditor should:

- review the request for proposals (RFP) for Lots 1-4 for information about the engine assembly;
- review the vendor file for Engines Are Us, Inc.; and
- contact the PCO to discuss the audit results to date and find out what knowledge the PCO and the buying command had about the engines included in the finished and delivered ATVs.

Expanded Audit Procedure: Reviewed the Lots 1-4 request for proposals.

Result: The RFPs for Lots 1-4 specified the requirements and standards for the engine assembly. Lots 2 and 3 RFPs stated the contractor would produce the engine in-house. The RFPs referenced the contractor's approved make or buy plan that was submitted with the Lot 1 proposal. The make or buy plan had been incorporated into the ATV program. The auditor also noted that the RFPs for Lots 2-4 included the FAR clause 52.215-9, Changes or Additions to Make-or-Buy Program.<sup>6</sup>

Expanded Audit Procedure: Requested and reviewed the vendor file for Engines Are Us, Inc. to determine what purchase orders the contractor had issued to Engines Are Us, Inc.

Result: The vendor/subcontract files for Engines Are Us, Inc. included a purchase order to provide engine part number XXA for use in ATVs for the Army. The purchase order was issued 2 months after the Lot 3 contract was signed. Email correspondence in the file between the contractor program manager for the ATV program and the vendor subcontract manager discussed how Engines Are Us, Inc. could easily make the ATV engine at the required contract specifications for about 25% less. The requirements and standards for the engine were the same as those in the RFPs for Lots 1-4. The unit cost of the purchased engine was about 25 percent less than the proposed unit price for the engine assembly in the Lot 4 proposal.

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<sup>6</sup> FAR 52.215-9 states that the contractor shall perform in accordance with the make-or-buy program incorporated into a given contract. If the Contractor proposes to change the program, the Contractor is required to provide reasonable advance notification of the proposed change. The contractor must (1) notify the Contracting Officer in writing, and (2) submit justification in sufficient detail to permit evaluation. This would include changes in the place of performance of any "make" items in the program.

Expanded Audit Procedure: Discussed with the PCO audit results to date and the inspection/delivery procedures for ATVs.

Result: The PCO stated that to their knowledge, the receiving officer's procedures included verifying the major components of the vehicles and running a series of checklist tests on these items to make sure they functioned as intended. The PCO stated they would contact the Contracting Officer's Technical Representative (COTR) for more information about what specifically the COTR inspects or tests with respect to the engine. The PCO would also ask the COTR whether they had noticed anything specific regarding the engines.

Further Actions:

The auditor, lead auditor and supervisor discussed the findings. The audit evidence supported that the contractor had switched from making the engine assembly to buying the engines from Engines Are Us, Inc. The change from make to buy occurred during the Lot 3 production, but could have been in process during the Lot 3 proposal preparation and negotiation processes. The contractor did not inform the Government of the change as required. In addition, the contractor's cost estimate for the Lot 4 proposal stated that the contractor was still making the engine. Thus the engine cost was overstated in both the Lot 3 contract price and the proposed Lot 4 price. The team decided on the following actions related to audit findings.

- Even though the proposal audit was still in-process, draft a fraud referral for the engine assembly irregularities identified during the transaction testing of the direct material costs
- Contact a local DoD criminal investigator and brief them on the identified irregularities and forthcoming fraud referral. Inform the investigator that DCAA told the PCO about the change in Lot 3 to buying the engine rather than making the engine assembly. The PCO was told so the PCO and buying command could consider whether the change impacted contract requirements for the engine assembly or raised potential safety concerns. Also inform the investigator that DCAA would issue the audit report on the Lot 4 proposal and would be performing a defective pricing audit for the Lot 3 contract unless informed in writing to discontinue that audit effort.
- Establish a defective pricing audit for the Lot 3 contract.
- Draft an audit lead for future proposals and defective pricing audits regarding the make or buy issues identified in the testing of the engine assembly.
- Discuss with the PCO and ACO the audit exceptions related to the engine assembly and the way forward for the proposal audit.
- Recommend that the ACO request DCAA to perform a follow-up estimating system audit as soon as possible.
- Discuss with the audit office's defective pricing technical specialist whether an analysis of the contractor's other DoD contracts involving make or buy decisions should be done to determine if other defective pricing audits should be performed.

### **General Comments/Lessons Learned:**

A decision to make rather than buy an item might be in the contractor's best interests, but might not be a best value for the Government. Switching from make to buy or vice versa, especially without informing the Government, should be considered a fraud indicator. Another indicator is if the contractor experiences lower costs from the change in methods. A pattern of switching is a more definitive fraud indicator. From a defective pricing perspective, the contractor may have failed to disclose a planned change prior to negotiation or may have a history of switching after negotiations. Other indicators involving make or buy decisions include:

- simultaneous actions involving both making and buying the same parts;
- extensive time lapse between proposal submission date and actual contract date allowing for changes to make or buy decisions; and
- duplicate charges in a make cost estimate involving intracompany procurement for items such as product warranty, engineering or field servicing.

The contractor should have a defined make or buy program supported by robust internal controls to preclude inconsistent application of make or buy decision making and the opportunity to manipulate the decision making resulting in increased profits.

### **FRAUD INDICATORS**

- **Pattern of switching from make to buy or vice versa without proper notification to the Government.**
- **Misrepresentation of the monetary effect of switching from make to buy or vice versa.**
- **Documented lower vendor price and still proposing as a make item.**
- **Indications of altered supporting document(s).**
- **Inadequate internal controls over make or buy decisions and/or continued failure to correct known system deficiencies.**