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SUBCONTRACT MANAGEMENT BY UNITED SPACE ALLIANCE UNDER THE SPACE FLIGHT OPERATIONS CONTRACT

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Final report released by:

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Acronyms

CAP	Company Acquisition Procedures
CPSR	Contractor Purchasing System Review
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
GAO	Government Accountability Office
JPL	Jet Propulsion Laboratory
OIG	Office of Inspector General
SFOC	Space Flight Operations Contract
SPOC	Shuttle Program Operations Contract
TINA	Truth in Negotiations Act
TT&E	Test, Teardown, and Evaluation
USA	United Space Alliance

IN BRIEF

SUBCONTRACT MANAGEMENT BY UNITED SPACE ALLIANCE UNDER THE SPACE FLIGHT OPERATIONS CONTRACT

The Issue

NASA's Space Flight Operations Contract (SFOC) with United Space Alliance (USA) provides for the operation of Space Shuttle missions. Valued at $16.9 billion, it is currently NASA's largest contract. USA subcontract actions were valued at $4.6 billion from October 1996 (inception of the contract) to September 30, 2004 (selection of our audit sample). We evaluated USA's policies and procedures for awarding and administrating subcontracts, specifically whether USA adhered to competition requirements and took adequate actions to ensure that subcontracts were awarded at fair and reasonable prices.

Our Approach

We reviewed subcontract actions awarded under SFOC during fiscal year 2004. We also reviewed USA and NASA oversight responsibilities, and how those responsibilities were conducted, to determine whether they were in compliance with applicable regulations, policies, and procedures. Because validating the technical effectiveness of USA's quality assurance surveillance[1] program was outside the scope of this audit, we limited our review to determining whether surveillance requirements were incorporated into the subcontracts, followed, and documented. We performed audit work at USA offices in Houston[2] and at Kennedy Space Center. See Appendix A for details of the audit's scope and methodology, our review of internal controls, and prior OIG coverage of this issue.

Our Results

We found that USA's procedures and controls for promoting competition for subcontract awards were adequate. We also found that, for the limited sample reviewed, USA quality assurance surveillance of subcontractors complied with company acquisition procedures. In addition, we found that NASA personnel generally performed their subcontracting-

[1] Quality assurance surveillance is a function of contract administration that involves using a variety of insight and oversight methods to gauge contractor performance. The extent of quality assurance surveillance is based on risks associated with contract requirements.

[2] USA's Houston offices are not located on-site at the Johnson Space Center.

related oversight responsibilities effectively and in compliance with procurement regulations and policies.

However, our review disclosed deficiencies in USA's pricing determinations for some subcontract actions. For example, our review of 87 subcontract actions (total value approximately $700 million) identified inadequate pricing determinations for 13 subcontract actions (total value approximately $40 million). Inadequate pricing determinations resulted in USA incurring additional costs, which were passed through to NASA under the SFOC.

We also identified that USA had not timely definitized a major subcontract action that increased the risk of additional, unanticipated cost growth that could have been passed through to NASA (see Appendix F).

Management Action

We made four recommendations to the NASA SFOC contracting officer. We recommended that the contracting officer (1) review pricing determinations for the 13 subcontract actions we questioned (identified in Table 1) and determine whether to disallow costs based on deficient pricing determinations; (2) require USA to submit a corrective action plan for improving pricing determinations and supporting documentation; (3) review future pricing determinations under USA's partnering process to ensure that they were performed and documented in accordance with requirements identified in USA's Company Acquisition Procedures (CAP); and (4) make a written determination regarding the propriety of the provision in USA's CAP 6.310 stating that "all data agreed to during the partnering process is considered to be 'information other than cost or pricing data' in accordance with FAR Part 15." The written determination should specifically address whether this USA CAP provision violates, or is otherwise inconsistent with, the intent of the Truth in Negotiations Act.

In response to the draft report, Johnson concurred with three of the four recommendations (Recommendations 1, 3, and 4). Comments on Recommendations 1 and 4 were responsive; therefore, those recommendations are closed. While Johnson concurred with Recommendation 3, Johnson's corrective actions are not fully responsive to the recommendation. Further, Johnson nonconcurred with Recommendation 2 and the comments were nonresponsive to the intent of the recommendation. Therefore, we request that Johnson reconsider its positions regarding Recommendations 2 and 3 and provide additional comments. The additional comments should address actions to correct the deficiencies, as detailed in our evaluation of management's response to the recommendations.

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INTRODUCTION

Background

In 1996, NASA consolidated Space Shuttle program operations under a single prime contractor, the United Space Alliance (USA). At the time, USA was made up of the two largest Shuttle contractors—Rockwell and Lockheed Martin. Prior to the formation of USA, Rockwell held the Space Operations Contract for flight support and Lockheed Martin held the Shuttle Processing Contract for ground operations. Rockwell's aerospace and defense businesses were subsequently purchased by The Boeing Company.

In October 1996, NASA awarded a noncompetitive contract (Space Flight Operations Contract [SFOC], NAS9-20000) to USA. As the prime contractor, USA is responsible for ensuring that Shuttle missions under the SFOC are successfully accomplished. SFOC covers mission operations performed at USA Houston and USA Kennedy (USA offices at Kennedy Space Center). USA Houston mission operations include mission control, astronaut training, flight design, and planning. USA Kennedy mission operations include flight preparation, ground operations, launch, return, and servicing the shuttle vehicles after landing.

The SFOC contracting officer is responsible for all aspects of contract administration except for those functions delegated by NASA to the Defense Contract Audit Agency (DCAA) or the Defense Contract Management Agency (DCMA). DCAA's delegated responsibilities include providing contract audit services (for example, incurred cost audits and verifications of contractor-proposed direct and indirect rates) in connection with the negotiation and administration of contract and subcontract actions. DCMA's delegated responsibilities include reviewing subcontract packages, advising the contracting officer of significant activities and issues, and performing the Contractor Purchasing System Review (CPSR) of USA.

SFOC is a cost-plus-award-fee[3] contract. It had a 6-year base period of performance from October 1996 through September 2002. NASA subsequently exercised contract options to extend the period of performance though September 2006.[4] The original contract value for the base period was $6.949 billion. As of December 8, 2005, the total contract value was $16.962 billion.

[3] A cost-plus-award-fee contract is a cost-reimbursement contract that provides for a fee consisting of a base amount fixed at inception of the contract and an award amount that the contractor may earn in whole or in part during performance.

[4] The Space Shuttle Procurement Office has been working on the follow-on Shuttle Program Operations Contract (SPOC) that will take the Orbiter to the end of the Shuttle Program, which is set to expire in 2010. The SPOC is scheduled to be awarded no later than September 30, 2006.

Objectives

Our overall objective was to determine whether USA effectively managed subcontracts under the SFOC and complied with its documented purchasing system and all contract requirements. To meet the objective, we evaluated USA policies, procedures, and controls for awarding and administering major subcontracts. The specific objectives were as follows:

- Evaluate procedures and controls used by USA to promote maximum competition for subcontract awards and ensuring that subcontracts were awarded at a fair and reasonable cost or price.
- Determine whether USA effectively conducted oversight and quality assurance surveillance of its subcontractors in compliance with its own policies and procedures.
- Determine whether NASA performed oversight of USA's subcontracting efforts effectively and in compliance with all applicable Federal, Agency, and Center procurement regulations and policies.

For aspects of all three objectives, we found subcontract management by USA under SFOC to be effective: procedures and controls to promote maximum competition for subcontract awards were sufficient; on the basis of our limited sample, USA quality assurance surveillance of subcontractors complied with company acquisition procedures; and NASA personnel generally performed their subcontracting-related oversight responsibilities effectively and in compliance with procurement regulations and policies. For some of the subcontract actions we reviewed, we found inadequate pricing determinations. The findings identified in this report relate to USA's procedures and controls for ensuring that subcontracts were awarded at a fair and reasonable cost or price. See Appendix A for details of the audit's scope and methodology, our review of internal controls, and prior coverage of this issue.

In Other Matters

To meet urgent procurement requirements, it is sometimes necessary to issue a contract action prior to negotiating the associated cost or price. However, these actions, referred to as undefinitized contract actions, should only be used on an exception basis because they represent increased risk for unanticipated cost growth. A Government Accountability Office (GAO) report[5] highlighted NASA's use of undefinitzed contract

[5] GAO. "Major Management Challenges and Program Risks: National Aeronautics and Space Administration," GAO-01-258, January 2001.

actions stating that "relying on unnegotiated changes as a way of doing business is risky because it increases the potential for additional unanticipated cost growth."

In August 2004, USA issued a modification to its cost-plus-award-fee subcontract with Boeing to extend the period of performance through September 2006. The modification was issued as a unilateral undefinitized contract action but was not definitized until more than a year later. USA's delay in definitizing the Boeing subcontract modification increased the risk of additional, unanticipated cost growth because without advanced negotiation of the costs, USA is obligated to accept Boeing's actual incurred costs. USA's delay also reduced its ability to accurately evaluate Boeing's cost control performance (and applicable award fee). These costs are ultimately passed through to NASA. See Appendix F for a detailed description of this issue.

INADEQUATE PRICING DETERMINATIONS MADE FOR SOME SUBCONTRACT ACTIONS

For 13 of the 87 (15 percent) subcontract actions we reviewed, valued at $39,969,573, or 6 percent[6] of the total universe value of $700,449,513, we found that USA did not take sufficient measures, in accordance with its internal Company Acquisition Procedures (CAP), to be able to make adequate pricing determinations. In one instance, for a contract action valued at $1.7 million, a price determination was made on the basis of an arrangement negotiated in 1997 between USA and the company. However, at the time the action was awarded in February 2004, no analysis was done to determine the effect of possible improvements in efficiencies, processes, or techniques on related materials, labor, or other costs despite that CAP requires analysts to perform relevant analyses in such cases. In another instance of a USA cost analyst not complying with USA CAP regulations, a contract value and associated fee could have been reduced by nearly $2 million if USA had applied DCAA-approved direct labor and indirect rates. As a result of USA's noncompliance with its own internal procurement requirements, NASA has limited assurance that subcontract actions were awarded at fair and reasonable prices, and USA may have incurred additional subcontract costs that were passed on to NASA through the prime contract—SFOC. See Appendix B for sample universe.

Inadequate Pricing Determinations Under USA's Subcontracting Processes

USA uses two distinct processes in subcontracting for goods and services: "negotiations" and "partnering." USA's negotiations process—applicable in either a competitive or sole-source environment—involves an exchange of offers and counter-offers, which may include bargaining[7] between USA and its subcontractors. In USA's partnering process, the entire acquisition process or portions of the acquisition process are jointly developed and documented by representatives of USA, the subcontractor, and, as appropriate, the customer. Six of the 13 actions for which we found inadequate pricing determinations were awarded under USA's "negotiations" subcontracting process; the other seven actions were awarded under USA's "partnering" subcontracting process (see Table 1).

[6] This statistic is skewed because one action in the sample universe (Boeing subcontract 1970483303, modification 1367) alone was valued at $546 million. Excluding the value of the Boeing action, the value of the actions with inadequate pricing determinations actually constitutes 26 percent of the total universe value.

[7] Bargaining includes persuasion, alteration of assumptions and positions, give-and-take, and may apply to price, schedule, technical requirements, type of contract, or other terms of a proposed contract.

Table 1. Subcontract Actions with Inadequate Pricing Determinations

Control Number	Subcontract Action	Vendor Name	Value	Process Used to Determine Price
1	6000096895, change order 4	Aerojet-General Corporation	$ 5,615	Negotiations
2	2970483304, change order 51	Barrios Technology, Ltd.	28,757,515	Partnering
3	6000070133, change order 22	Ellanef Manufacturing Corporation	99,904	Negotiations
4	6000076615, change order 20	Honeywell Incorporated, Space Systems	2,938,438	Partnering
5	6000076615, change order 34	Honeywell Incorporated, Space Systems	20,000	Partnering
6	P000047652, change order 31	Kearfott Guidance and Navigation Corporation	1,721,171	Negotiations
7	6000076275, change order 3	L-3 Communications Aydin Corporation	19,860	Negotiations
8	6000078379, change order 5	L-3 Communications Corporation	107,000	Partnering
9	6000076612, change order 7	MRI Technologies	1,668,706	Partnering
10	6000078859, change order 4	Pacific Scientific	10,155	Negotiations
11	6000071446, change order 12	Raytheon Technical Services Company	65,538	Negotiations
12	6000092309, change order 1	SDB Engineers and Constructors, Incorporated	2,253,525	Partnering
13	6000092309, change order 3	SDB Engineers and Constructors, Incorporated	2,302,146	Partnering
	Total		$39,969,573	

Inadequate Pricing Determinations Under USA's "Negotiations" Process. Six of the 13 actions, valued at $1,922,243, that had deficient pricing determinations were awarded under USA's negotiations process. USA's processes and procedures for conducting and documenting price negotiations with subcontractors are described in CAP Section 6.210. For the price negotiation process to be effective, acquisition personnel must conduct adequate cost and price analyses of subcontractor proposals. USA's procedures and requirements for conducting cost and price analyses are described in Sections 5.725 and 5.810, respectively. See Appendix C for pertinent excerpts of USA CAP cost and price analysis requirements.

Cost analysis involves the review and evaluation of the cost elements—and profit—in an offeror's proposal and a determination of whether the proposed costs are fair and reasonable. CAP Section 5.725 requires that a cost analysis be performed for subcontract actions (new awards, as well as modifications to existing awards) valued at $550,000 or more when cost or pricing data is required. (See Appendix C for circumstances when cost or pricing data is not required.) USA's CAP states that cost analysis can also be used for subcontract actions valued at less than $550,000 if price analysis alone is not sufficient to determine whether a proposed price is fair and reasonable.

Price analysis, on the other hand, involves examining a proposed price without evaluating its separate cost elements and proposed profit. Examples of price analysis techniques used in analyzing proposed prices include comparison of prices resulting from adequate price competition, comparison of proposed prices to prices paid for the same or similar items, and/or comparison of proposed prices to established catalog or market prices. Unlike cost analysis, price analysis does not involve evaluating separate cost elements and

proposed profit. Price analysis is generally used for procurements valued at less than $550,000 and when cost analysis using cost or pricing data is not required by USA's CAP.

In performing cost and price analyses for six subcontractor proposals, USA did not adequately determine whether proposed direct and indirect costs were allowable, allocable, and reasonable in accordance with its CAP. USA CAP 5.725 requires a DCAA audit of the subcontractor's rates if current information (within 12 months preceding the proposal) is not available as well as an analysis of the offeror's proposed skill mix, number of direct labor hours, and materials and other direct costs. CAP 5.810 requires application of appropriate price analysis techniques for determining whether the total proposed price is fair and reasonable.

We found that these and other cost and price analysis requirements were not always followed. For example, in one instance, with regard to CAP 5.810, the USA buyer accepted a subcontractor's proposed pricing for a contract without using appropriate price index adjustments or any other applicable price analysis techniques even though comparison with a previous contract revealed that unit prices proposed in 2004—for the same products—were, in some instances, 900 percent higher than the subcontractor's 1984 prices. We also found that USA cost analysts generally relied on in-house expertise rather than request DCAA assistance to verify the accuracy of proposed rates, as required by CAP 5.725. However, in one instance when DCAA's assistance was both requested and provided with regard to the appropriateness of a subcontractor's proposed rates, the cost analysts disregarded DCAA's recommendations and accepted the offeror's higher proposed rates without adequate justification. USA's acceptance of the subcontractors' proposed higher rates caused USA to pay higher costs than necessary, which were then passed on to NASA through the prime contract. See Appendix D for more detailed examples of subcontract actions with inadequate pricing determinations made under USA's negotiations process.

Inadequate Pricing Determinations Under USA's "Partnering" Process. Seven of the 13 actions, valued at $38,047,330, that had deficient pricing determinations were awarded under USA's partnering process. USA's policies and procedures for conducting and documenting subcontract pricing determinations through partnering are set forth in CAP Section 6.310 that describes the partnering process as follows:

> Partnering is a process which results in the mutual agreement of independent organizations to achieve a common goal, while recognizing and respecting that [the] group has unique responsibilities and obligations to their organizations. The commitment of the participants is to trust each member will work earnestly and with integrity to accomplish the goal for the benefit of the whole.
>
> Partnering is a technique in which the entire acquisition process or portions of the acquisition process, which may include requirement identification, requirement definition, resource estimating, cost estimating, terms and conditions, negotiation, and definitization

> are jointly developed and documented by representatives of the Company, the subcontractor, and, as appropriate, the customer.

According to a USA document on partnering,[8] the intent of the partnering process is to change the adversarial landscape to a collaborative one and to streamline the subcontracting process. Accordingly, certain processes and documentation generally considered to be standard requirements that apply under USA's "negotiations" process do not pertain to the "partnering" process. For example, under the partnering process a formal solicitation package is not always created; rather, the CAP requires "documentation soliciting the subcontractor's attendance and participation in the partnering process as well as a high-level definition of the requirement." Signed negotiation plans also are not required under the partnering process. Furthermore, the CAP states that "all data agreed to during the partnering process is considered to be 'information other than cost or pricing data' in accordance with FAR Part 15." Therefore, it appears that this data would not be subject to the same Truth in Negotiations Act (TINA) requirements that apply to *certified* cost and pricing data required under the "negotiations" process. However, USA's basis for summarily classifying all partnering process data as "information other than cost or pricing data," thereby bypassing TINA requirements designed to ensure the integrity of cost or pricing data relied upon in making pricing determinations, is questionable. The FAR Part 15 requirements for obtaining certified cost or pricing data vary depending on the specific factors of a particular contract action (for example, the degree of price competition, the dollar value, whether the items being procured are classified as "commercial" items, whether the contractor has an approved purchasing system). However, USA's CAP provision appears to summarily dismiss the FAR cost or pricing data criteria solely on the basis that the data was obtained under USA's partnering process.

Notwithstanding the streamlined procedures of the partnering process, USA CAP 6.310 does require USA buyers to have a "planned negotiation strategy" and to generate a negotiation memorandum to document "the process, product, and any rates and factors negotiations or unusual circumstances." CAP 6.310 refers back to CAP 6.210 for specific negotiation documentation requirements. CAP 6.210 describes several types of information to be documented, including

- identification, explanation, and justification of differences between negotiation objectives and results;
- rationale for the profit or fee objective and for the profit or fee negotiated; and
- key negotiation events, such as opening offer, counter offers, and new information introduced during negotiations.

[8] "SFOC Partnering Process, Procurement and Subcontracts," August 31, 2005.

The subcontract files under USA's partnering process that we reviewed lacked sufficient documentation to allow us to adequately evaluate the rationale USA used to arrive at the final totals for direct labor hours, quantities of material, and other direct costs used for cost analysis. Moreover, USA did not take maximum advantage of the expertise of Government DCAA auditors prior to negotiating final prices. For example, in an action involving Mathematical Research Inc. (MRI) Technologies (Purchase Order 6000076612, Change Order 7, dated September 17, 2004), the subcontract administrator did not follow the recommendation made by the cost analyst to include a contract provision allowing for a downward adjustment, based on a (DCAA) post-audit on this fixed-price-labor-hour contract, in the proposed billing rate. Also, a fixed fee of 10 percent of the labor rate (direct labor and associated indirect rates) was calculated on this contract. During interviews with the USA buyers, we learned that negotiations under the partnering process are verbal and conducted across the table. We were told that upon reaching an agreement on technical content and associated resources, representatives from USA, the subcontractor, and NASA (when present) sign a document called the "decision package," which documents the final agreed-upon direct labor hours, material, and other resources. However, the decision package does not address the elements listed in CAP 6.210 and, therefore, provides little or no visibility into USA's rationale in arriving at its pricing determinations for these actions. See Appendix E for specific examples of subcontract actions with inadequate pricing determinations made under USA's partnering process.

Reasons Why Some Pricing Determinations Under USA's "Negotiations" and "Partnering" Processes Were Inadequate

Pricing determinations using USA's negotiations and partnering processes were inadequate for two reasons. First, the buyers' lack of familiarity with internal USA CAP requirements pertaining to cost and price analysis resulted in the buyers making inadequate pricing determinations. When we asked why they had not followed CAP requirements in making pricing determinations under both the negotiations and partnering processes, their response was that they thought they had followed CAP requirements. Second, USA procurement personnel misinterpreted the USA CAP requirement to document how they arrived at final pricing determinations when using USA's partnering process. Several USA buyers stated that the partnering process required only that they document the final results of pricing determinations (that is, the final negotiated resources such as direct labor hours, materials, and other direct costs) in the decision package and not necessarily how they arrived at these numbers. This is contrary to the written documentation requirements in USA's CAP 6.210 and is attributable to a lack of adequate training on internal CAP requirements. USA has a formal procurement training plan for their procurement/subcontracting personnel that is tailored to employees' job series and experience levels. While the plan appears to be comprehensive and covers a wide variety of procurement/subcontracting topics, it does not specifically include training on USA's internal CAP procedural and documentation requirements.

USA's Noncompliance with Its Internal Procurement Requirements Could Cause Unnecessary Costs to NASA

At $4.6 billion, USA subcontracting represents a significant percentage of the overall SFOC value. In keeping with Federal and generally well-established procurement principles, USA's CAP requirements provide guidance proposed to ensure contracts are awarded and managed efficiently and effectively. Our findings of noncompliance with specified requirements, on the basis of the small sample of USA subcontracts we reviewed, suggests NASA incurred, through USA subcontracts, added costs. We cannot quantify the additional costs in all instances because we cannot retroactively determine what the prices should have been due to the limited availability of information applicable to the pricing actions.

Recommendations, Management's Response, and Evaluation of Management's Response

Recommendation 1. The NASA SFOC contracting officer should review the specific circumstances related to the USA buyers' pricing determinations for the 13 subcontract actions in question (identified in Table 1) and determine whether NASA should disallow any costs based on USA's deficient pricing determinations and noncompliance with its CAP.

Management's Response. Johnson concurred, stating they reviewed the 13 subcontract actions identified in the report and determined that all costs are allowable.

Evaluation of Management's Response. Johnson's actions are responsive to the recommendation. The recommendation is closed.

Recommendation 2. The NASA SFOC contracting officer should require USA to submit a corrective action plan within 60 days from issuance of this report addressing measures USA will take to ensure adequate pricing determinations and proper documentation supporting its pricing determinations for future subcontract actions. At a minimum, the plan should include a description of training initiatives, CAP revisions, and other necessary measures, as well as a schedule for completion.

Management's Response. Johnson nonconcurred with the recommendation, stating "as evidenced by three prior CPSRs and the review discussed under Recommendation 1, these isolated instances of lacking adequate cost and pricing determinations are considered as minor and not representative of any serious risk to the Government and not warranted of a formal recommendation."

Evaluation of Management's Response. This recommendation remains unresolved. In an effort to try to resolve this issue, we had several follow-up discussions with Johnson procurement personnel to elaborate on our findings and the intent of our recommendation. Based on these discussions, Johnson procurement personnel agreed to conduct additional analyses of the contract actions in question. However, the Johnson procurement office eventually provided a response that either reiterated their original positions with minimal explanation or provided additional explanatory information that was unsupported by USA's procurement files for the particular actions.

On July 13, 2006, Johnson submitted an e-mail amending their initial response to Recommendation 2. In the e-mail, Johnson changed its response from "non-concur" to "partially concur" and stated that "there were isolated instances where the files lacked adequate cost and pricing determinations that were determined to be minor and not representative of any serious risk to the Government. [Johnson] will discuss with USA the need to ensure that as they do refresher training for their procurement personnel that this topic is covered." However, Johnson's proposed corrective action is nonresponsive to the intent of the recommendation.

The deficiencies identified are serious, and meaningful corrective action should be taken to address them. Although discussing with USA the need to cover cost and pricing determinations as part of USA's future refresher training is prudent, this is not, in and of itself, sufficient to correct the conditions leading to the deficiencies identified. This proposed action is insufficient because it does not describe the training agenda to be conducted for USA procurement personnel or provide a schedule for completing the training. Further, the proposed action does not address other actions necessary to correct the deficiencies identified. For example, our field work, which included interviews with USA procurement personnel, disclosed that USA procurement personnel misinterpreted USA's CAP provisions for conducting and documenting cost and price analyses in certain instances. Therefore, we believe that corrective action should also address necessary CAP revisions to clarify requirements for conducting and documenting cost and price analyses.

We request that Johnson reconsider its position and provide additional comments regarding this recommendation for requiring USA to submit a substantive corrective action plan, including a schedule for completion, addressing the deficiencies identified. This recommendation remains unresolved and open for reporting purposes.

Recommendation 3. The NASA SFOC contracting officer should determine a periodic schedule for sampling and reviewing USA subcontract pricing determinations under the partnering process to ensure that the pricing determinations were properly performed and documented in accordance with the requirements identified in USA's CAP.

Management's Response. Johnson concurred, stating that as of May 19, 2006, the SFOC contracting officer delegated this function to DCMA to be performed annually.

Evaluation of Management's Response. Johnson's comments are not fully responsive to the intent of the recommendation. We obtained documentation evidencing that the delegation was made by Johnson, accepted by DCMA, and scheduled as part of the CPSR that was conducted during the period July 17, 2006, through August 1, 2006. However, we noted that the resultant CPSR report stated that the review team was not able to assess whether partnering was separate from price negotiations because the sample did not include any "partnered" files. The report also stated that future reviews will be conducted annually. We request that Johnson provide additional comments regarding actions that it will take to ensure that future CPSR reviews include "partnered" files. This recommendation will remain open for reporting purposes.

Recommendation 4. The NASA SFOC contracting officer, in coordination with DCMA as necessary, should assess and make a written determination regarding the propriety of the provision in USA's CAP 6.310 stating that "all data agreed to during the partnering process is considered to be 'information other than cost or pricing data' in accordance with FAR Part 15." The written determination should specifically address the overarching nature of whether this USA CAP provision violates, or is otherwise inconsistent with, the intent of TINA and, if so, state what action the Agency will take to address the issue.

Management's Response. Johnson concurred and assessed the USA CAP provision in question, concluding that the provision "does not summarily classify all partnering process data as 'information other than cost or pricing data,'" and does not violate the intent of TINA. In its response, Johnson also opined that "it may be that the concern expressed in the recommendation stems from a misunderstanding of the partnering process and exactly what type of data is agreed to during the process."

Evaluation of Management's Response. While we fully understand the intent of the partnering process (that is, that it is intended to be limited to addressing the joint development of resources [for example, number of direct labor hours, types and quantities of materials, and travel required] but not the pricing of those jointly developed resources), our concern stems from USA's misapplication of the process in some instances. In several cases, we found that the USA buyers were not using the partnering process as intended (or as described in USA's CAP) because they used the process to agree to <u>pricing</u> for partnered resources such as materials and other direct costs. This situation was evident in at least four of the seven subcontract actions identified under partnering. Although Johnson reviewed these actions and did not identify any that violated the intent of TINA, our concern is that future misapplication of the partnering process could lead to TINA violations. We believe that the training of USA procurement personnel, pursuant to Recommendation 2, would also serve to

reduce NASA's vulnerability to additional instances of USA misusing the partnering process. Nevertheless, since USA assessed the CAP provision in question and concluded that the provision itself is not problematic, this recommendation is closed.

APPENDIX A

Scope and Methodology

We performed the audit at USA Houston (Houston, Texas) and USA Kennedy Space Center (Kennedy Space Center, Cape Canaveral, Florida). We statistically sampled and reviewed 87 subcontract actions awarded by USA under the SFOC contract for fiscal year 2004.

We reviewed pertinent Federal, NASA, and USA company policies and procedures pertaining to subcontract award and administration. For each subcontract action sampled, we reviewed pertinent contract file documentation.

Quality Assurance Surveillance and Oversight. To make our determination, we reviewed and evaluated USA policies and procedures for subcontract oversight and surveillance. We also selected a sample of subcontract actions and reviewed the subcontract file documentation for compliance with USA quality assurance requirements. Additionally, we interviewed NASA's SFOC contracting officer to gain an understanding of NASA's delegation of performance oversight to DCMA and NASA's oversight of DCMA's efforts. We also reviewed surveillance and oversight-related documents and reports.

Pricing Determinations. Our review focused on whether the prime contractor (USA) followed adequate pricing determination procedures to ensure that costs or prices at which subcontracts were awarded were fair and reasonable. Specifically, we reviewed USA's analysis of the following pricing factors, as applicable in their CAP 5.725:

- the skill mix and appropriateness of direct labor hours (with technical input);
- each task proposed for each cost element;
- direct material costs;
- other direct costs such as travel, subsistence, field service, computer time, start up, packaging, and transportation;
- special tooling and test equipment;
- direct labor rates;
- overhead rates (for example, engineering, manufacturing, material);
- general and administrative (G&A) rates;

- Facilities Capital Cost of Money; and
- rationale for and appropriateness of profit or fee.

We performed this audit from February 2005 through October 2005 in accordance with generally accepted government auditing standards.

Sample Selection. For evaluating the adequacy of USA's awards with respect to pricing determinations and noncompetitive justifications, USA provided a list of 816 award actions made from October 1, 2003, through September 31, 2004. This list included awards and administrative actions that did not increase subcontract value (for example, a change in period of performance or other no-cost changes). (Note that USA's system software did have the capability to distinguish new awards from all other actions.) From the list of 816, we screened and excluded the obvious administrative actions and duplicate entries. This screening process led to a universe of 621 actions.

From the 621 actions, we selected and reviewed a sample of 87 actions.[9] Our sample selection and evaluation process considered the possibility that the sample award actions may also consist of administrative actions. (Accordingly, we did not perform further audit tests on these administrative actions.) Otherwise, for each award action that resulted in an increase or decrease in subcontract value, we evaluated it for adequacy of price determination and noncompetitive justification in accordance with the criteria set forth in the Methodology section.

Total absolute value of the 621 actions was $777 million. For sampling purposes, the universe was stratified into high-dollar actions (more than $1.46 million) and low-dollar actions (less than $1.46 million). The 87 actions sampled consisted of 37 high-dollar actions totaling $730 million (approximately 95 percent of the total dollars) and 50 randomly selected low-dollar actions totaling $47 million.

Use of Computer-Processed Data. To identify the universe of subcontract actions at the two locations, we used the computer-processed data from the USA PeopleSoft System. We compared the subcontract action numbers and dollar values from the system-processed list of the subcontract actions against the values contained in the contract files. Nothing came to our attention that caused us to question the validity of the USA computer-processed data. We determined that the data was sufficiently reliable for the purposes of this report.

Review of Internal Controls

We reviewed internal controls over the award of the subcontract actions at USA Houston and USA Kennedy Space Center. We determined that internal controls were generally

[9] We received DCAA assistance in both preparing the sampling plan and in selecting our sample.

adequate but improvements could be made at each location (see the finding in the main body of the report). Implementing the recommendations in this report will help strengthen internal controls.

Prior Coverage

The NASA Office of Inspector General (OIG) previously issued an audit report relevant to managing subcontractor performance in 1999. That report found that the Jet Propulsion Laboratory (JPL) did not subject its most significant subcontracts to adequate surveillance. Subcontractor data disclosed problems in designing, building, and safeguarding of hardware, inadequate application of workforce, and employee noncompliance with quality system procedures.

> "JPL Management of Subcontractor Technical Performance" (IG-99-054, September 28, 1999)

SUBCONTRACT ACTIONS REVIEWED

We reviewed the following USA subcontract actions at USA Houston and USA Kennedy.

Control Number	Subcontract Action	Date of Action	Vendor Name	Value
1	6000087229, change order 1	October 29, 2003	Advanced Electrical Installations, Inc.	$ 11,219
2	6000103434, change order 1	July 27, 2004	Aerocraft Industries, Incorporated	250
3	6000096895, change order 4	June 8, 2004	Aerojet-General Corporation	5,615
4	6000100512, change order 1	July 6, 2004	Aerojet-General Corporation	114,952
5	6000100512, change order 2	August 2, 2004	Aerojet-General Corporation	2,922,236
6	P000063803, change order 9	January 13, 2004	Arrowhead Products	1,966
7	6000073541, change order 43	April 8, 2004	Arrowhead Products	0
8	6000084872, change order 1	June 7, 2004	Arrowhead Products	9,875,000
9	RR98K0303, change order 36	September 30, 2004	Ball Aerospace and Technologies Corp.	0
10	2970483304, change order 51	September 29, 2004	Barrios Technology, Ltd.	28,757,515
11	1970450176, change order 8	May 11, 2004	Boeing Company, The	(786)
12	1970483303, change order 1330	November 4, 2003	Boeing Company, The	5,655,200
13	1970483303, change order 1331	February 20, 2004	Boeing Company, The	22,150,881
14	1970483303, change order 1336	October 17, 2003	Boeing Company, The	(1)
15	1970483303, change order 1338	January 5, 2004	Boeing Company, The	(3,541,378)
16	1970483303, change order 1339	December 23, 2003	Boeing Company, The	1,535,712
17	1970483303, change order 1346	February 27, 2004	Boeing Company, The	175,095
18	1970483303, change order 1353	June 23, 2004	Boeing Company, The	1,956,742
19	1970483303, change order 1354	June 1, 2004	Boeing Company, The	1,734,342
20	1970483303, change order 1363	August 13, 2004	Boeing Company, The	(13,333,250)
21	1970483303, change order 1366	September 28, 2004	Boeing Company, The	1,687,727
22	1970483303, change order 1367	August 31, 2004	Boeing Company, The	545,944,065
23	2960418651, change order 1	May 10, 2004	Boeing Company, The	(19,107)
24	2960418651, change order 2	September 9, 2004	Boeing Company, The	0
25	PP97K2311, purchase order 6	December 12, 2003	Boeing Company, Rocketdyne Propulsion and Power, The	135,000
26	P000036112, change order 4	April 24, 2004	Britt's Air Conditioning, Incorporated	1,845
27	6000095161, change order 1	February 6, 2004	C & R Electrical Construction	326
28	P000021989, change order 16	October 14, 2003	Chemical Systems	2,796,362
29	P000021989, change order 18	November 11, 2003	Chemical Systems	3,171,000

Control Number	[illegible]	[illegible]	[illegible]	[illegible]
30	P000021989, change order 20	February 23, 2004	Chemical Systems	1,000,000
31	P000021989, change order 21	April 26, 2004	Chemical Systems	1,460,852
32	P000057998, change order 6	June 3, 2004	Corning Incorporated	103,621
33	6000084436, change order 3	August 3, 2004	Ederer, LLC	18,040
34	6000070133, change order 22	June 15, 2004	Ellanef Manufacturing Corporation	99,904
35	6000095223, change order 2	March 16, 2004	Ensign-Bickford	50,904
36	2970483305, change order 40	September 23, 2004	G B Technology, Incorporated	3,695,566
37	6000075114, change order 12	September 22, 2004	G B Technology, Incorporated	2,932,027
38	6000078013, change order 5	September 13, 2004	Georgia Technology Research Corp.	0
39	P000003726, change order 22	July 7, 2004	GHG Corporation	2,600
40	P000065127, change order 21	October 29, 2003	Goodrich Corporation, Aircraft Wheels and Brakes	(13,954)
41	6000097974, change order 1	May 5, 2004	Haller Industries, Incorporated	13,125
42	6000076641, change order 19	October 2, 2003	Hamilton Sundstrand Corporation	1,590,286
43	6000076641, change order 21	November 10, 2003	Hamilton Sundstrand Corporation	1,940,802
44	6000076641, change order 28	March 17, 2004	Hamilton Sundstrand Corporation	2,093,805
45	6000076641, change order 31	May 3, 2004	Hamilton Sundstrand Corporation	1,782,166
46	6000076641, change order 34	June 28, 2004	Hamilton Sundstrand Corporation	1,499,762
47	6000076641, change order 35	August 2, 2004	Hamilton Sundstrand Corporation	3,233,498
48	6000076641, change order 36	August 19, 2004	Hamilton Sundstrand Corporation	1,488,504
49	6000086322, change order 1	February 13, 2004	Heard Construction, Incorporated	23,224
50	2970483307, change order 36	June 30, 2004	Hernandez Engineering Incorporated	375,062
51	P000048975, change order 3	July 14, 2004	Hi-Temp Insulation, Incorporated	(4,876)
52	6000076615, change order 20	October 1, 2003	Honeywell Incorporated Space Systems	2,938,438
53	6000076615, change order 34	May 28, 2004	Honeywell Incorporated Space Systems	20,000
54	6000094921, change order 1	June 28, 2004	Industrial Steel, Incorporated	24,105
55	P000043125, change order 5	April 23, 2004	International Fuel Cell, LLC	15,134,208
56	P000047652, change order 31	February 6, 2004	Kearfott Guidance and Navigation Corp.	1,721,171
57	P000047652, change order 35	June 15, 2004	Kearfott Guidance and Navigation Corp.	11,074
58	6000081394, change order 5	February 23, 2004	KWI Construction, Incorporated	3,594
59	6000076275, change order 3	October 2, 2003	L-3 Communications Aydin Corporation	19,860
60	6000078379, change order 5	September 21, 2004	L-3 Communications Corporation	107,000
61	6000077681, change order 5	May 27, 2004	Labarge, Incorporated	3,665
62	P000064208, change order 5	November 18, 2003	Lockheed Martin Corporation	(151,894)
63	3000080752, change order 98	October 28, 2003	Lockheed Martin Manned Space Systems	0

Control Number	Subcontract Action	Date of Action	Vendor Name	Value
64	6000076820, change order 2	September 30, 2004	Lockheed Martin Manned Space Systems	1,340,000
65	6000076337, change order 22	November 14, 2003	Lockheed Martin Missiles and Fire Control	6,296,728
66	6000076337, change order 39	April 22, 2004	Lockheed Martin Missiles and Fire Control	8,287,000
67	6000076337, change order 46	September 21, 2004	Lockheed Martin Missiles and Fire Control	2,997,977
68	P000066518, change order 15	November 6, 2003	Lockheed Martin Systems Integration	1,870,961
69	RR96K0158, change order 164	September 30, 2004	Lockheed Martin Systems Integration	0
70	6000077191, change order 6	June 18, 2004	Lockheed Martin Systems Integration	90,000
71	6000100570, change order 2	August 17, 2004	ME Global, Incorporated	12,001,084
72	6000070516, change order 13	May 26, 2004	Merrifield Engineering Incorporated	14,500
73	RR97K0249, change order 71	August 31, 2004	Moog Incorporated Aircraft Group	2,656,112
74	6000076612, change order 7	September 17, 2004	MRI Technologies	1,668,706
75	6000096122, change order 1	April 7, 2004	Oneida Construction	15,831
76	6000075543, change order 41	August 27, 2004	Pacific Scientific	35,487
77	6000078859, change order 4	December 15, 2003	Pacific Scientific	10,155
78	6000076805, change order 3	November 20, 2003	Precision Fabricating and Cleaning Company, Incorporated	89,874
79	6000076805, change order 4	April 22, 2004	Precision Fabricating and Cleaning Company, Incorporated	45,560
80	6000076805, change order 5	June 14, 2004	Precision Fabricating and Cleaning Company, Incorporated.	56,805
81	6000071446, change order 12	October 1, 2003	Raytheon Technical Services Company	65,538
82	6000092309, change order 1	January 23, 2004	SDB Engineers and Constructors, Incorporated	2,253,526
83	6000092309, change order 3	March 22, 2004	SDB Engineers and Constructors, Incorporated	2,302,147
84	6000087024, change order 6	June 15, 2004	Thiokol Corporation	3,392,955
85	6000072240, change order 4	September 13, 2004	University of Florida	0
86	6000087211, change order 1	November 11, 2003	Woodson and Associates, Incorporated	3,600
87	6000090520, change order 1	January 5, 2004	Woodson and Associates, Incorporated	300
Total				**$700,449,514**

EXCERPTS OF USA CAP COST AND PRICE ANALYSIS REQUIREMENTS

USA Company Acquisition Procedures (CAPs) address cost analysis in Section 5.725 and price analysis in Section 5.810. The techniques for performing a cost and price analysis are identified below.

Excerpts from CAP 5.725 "Performing a Cost Analysis"

4. Requirement for a Cost Analysis - $550,000 and Above

Except as described below, certified cost of pricing data are required and a cost analysis must be performed for procurement actions of $550,000 or more, including new awards and modifications making price adjustments (plus or minus or a combination of plus and minus) of $550,000 or more.

Exemptions from the requirements for submission of certified cost or pricing data are:

- Adequate price competition;
- Price analysis demonstrates that the proposed price is reasonable in comparison with current or recent prices for the same or similar items, adjusted to reflect changes in market conditions, economic conditions, quantities or terms and conditions under procurement that resulted from adequate competition;
- Prices set by law or regulation;
- Procurements of commercial items;
- Requirement for cost or pricing data has been waived by the Head of the responsible Government Contracting Activity (When available information is sufficient to determine price reasonableness, and none of the other exceptions apply, consideration should be given to requesting a waiver.);
- Exercise of an option at the price established at contract award or initial negotiation; or
- Proposals used solely for overrun funding or interim billing price adjustments.

5. Cost Analysis Permitted - Below $550,000

With procurement actions below $550,000, cost analysis can be used if price analysis alone is not sufficient to find a proposed price to be fair and reasonable. In such cases, the cost information obtained should be no more than is necessary to determine the price to be fair and reasonable. Certified cost or pricing data shall not be requested unless every other means available is first used to ascertain whether a fair and reasonable price can be determined. Certified cost or pricing data shall not be requested for acquisitions of $100,000 or less.

7. Performing a Cost Analysis

Cost analysis will normally be performed by a Cost Analyst, but with Procurement management approval can be done by the Buyer/Subcontract Administrator. In performing a cost analysis, consider whether proposed direct and indirect costs are allowable, allocable, and reasonable, are in accordance with the requirements of the solicitation, and are realistic for the work to be performed. The cost analysis typically includes:

7.1 Reviewing the Instructions for Submitting Cost and Price Proposals When Cost or Pricing Data are Required (Table 15-2 in the FAR, formerly known as Standard Form 1411) or equivalent, and verifying that it is properly executed and consistent with the information provided in the proposal.

7.2 Arranging for an audit of the offeror's rates if current (within the 12 months preceding the proposal) information is not available. If USA has been denied access to the offeror's financial records, send a request to the responsible Government Contracting Officer for an audit by DCAA. Requests for audits by Government auditors will be processed by the Cost Analyst or Procurement Compliance [personnel].

7.3 Evaluating elements of proposed costs including:

a. Skill mix and appropriateness of direct labor hours (with technical input)

b. Each task proposed in each element of cost

c. Direct material costs

d. Other direct costs such as travel, subsistence, field service, computer time, start up, packaging, and transportation

e. Special tooling and test equipment

f. Direct labor rates

g. Overhead rates (for example, engineering, manufacturing, material)

h. General and Administrative (G&A) rates

i. Facilities Capital Cost of Money

j. Rationale for and appropriateness of profit or fee

7.4 Developing fact-finding questions and preparing a written report of the findings and recommendations (and rationale therefore) including information such as:

a. Proposal data reviewed

b. Names and titles of persons participating in evaluations

c. Supplier personnel contacted

d. Adequacy of purchasing procedures

e. Adequacy of the offeror's accounting system (for cost type contracts)

f. The effect of any technical recommendation

Excerpts from CAP 5.810 "Price Analysis"

3. Price Analysis Techniques

Following are examples of techniques that can be used in analyzing proposed prices. These techniques can be used individually or in combinations.

3.1 Adequate Price Competition

A price is based on adequate price competition if:

a. two or more responsible offerors compete independently,

b. the offerors submit priced offers that satisfy the requirements of the solicitation, and

c. the award will be made to the responsive, responsible offeror submitting the lowest price, or the award will be made to the offeror whose proposal represents the "best value" where price is a substantial factor in source selection. (Best value must be identified in the proposal evaluation criteria set forth in the solicitation and may be described in factors such as technical, performance, risk, and cost or price.

When adequate competition exists, the price of the otherwise successful offeror can be considered fair and reasonable unless there is indication that the price is unreasonable. For example, a low offer may not be fair and reasonable, if the low offeror has such a decided advantage that it is essentially immune from competition, or if the conditions of the solicitation unreasonably denied one or more qualified suppliers the opportunity to compete.

If only one offer is received, the price can be considered to be based on adequate competition if:

a. when the solicitation was issued there was a reasonable expectation, based on market research or other assessment, that two or more offers would be received, and

b. it can be reasonably concluded that the one offer received was submitted with the expectation of competition.

In such cases the determination that the proposed price is based on adequate competition must be documented and must be approved by a Procurement Manager.

3.2 Prices Paid for Same or Similar Items

A proposed price can be justified if:

a. it compares favorably with current or recent contract price(s) or proposed price(s) for the same or similar items, and

b. if both the validity of the comparison and the reasonableness of the previous price(s) can be established.

3.3 Established Catalog Price

A proposed price may be considered fair and reasonable, if it compares favorably with a price shown in a current catalog, price list, schedule, or other verifiable and established record (such as an Internet web page) that is regularly maintained by the manufacturer or vendor of the required item, and is either published or otherwise available for inspection by USA.

A copy of the document that shows the item, price, and the date should be included in the case file. If a copy is not available, the file should reflect the reason for its unavailability and a complete reference to the document, including its date, the page number, the item description/part number, and the price shown.

3.4 Established Market Price

A proposed price may be considered fair and reasonable, if it compares favorably with a market price for the required item which has been established in the normal course of trade between buyers and sellers.

3.5 Catalog or Market Price of Similar Items

A proposed price of an item that is not a catalog or market priced item can be compared with catalog or market prices of similar items. Any differences should be identified, justified, and documented in the case file.

3.6 Pricing Information Provided By the Offeror

Analysis of pricing information provided by the offeror, for example, data regarding sales to other customers of the same or similar items, may be used to justify, or [to] help justify, a proposed price. Such information should be independently verified.

3.7 In-House Estimates and Other Information

Comparison with estimates developed independently in-house can be used to justify, or [to] help justify, a proposed price. The design[ing], requesting, using, or other organization may have historical data or other information that could be useful.

3.8 Market Research

A proposed price can be justified by comparing it with prices obtained through market research for the same or similar items. Pertinent market data may be

available from industry publications, pricing indexes, and market periodicals which provide information on prices, market trends, and technological advances. Newspapers, trade journals, and market indexes can be used to validate assumptions or identify the need for adjustments.

3.9 Price Adjustment Factor

If sufficient history is available with a supplier, a price adjustment factor can be developed based on historical differences between the supplier's proposed prices and negotiated prices. The use of an adjustment factor as a price analysis technique is acceptable, although not necessarily a primary technique.

3.10 Rough Yardsticks

Rough yardsticks such as dollars per pound or per horsepower or other units can be used to highlight inconsistencies that warrant additional pricing inquiry.

3.11 Offeror's Price Warranty

To supplement other price analysis information or if other techniques have proven unsuccessful, a written statement signed by the offeror may be obtained certifying that the proposed price is equal to or lower than the price charged to the offeror's most favored customers for the same item in comparable quantity and quality. For additional verification, obtain from the offeror the names of other customers and independently confirm the information provided in the certificate.

3.12 Prices Set By Law or Regulation

Periodic rulings, reviews, or similar actions of a government body, or embodied in the laws, are sufficient to set a price that can be considered fair and reasonable.

3.13 GSA Contract Prices

Orders placed under GSA Federal Supply Schedules require no separate determination of fair and reasonable pricing. GSA has already determined the prices of items under schedule contracts to be fair and reasonable.

EXAMPLES OF INADEQUATE PRICING DETERMINATIONS UNDER USA'S "NEGOTIATIONS" PROCESS

Examples of subcontract actions with inadequate pricing determinations under USA's negotiations process include the following:

- **Ellanef Manufacturing Corporation (Purchase Order 6000070133, Change Order 22).**

  This was a firm-fixed price contract action valued at $99,904 to purchase spare parts for the hatch latch actuator. The USA buyer used the spare parts pricing data from 1984 for comparison with Ellanef's proposed unit prices in 2004. CAP 5.810 states that comparing "Prices Paid for Same or Similar Items" can be used to justify a proposed price if "(a) it compares favorably with current contract price(s) or proposed price(s) for the same or similar items, and (b) both the validity of the comparison and the reasonableness of the previous price(s) can be established." The comparison showed the unit prices proposed in 2004 were, in some instances, as much as 400 percent higher than the unit prices paid in 1984, and in one instance as much as 900 percent higher than USA's in-house estimate. The USA buyer did not use price index adjustments to validate the fairness or reasonableness of the proposed price or adequately employ any other applicable price analysis techniques listed in CAP 5.810. The buyer accepted Ellanef's proposed prices as fair and reasonable based partly on Ellanef's explanation that the increase was due to additional programming/reprogramming costs and due to USA's purchase of lower volume without any additional analysis to validate price reasonableness.

- **Kearfott Guidance and Navigation Corporation (Purchase Order 000047652, Change Order 31).**

  This was a cost-plus-fixed-fee contract action valued at $1.7 million for Test, Teardown, Evaluation, and Fault Analysis and Repair/Modification of High Accuracy Inertial Navigation System Inertial Measurement Units. The cost and price analysis documentation for this contract action indicates that price reasonableness was determined based on historical data on expended hours and costs incurred for repairs and the USA cost analyst's previous experience with the vendor. The cost analysis documentation refers to a "pre-negotiated matrix" between USA and Kearfott that includes cost amounts associated with three categories of repairs—minor, intermediate, and major. The USA subcontract

administrator stated that "pre-negotiated matrix" costs were negotiated in 1997 and were based on an analysis of the labor mix and associated number of hours required to perform each category of repair at that time. USA's subcontract administrator could not provide the basis for the negotiated hours for each category of repair because she did not participate in examining the proposed price and its separate cost elements and proposed profit. She also did not perform an analysis of possible efficiencies or improvements in repair processes and techniques that may have occurred since 1997 and would have affected materials, labor, or other costs. Furthermore, she did not conduct any other analysis or market research to revalidate the repair costs originally negotiated in 1997.

- **L-3 Communications Aydin Corporation (Purchase Order 6000076275, Change Order 3).**

  This was a fixed price contract action in the amount of $19,860 to establish unit prices for conducting test, teardown, and evaluation (TT&E); repair; and calibration of multiplexer units. USA had 3 years of historical data (fiscal years 2000 to 2002) for unit prices paid for TT&E and repair. This historical data showed a steady escalation rate of 3 to 4 percent per year. However, USA negotiated the TT&E unit price at an escalation rate of 27.8 percent and 32.9 percent for fiscal years 2003 and 2004, respectively. Additionally, they negotiated a unit price for repair at an escalation rate of 20.5 percent and 25.2 percent for fiscal years 2003 and 2004, respectively. Although the USA cost analyst noted this significant increase prior to final negotiations in September 2002, he accepted the proposed rates because the subcontractor, L-3 Communications Aydin Corporation (L-3), asserted that the increase was due to higher direct labor, overhead, and general and administrative rates. In our review, we did not find any documentation to support L-3's assertion about the rate increase. When we asked USA if they verified with DCAA whether L-3's assertions about the rate increase were valid, the cost analyst stated they did not do so because the total value of the contract change was less than $100,000 and they are not required to verify rates for a change of less than $100,000. However, the rates should have been verified because this change order is only to establish unit prices. Therefore the total contract value could increase based on the number of TT&Es, repairs, and calibrations performed during the contract performance period. Furthermore, the $100,000 threshold is irrelevant in this circumstance because these change orders were issued noncompetitively to L-3, and USA CAP 2.310 states "buyers are reminded that they are required to perform a price or cost analysis, as defined within the CAPs" for noncompetitive contract actions exceeding $2,500.

EXAMPLES OF INADEQUATE PRICING DETERMINATIONS UNDER USA'S "PARTNERING" PROCESS

Examples of subcontract actions with inadequate pricing determinations under USA's partnering process include the following:

- **L-3 Communications Corporation (Purchase Order 6000078379, Change Order 5).**

  This was a firm-fixed-price contract action valued at $107,000 to purchase additional Berk-Technology Wire. L-3 Communications proposed $126,706 for the contract action of which $73,884 was for the wire and the remaining $52,822 was for indirect cost rates and profit. Per subcontract file documentation, USA accepted the price of the wire as quoted by L-3's subcontractor, but the USA subcontract administrator did not perform a price analysis as required by CAP 2.310 and 5.810. The subcontract administrator stated that he did not perform price analysis of the wire price because it was a special type of wire, but he did rely on DCAA Audit Report 6201-202J28000003, dated February 7, 2002, to negotiate the indirect cost rates. When asked why a price comparison of the wire purchased previously under the basic contract to the proposed price under this change order was not conducted, the subcontract administrator stated he could not perform the price comparison because the basic contract was issued competitively and the wire was not separately priced. The USA subcontract administrator should have performed price analysis as required by CAP 2.310 and CAP 5.810 for this non-competitive purchase exceeding $2,500.

- **Barrios Technology, Ltd. (Purchase Order 2970483304, Change Order 51).**

  This was a cost-plus-award-fee contract action valued at $28,757,515 to provide 2 years of level-of-effort engineering support for Flight Operations. USA requested verification of Barrios Technology's direct labor and indirect rates from DCAA on September 4, 2002. DCAA took several exceptions to Barrios Technology's proposed direct labor and indirect rates (DCAA report 3521-2002C28000017, October 17, 2002). When we asked how USA responded to the DCAA recommendations, the cost analyst stated they discussed the results of the DCAA report with the subcontractor and, based on these discussions, they did not consider the discrepancy in rates to be a major issue. The cost analyst also stated that in lieu of using the DCAA recommended rates, they had negotiated a lower fee (from the proposed 7 percent to 6.6 percent) to offset the rate discrepancy.

However, we noted that the 6.6 percent fee was the same fee rate negotiated on the basic contract. Also in our review of other change orders, we noted that USA historically negotiated the same profit/fee percentage rate as in their corresponding basic contract. Therefore, we believe USA did not do anything to offset the higher indirect rates on this change order. Not only did the USA subcontract administrator not document the final negotiated results as required by CAPs 6.310 and 6.210, they also did not apply the DCAA approved rates to their negotiated price. If USA had applied the DCAA approved direct labor and indirect rates, the total negotiated contract value would be reduced by $1,822,527 and the associated award fee would have been reduced by $112,839.

OBSERVATION ON UNTIMELY DEFINITIZATION OF MODIFICATION UNDER USA'S "PARTNERING" PROCESS

In August 2004, USA issued a modification to its cost-plus-award-fee subcontract with Boeing (Purchase Order 1970483303, Modification 1367). The modification was issued as a unilateral undefinitized contract action[10] with an estimated not-to-exceed ceiling amount of $545,944,065. The purpose of the modification was to extend the period of performance through September 2006. The action was ultimately definitized by issuance of supplemental agreement 1415 on December 29, 2005, for the final negotiated amount of $581,810,051. The supplemental agreement was for two actions: (1) exercise the option to extend the period of performance (valued at $534,216,092 or 98 percent of the not-to-exceed ceiling), and (2) add new tasks and associated funding ($47,593,959) for Return-to-Flight assessments.

Although we found no stated requirements or goals in USA's CAP regarding timeframes for definitization of unpriced contract actions, NASA's stated goal in the "Desktop Reference Guide for Activity-Based Costing for SFOC Negotiations" is to definitize such actions within 120 days of issuance. USA's delay in definitizing the Boeing subcontract modification increased the risk of additional, unanticipated cost growth because without advanced negotiation of the costs, USA is obligated to accept Boeing's actual incurred costs. USA's delay also reduced its ability to accurately evaluate Boeing's cost control performance (and applicable award fee). These costs are ultimately passed through to NASA. Therefore NASA may have paid higher costs than necessary in association with this subcontract change. The NASA SFOC contracting officer stated that the SFOC award fee plan does not include a specific factor addressing USA's timeliness in definitizing subcontracting actions; rather, it is one of many considerations that is addressed as part of the general "business management" factor.

The issue of delayed definitization could cause NASA to be contractually obligated to accept costs incurred in excess of reasonable fees and rates. When evaluating USA's award fee, the NASA SFOC contracting officer should ensure that USA's timeliness in definitizing critical subcontract actions (including the longstanding undefinitized Boeing subcontract action) is duly considered. Any adverse impact on NASA resulting from the untimely definitization of such actions should also be duly considered.

[10] An undefinitized contract action is an action that allows the contractor to begin work on contract changes before reaching an agreement on the final estimated cost and fee for the changed requirement.

MANAGEMENT COMMENTS

National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
2101 NASA Road 1
Houston, Texas 77058-3696

June 8, 2006

Reply to Attn of: BD5

TO: NASA Headquarters
Attn: Assistant Inspector General for Auditing

FROM: AA/Director

SUBJECT: Response to Draft Audit Report, "Subcontract Management by United Space Alliance under the Space Flight Operations Contract" (Assignment No. A-05-001)

We have reviewed the subject draft audit report and thank you for the opportunity to provide comments. We also appreciate the opportunity to meet with your staff to better understand the audit findings and recommendations. To ensure a complete review of the findings, we met with procurement personnel from United Space Alliance and reviewed each of the13 subcontract actions identified in the report. The enclosure provides actions taken for each recommendation and results of our review.

Enclosure redacted due to proprietary nature.

If you have any questions regarding this response, please contact Patsy Ritterhouse, JSC Audit Liaison, at 281-483-4220 or via email at Patsy.H.Ritterhouse@nasa.gov.

Michael L. Coats

Enclosure

cc:
Assistant Administrator for Procurement
Director, Management Systems Division

Response to Draft Audit Report, "Subcontract Management by United Space Alliance under the Space Flight Operations Contract"
(Assignment No. A-05-001)

Audit Findings:

"At $4.6 billion, USA subcontracting represents a significant percentage of the overall SFOC value. In keeping with Federal and generally well-established procurement principles, USA's CAP requirements provide guidance proposed to ensure contracts are awarded and managed efficiently and effectively. Our findings of noncompliance with specified requirements, on the basis of the small sample of USA subcontracts we reviewed, suggests NASA incurred, through USA subcontracts, added costs. We cannot quantify the additional costs in all instances because we cannot retroactively determine what the prices should have been due to the limited availability of information applicable to the pricing actions."

Recommendations

1. "The NASA SFOC contracting officer should review the specific circumstances related to the USA buyers' pricing determinations for the 13 subcontract actions in question (identified in Table 1) and determine whether NASA should disallow any costs based on USA's deficient pricing determinations and noncompliance with its CAP."

JSC Response:

Concur: We have reviewed the 13 subcontract actions identified out of your sample review of 87. Based on this review, JSC has determined that all costs are allowable. Additionally, we found that only 2 out of the 13 subcontracts were found to have inadequate cost and pricing analysis (Kearfott Guidance & Navigation Corporation and Pacific Scientific). These 2 are considered isolated instances not warranting a recommendation. The results of our review are included as Attachment 1; however, because of the proprietary nature of the findings, we ask that it not be included in the final report. A detailed analysis of our findings will be provided upon request.

Additionally, the results of last three Contractor Purchasing System Reviews (CPSR) should be noted relating to cost and pricing determinations:

2003 - "Two of seventy-nine orders were considered to be weak in documenting and performing a price analysis." "Based on the evidence that the buyers performed and documented an adequate price analysis on 77 of 79, or 97 percent of the applicable price analysis, the two lacking an adequate price analysis were considered as minor and not representative of any serious risk to the Government."

2002 - "Review of the purchase order files revealed that price analysis was accomplished on 105 out of 105 applicable noncompetitive purchase orders but was performed effectively on 97 of the 105 applicable purchase orders. These eight purchase orders were treated as isolated instances and a formal recommendation was not made."

1997 – "Price analysis was required on 142 of the 150 purchase orders included in the review sample. Price analysis was effective on 137 of the applicable

procurements. All of the procurements where price analysis was not performed (one), or not considered effective (four), were all in the $0 - $25,000 category." Cost analysis was required and accomplished on seven of the eight applicable purchase orders in the review sample. The one procurement where cost analysis was not accomplished is considered an isolated incident, not warranting a recommendation."

These reviews are conducted by an independent third party, Defense Contract Management Association (DCMA). DCMA organized a CPSR team in the Dallas office to conduct these reviews within this region in order to be consistent across all Government contracts. A follow-on CPSR is scheduled for July 2006.

Since our review determined no reason to disallow any costs, we consider this recommendation closed with the actions taken.

2. "The NASA SFOC contracting officer should require USA to submit a corrective action plan within 60 days from issuance of this report addressing measures USA will take to ensure adequate pricing determinations and proper documentation supporting its pricing determinations for future subcontract actions. At a minimum, the plan should include a description of training initiatives, CAP revisions, and other necessary measures, as well as a schedule for completion."

JSC Response:

Do Not Concur: As evidenced by the last three Contractor Purchasing System Reviews and by the review discussed under recommendation 1, these isolated instances of lacking adequate cost and pricing determinations are considered as minor and not representative of any serious risk to the Government and not warranted of a formal recommendation.

We consider this recommendation closed with no further action.

3. "The NASA SFOC contracting officer should determine a periodic schedule for sampling and reviewing USA subcontract pricing determinations under the partnering process to ensure that the pricing determinations were properly performed and documented in accordance with the requirements identified in USA's CAP."

JSC Response:

Concur: On May 19, 2006, the NASA SFOC contracting officer delegated this function to DCMA to be performed annually.

Based on this action, we consider this recommendation closed.

4. "The NASA SFOC contracting officer, in coordination with DCMA as necessary, should assess and make a written determination regarding the propriety of the provision in USA's CAP 6.310 stating that all data agreed to during the partnering process is considered to be 'information other than cost or pricing data' in accordance with FAR Part 15. The written determination should specifically address the overarching nature of whether this USA CAP provision violates, or is otherwise inconsistent with, the intent of TINA and, if so, state what action the Agency will take to address the issue."

JSC Response:

Concur: USA's CAP 6.310 does not summarily classify all partnering process data as "information other than cost or pricing data." CAP 6.310, Partnering, states that "Certified cost or pricing data requirements are still required in accordance with CAP 6.210; however they may be limited to data other than that agreed to during the partnering process. All data agreed to during the partnering process is considered 'information other than cost or pricing data' in accordance with FAR Part 15."

It may be that the concern expressed in the recommendation stems from a misunderstanding of the partnering process and exactly what type of data is agreed to during the process. The partnering process, as implemented by both NASA and USA, addresses the joint development of resources; i.e., direct labor hours, materials required, travel required, .. but it does not incorporate the pricing of those jointly developed resources. For example, if the parties jointly develop an estimate of 20 hours, USA would not be required to provide certification for the development of the 20 hours, as it was a mutually derived estimate. The application of rates and factors and all data in support thereof, resulting in a priced proposal based upon the partnered resources, is still subject to certification. Any non-partnered resources would also be subject to certification as well, assuming the pertinent threshold for certification had been met, and no exceptions to the requirement for certification existed.

As such, it is not believed that the CAP, as written, violates or is otherwise inconsistent with the intent of TINA. This process was approved by NASA Headquarters and has been working well since the beginning of the contract in 1996.

We consider this recommendation closed with the actions taken.

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