

**AUDIT  
REPORT**

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**THIOKOL'S USE OF PROFESSIONAL AND  
CONSULTANT SERVICES**

**March 30, 2001**

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National Aeronautics and  
Space Administration

**OFFICE OF INSPECTOR GENERAL**

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## **Acronyms**

CRAG	Contractor Risk Assessment Guidelines
DCAA	Defense Contract Audit Agency
DCMA	Defense Contract Management Agency
DOD	Department of Defense
FAR	Federal Acquisition Regulation

W

March 30, 2001

TO: A/Administrator

FROM: W/Inspector General

SUBJECT: INFORMATION: Thiokol's Use of Professional and Consultant Services  
Report Number IG-01-019

The NASA Office of Inspector General has completed an audit of Thiokol Propulsion's (Thiokol) use of professional and consultant services. Professional and consultant services are services performed by persons who are members of a particular profession or possess a special skill and who are not officers or employees of the contractor.<sup>1</sup> NASA's controls over Thiokol's use of professional and consultant services can be improved. We found cases in which justifications for noncompetitive procurements of professional and consultant services were inadequate and untimely. Specifically, we found that Thiokol officials did not maintain adequate support for decisions to noncompetitively award the service subcontracts and did not prepare written justifications for the noncompetitive awards prior to initiation of the work. As a result, NASA has reduced assurance that Thiokol obtained the best available source or price for consultant services costing \$1.4 million under seven subcontracts and may not have benefited from about \$87,500 in professional and consultant service costs charged to NASA.

## **Background**

Thiokol has provided reusable solid rocket motors for the Space Shuttle missions under three cost-plus-award fee contracts<sup>2</sup> that require the contractor to comply with Federal Acquisition Regulation (FAR) requirements pertaining to professional and consultant service costs. The FAR states that these service costs are allowable costs only when supported by evidence of the nature and scope of the furnished service. Support would include details of the agreement between Thiokol and the consultant, invoices from

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<sup>1</sup> Federal Acquisition Regulation Part 31.205-33 provides this definition of professional and consultant services. The NASA budget includes a separately stated amount for services titled, "professional, administrative, and management advisory services." The budget amount applies to services obtained by NASA under contract and does not apply to professional and consultant services obtained by a NASA contractor through subcontract. Therefore, the NASA budget amount does not apply to the audit objectives and scope.

<sup>2</sup> Thiokol provides reusable solid rocket motors under contracts NAS8-30490, NAS8-38100, and NAS8-97238. The three contracts have a total value of \$7.5 billion.

consultants that provide sufficient detail on the nature of the actual services performed, and the consultant's work products. The Defense Contract Audit Agency (DCAA) is responsible for reviewing Thiokol's incurred costs for allowability.

The contract also requires Thiokol to competitively award subcontracts to the maximum extent practical. This includes documenting efforts to identify potential sources and the reasons sources not selected were incapable of performing the subcontract requirements. The Defense Contract Management Agency (DCMA) is responsible for the Government's oversight of Thiokol's purchasing system, including oversight of costs for professional and consultant services.

Contracting for professional and consultant services is susceptible to problems such as noncompliance with laws and regulations related to competition and conflict of interest, circumvention of related internal controls, and potential improper use of funds. Although the costs for these services are generally low-dollar costs, they are considered sensitive costs.<sup>3</sup> Weaknesses in the procurement and contract administration processes exist in this sensitive cost area that, taken in combination, pose a risk of abuse to NASA.

## **Recommendations**

We recommended that NASA direct Thiokol to ensure that contractor personnel submit timely and acceptable justifications for noncompetitive procurements. This action helps ensure that Thiokol awards professional and consultant service subcontracts to the best available source at a reasonable price, particularly in the absence of competition or an appearance of a conflict of interest. We also recommended that NASA (1) ask the DCAA to include reviews of professional and consultant services in future incurred cost audits and (2) ask the DCMA to incorporate professional and consultant service subcontracts into future surveillance reviews. Finally, we recommended that NASA ask the DCMA to include in its surveillance reviews the allocation<sup>4</sup> of professional and consultant service costs charged as indirect costs and to notify the NASA contracting officer when the Agency did not receive reasonable benefits in comparison to the costs allocated to NASA. Because professional and consultant service subcontracts are vulnerable to improper use, additional review by the DCAA and DCMA will give NASA improved oversight of such services.

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<sup>3</sup> FAR 9.5, "Organizational and Consultant Conflicts of Interest," states that organizational and consultant conflicts of interest result when other activities or relationships limit a person's ability to give impartial advice to the Government or objectively perform contract work. The U.S. General Accounting Office defined sensitive costs in publication GAO/AFMD-8.1.2, "Guide for Evaluating and Testing Controls Over Sensitive Payments," May 1993. As recent as October 2000, the Department of Defense Office of Inspector General reported that the Army and Air Force Exchange Service did not require unpaid consultants to file financial disclosure reports, which could have assisted in identifying potential conflicts of interest

<sup>4</sup> Allocation refers to the method the contractor uses to distribute indirect costs to contracts with Federal agencies. The contractor's allocation method results in NASA paying about 70 percent of the indirect costs incurred for all Thiokol contracts with Federal agencies.

## **Management's Response**

NASA concurred with the recommendations. The NASA contracting officer will issue guidance to Thiokol to ensure that the contractor's buyers have required and completed written justifications prior to awarding noncompetitive procurements. The NASA contracting officer (1) will request that the DCAA include professional and consultant services costs in future incurred cost audits and that the DCMA include the services subcontracts as part of purchasing system and surveillance reviews and (2) will coordinate with the DCMA to ensure that Thiokol's allocations of service costs charged as indirect costs result in NASA receiving reasonable benefits in relation to cost.

Details on the status of the recommendations are in the recommendations section of the report.

**[original signed by]**

Roberta L. Gross

Enclosure

Final Report on Audit of Thiokol's Use of Professional and Consultant Services

**THIOKOL'S USE OF PROFESSIONAL AND CONSULTANT  
SERVICES**

W

March 30, 2001

TO: M/Associate Administrator for Space Flight  
MSFC/AA/Director, Marshall Space Flight Center

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on Audit of Thiokol's Use of Professional and Consultant  
Services, Assignment Number A0002101  
Report Number IG-01-019

The subject final report is provided for your information and use. Please refer to the Executive Summary for the overall audit results. Our evaluation of your response is incorporated into the body of the report. The recommendations will remain open for reporting purposes until corrective actions are completed. Please notify us when actions have been completed on each recommendation.

If you have questions concerning the report, please contact Mr. Lorne A. Dear, Program Director, Procurement Audits, at (818) 354-3360; or Ms. Nora Thompson, Audit Program Manager, at (757) 864-3268; or Mr. Doug Orton, Auditor-in-Charge, at (281) 244-1159. We appreciate the courtesies extended to the audit staff. The final report distribution is in Appendix E.

**[original signed by]**

Russell A. Rau

Enclosure

cc:

B/Acting Chief Financial Officer

B/Comptroller

BF/Director, Financial Management Division

G/General Counsel

H/Associate Administrator for Procurement

JM/Director, Management Assessment Division

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# NASA Office of Inspector General

IG-01-019  
A0002101

March 30, 2001

## Thiokol's Use of Professional and Consultant Services

### Executive Summary

**Background.** Thiokol has provided reusable solid rocket motors for the Space Shuttle missions under three contracts with a total value of \$7.5 billion. Marshall Space Flight Center (Marshall) awarded the first contract, NAS8-30490,<sup>5</sup> to Thiokol in March 1989 for about \$3.2 billion. Marshall awarded the second contract, NAS8-38100, in June 1991 for about \$2.6 billion and the third contract, NAS8-97238, in August 1999 for about \$1.7 billion.<sup>6</sup> The primary location of performance on the contract is Brigham City, Utah. Thiokol acquired professional and consultant services to obtain advice, studies, training, or a liaison with Government officials.

The DCMA is responsible for the Government's oversight of Thiokol's purchasing system, including the award and management of professional and consultant services subcontracts. The Defense Contract Audit Agency (DCAA) also performs annual audits of incurred costs on the contract.

**Objectives.** The overall objective was to determine whether NASA had adequate controls over Thiokol's use of professional and consultant services. Appendix A describes the specific audit objectives and methodology. For our review, we selected subcontracts to contract NAS8-38100 that were active in 1998 and 1999 and that appeared to be at risk for unallowable costs or were subcontracts with former Thiokol employees and subcontractors. Thirteen subcontracts, with a total value of \$1.4 million, met our criteria for review (see Appendix B).

**Results of Audit.** NASA's controls over Thiokol's use of professional and consultant services can be improved. Weaknesses in the procurement and contract administration processes exist in this sensitive cost area that, taken in combination, pose a risk of abuse to NASA. For 7 of the 13 professional and consultant service subcontracts we reviewed, Thiokol buyers did not

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<sup>5</sup> Contract NAS8-30490 was a cost-plus-award fee contract with a period of performance from March 1989 through December 31, 1997. NASA awarded three supplemental acquisitions of motors and included the acquisitions as schedules to the contract. Two of the acquisitions were separate contracts, but NASA bundled the acquisitions under contract NAS8-30490 for ease of administration.

<sup>6</sup> Contract NAS8-38100 was cost-plus-award fee contract with a period of performance from June 1991 through December 31, 2000. Contract NAS8-97238 is a cost-plus-award fee contract with a period of performance from August 1999 through May 31, 2005.

require adequate justifications for noncompetitive procurements. Justifications for the seven subcontracts had one or more of the following deficiencies:

- Untimely or inappropriate justification for noncompetitive procurement (two subcontracts)
- Inadequate explanatory statement (six subcontracts)
- Missing description of actions to compete future procurements (four subcontracts)

As a result, NASA has reduced assurance that Thiokol obtained the best available source or price for consultant services paid for under the seven subcontracts and may not have benefited from about \$87,500 in professional and consultant service costs charged to NASA.

**Recommendations.** We recommended that management require the Agency's contracting officer for NAS8-38100 to (1) direct Thiokol to ensure contractor personnel submit timely and acceptable justifications for noncompetitive procurements; (2) request the DCAA to include professional and consultant service costs in samples selected for future incurred cost audits; (3) request the DCMA administrative contracting officer to include professional and consultant service subcontracts as part of DCMA's surveillance reviews; and (4) request the DCMA administrative contracting officer to include in oversight reviews the allocation of professional and consultant service costs charged as indirect costs and to notify the NASA contracting officer when the Agency did not receive reasonable benefits in comparison to the costs allocated to NASA.

### **Management Response**

Management concurred with all the recommendations and plans to implement the recommended actions.

**Evaluation of Management's Response.** We consider management's comments responsive.

## Introduction

**Thiokol's Responsibilities in Subcontracting.** NAS8-38100 gives Thiokol authority to subcontract for professional and consultant services and requires Thiokol to award and administer subcontracts according to requirements in FAR, Part 44, "Subcontracting." Thiokol must maintain a purchasing system that promotes efficient and effective use of Government funds. The purchasing system must include processes that select the best source for a subcontract and oversight controls that ensure the proper award of subcontracts. Oversight controls are critical to protecting NASA's interest since most Thiokol subcontracts for professional and consultant services involved sources not subject to Government oversight. FAR Part 44 requires Thiokol to comply with Government policies in subcontract awards, including the Government policy of full and open competition in contracting.

**Oversight of Professional and Consultant Services.** On January 5, 2000,<sup>7</sup> the NASA contracting officer delegated to the DCMA administrative contracting officer approval of the Thiokol purchasing system and oversight of contractor operations. The DCMA administrative contracting officer uses DCMA purchasing system reviews and risk assessments as a basis for approving the Thiokol purchasing system. In March 1992, Thiokol became a voluntary participant in a Department of Defense (DOD) program, the Contractor Risk Assessment Guidelines (CRAG), which allows contractor self-administered purchasing system reviews.<sup>8</sup> Following CRAG, Thiokol conducted purchasing system reviews every 3 years since 1992, and DCMA validated the reviews. During the 3-year period between purchasing system reviews, DCMA performs risk assessments of Thiokol's management controls over general functional areas. The DCMA risk assessments evaluate risk by comparing Thiokol's management controls against a checklist of best practices, but the assessments do not include any reviews of transactions. In 1997 and 1998, Thiokol performed self-administered purchasing system reviews. Based on the 1998 purchasing system review and risk assessment, DCMA continued its approval of Thiokol's purchasing system. In March 2000, DCMA completed the latest risk assessment. The DCMA administrative contracting officer renewed the approval of the Thiokol purchasing system on March 31, 2000.

During contract performance, the DCMA administrative contracting officer conducts surveillance reviews to evaluate individual purchases or subcontracts and performs consent to subcontract reviews. The reviews of individual purchases and subcontracts ensure Thiokol maintains adequate purchasing procedures. The consent to subcontract reviews require Thiokol officials to obtain the DCMA administrative contracting officer's consent before awarding subcontracts that exceed 5 percent of total estimated contract costs.

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<sup>7</sup> The most recent delegation to the DCMA is dated January 5, 2000. The DCMA has provided contract administration services for contracts NAS8-30490, NAS8-38100, and NAS8-97238.

<sup>8</sup> CRAG guidelines for the self-administered purchasing system reviews are stated in the DOD Contractor's Risk Assessment Guide, October 1988, Chapter V, "Purchasing."

The DCAA conducts annual audits of incurred costs for contract NAS8-38100 and determines whether costs meet contract and FAR allowability requirements.<sup>9</sup> Because Thiokol changed to a calendar year accounting method in June 1998, DCAA performed two incurred cost audits for 1998. The DCAA completed the 1998 audit of incurred costs and reported the results to the DCMA administrative contracting officer in two reports, dated June 10, 1999, and September 8, 1999.<sup>10</sup>

**Prior Reviews.** During prior reviews of consultant services and subcontracts at other contractors, the DOD Office of Inspector General and the NASA Office of Inspector General have found deficiencies. See Appendix C for a summary of the reports and findings.

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<sup>9</sup> DCAA reports those costs that do not meet allowability requirements to the DCMA administrative contracting officer. The DCMA administrative contracting officer resolves and dispositions any costs that DCAA reports as unallowable.

<sup>10</sup> DCAA issued results of the 1998 incurred cost audits in Audit Report No. 3231-99P10150001, "Report on Audit of Fiscal Year 1998 Incurred Costs," dated June 10, 1999, and Audit Report No. 3231-99P10150002, "Report on Audit of Fiscal Period 1998T Incurred Costs," dated September 8, 1999.

## **Finding and Recommendations**

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### **Finding. Controls over Noncompetitive Procurements of Professional and Consultant Services**

For 7 of the 13 professional and consultant service subcontracts we reviewed, Thiokol officials did not prepare acceptable justifications for noncompetitive procurements. Justifications were unacceptable because Thiokol personnel did not follow Thiokol policy in noncompetitive procurements with former Thiokol employees and sources with prior Thiokol subcontracts. Also, DCMA purchasing system and surveillance reviews and DCAA audits of incurred costs did not include professional and consultant services subcontracts due to the relatively low-dollar value of these subcontracts but without consideration of the inherent risks. Further, the DCMA consent to subcontract review excludes professional and consultant services subcontracts because the subcontracts do not meet the threshold dollar value for the review. As a result, NASA has reduced assurance that the contractor obtained the best source and may not have benefited from about \$87,500 in professional and consultant service costs charged to NASA.

### **FAR and Contract NAS8-38100 Requirements**

FAR, Subpart 31.205-33, "Professional and Consultant Service Costs," states that professional and consultant services are allowable costs only when supported by evidence of the nature and scope of the service the consultant furnished under the subcontract.<sup>11</sup> FAR requires the contractor to maintain details of the agreement between the consultant and contractor (for example, work requirements and rate of compensation) and details of actual services the consultant performed. These requirements are in place in recognition of the inherent risk that professional and consultant service subcontracts can result in conflicts of interest and favoritism in the award process.

FAR Part 6, "Competition Requirements," directs contracting officers to take specific actions that ensure compliance with Government policy on full and open competition in Government contract awards. The contracting officer must solicit offers from as many potential sources as is practical. To identify potential sources, the contracting officer conducts a market analysis, documents the analysis, and retains the documentation in the contract file. A contracting officer can award a noncompetitive procurement when only a single qualified source is available to perform the contract requirements. However, the contracting officer must prepare a written justification that explains why a competitive procurement is not appropriate. The justification

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<sup>11</sup> FAR also requires that invoices from the consultant show sufficient details regarding the time the consultant spent on the subcontract and the nature of the actual services the consultant performed. The contractor must maintain consultants' work products and documents related to the work the consultant performed. Examples include trip reports, minutes of meetings, and collateral memoranda and reports. Trip reports should indicate persons the consultant visited and subjects the consultant discussed during the visits.

must describe the market analysis and results of the analysis, list other sources that are available, explain the selected source's unique qualifications, and explain why the available sources that were not selected are unqualified.

FAR, Part 44, "Subcontracting," requires Thiokol to comply with Government policies in subcontract awards, including the Government policy of full and open competition. The administrative contracting officer must maintain a sufficient level of surveillance to ensure the contractor's purchasing system complies with competition requirements.

To ensure Thiokol competitively awards subcontracts to the maximum extent practical, contract NAS8-38100 incorporated FAR clause 52.244-5, "Competition in Subcontracting." Thiokol implemented Procurement Organization Operating Instruction FI-T400-20.4, "Single/Sole Source Justification," which established requirements similar to FAR Part 6. In accordance with the Instruction, Thiokol personnel must avoid noncompetitive procurements whenever possible. The written justification must explain why a competitive procurement is not appropriate and describe actions that prevent future noncompetitive procurements. Instruction FI-T400-20.4 directs the Thiokol buyer to ensure that the written justification meets requirements before awarding the noncompetitive procurement.

### **Justifications for Noncompetitive Procurements**

The 13 professional and consultant service subcontracts we reviewed were noncompetitive procurements. For 7 of the 13 noncompetitive procurements, professional and consultant service subcontracts included one or more of the following deficiencies:

- **Untimely or inappropriate justification.** On two subcontracts, Thiokol personnel requesting the procurement prepared a written justification for the initial noncompetitive procurement, but did not update the justification when Thiokol issued a follow-on subcontract to the same subcontractor. On one subcontract, for example, Thiokol issued the initial noncompetitive subcontract in 1993 and awarded follow-on subcontracts for years 1994 through 2001 without written justifications.
- **Inadequate explanatory statement.** On six subcontracts, Thiokol personnel who requested the noncompetitive procurement did not explain why a competitive procurement was inappropriate. Four of the six justifications did not show that requesting personnel considered any other source. Two of the six justifications summarized other sources that the requester considered and stated that the

selected source was uniquely qualified. The justifications did not state why the other available sources were incapable of performing the subcontract requirements.

- **Missing description of actions to compete future procurements.** Justifications for four subcontracts lacked a description of actions to compete future procurements. For the procurements, requesting personnel either did not complete that section of the justification form or indicated they would take no action.

### **Thiokol Personnel**

Thiokol personnel were aware of Thiokol procurement policy FI-T400-20.4 but did not follow the policy in noncompetitive procurements with former Thiokol employees or subcontractors.

- For four of the seven procurements, Thiokol requesting personnel selected sources that either were former Thiokol employees or had prior subcontracts with Thiokol. When requesting personnel were familiar with the sources, requesting personnel did not perform a market analysis to identify other sources. Buyers accepted justifications that did not have adequate explanatory statements when the noncompetitive procurement involved a former Thiokol employee or subcontractor.
- For two procurements, Thiokol senior management directed contractor personnel to select a specific source through a noncompetitive procurement because the source previously performed work for other Thiokol divisions. Requesting personnel and buyers did not seek competition for the procurements.
- Requesting personnel did not document plans to compete future procurements on justifications that involved former Thiokol employees, former Thiokol subcontractors, or sources that Thiokol senior management selected.

The NASA contracting officer should direct Thiokol to ensure that requesting personnel submit adequate justifications for noncompetitive procurements and that buyers do not award noncompetitive procurements without adequate justifications.

### **DCAA and DCMA Oversight**

DCAA audits of incurred costs and DCMA purchasing system reviews use a risk-based approach to select individual items for review. The risk-based approach focuses a review on items for which the dollar risk and expected benefit of review are greatest in terms of questioned costs. For years prior to 2000, DCAA incurred cost audits and DCMA purchasing system reviews did not disclose unallowable professional and consultant service costs at Thiokol. The dollar value of individual professional and consultant services subcontracts are lower than other items of incurred costs for those years. Although professional and consultant services

subcontracts are susceptible to improper use or conflict of interest, DCMA and DCAA reviews are less likely to select the subcontracts because of their lower dollar value.

Additionally, the DCMA administrative contracting officer performs a consent to subcontract review that is likely to exclude professional and consultant services subcontracts. Under the consent to subcontract review, the DCMA administrative contracting officer reviews subcontracts that exceed 5 percent of the \$7.5 billion estimated total value of the three contracts, limiting the review to subcontracts with an estimated value of \$375 million or more. The review will not include professional and consultant services subcontracts with a value less than \$375 million. For example, none of the 13 professional and consultant service subcontracts we reviewed was subject to the DCMA administrative contracting officer's consent to review because the value of each subcontract was less than \$375 million. To ensure Thiokol's purchasing system complies with the Government policy of full and open competition and to avoid the appearance of favoritism, the DCMA administrative contracting officer should review a sample of professional and consultant services subcontracts. The NASA contracting officer should modify the delegation to the DCMA administrative contracting officer to ensure that the officer includes a sample of professional and consultant services subcontracts in the consent to subcontract reviews.

### **Effect on Competition and Oversight Reviews**

Adequate justifications and supporting documentation are needed to provide NASA assurance that Thiokol awarded professional and consultant service subcontracts to the best available source at a reasonable price. Also, adequate documentation facilitates DCMA purchasing system and surveillance reviews by describing the steps the contractor used to identify the available sources and the contractor's basis for noncompetitively selecting a single source.

Three of the seven noncompetitive procurements with unacceptable justifications obtained consulting services that another source may have been able to provide. The three procurements, shown in the following table, have a total value of \$593,850, or about 42 percent of the \$1.4 million in subcontracts that we reviewed.



## Subcontracts with a Potential for Competition

Subcontract	Description of Services*	Contract Value
M8FB200	Provide consulting services for marketing tactical technology and production in the Huntsville, Alabama, area.	\$28,000
8FB048	Assist in marketing activities for current and upcoming business opportunities in the commercial and DOD arenas.	\$125,000
M8FB235	Provide consultants to support leadership training events.	\$440,850

\* We obtained the description of services provided under the subcontract from the subcontract scope of award or the written justification for noncompetitive procurement.

The contractor needs adequate justifications and supporting documentation to show that a noncompetitive procurement was the appropriate procurement instrument.

Additionally, for subcontract 8FB048, the subcontract documentation describes \$125,000 in professional and consultant services for marketing activities that primarily supported Air Force, Navy, and Army programs. Thiokol has used the consultant's services since July 1992. The pricing analysis for the 1997 award stated that the consultant would provide marketing services for Air Force silo-based programs, including the Minute-Man Missile program. A DCAA review of the consultant's monthly trip reports for August 1997 through January 2001 showed the consultant primarily provided marketing services for DOD programs. For 1998 and 1999, NASA paid about 70 percent<sup>12</sup> of the \$125,000 subcontract, or about \$87,500, for professional and consultant services. The contractor charged the subcontract as an indirect cost to its contracts with Federal agencies and in agreement with its normal accounting practices.<sup>13</sup>

The subcontract involved activities that are allowable indirect costs for years 1997 and 1998. However, the subcontract illustrates the importance of the DCMA administrative contracting officer reviewing the contractor's method of charging, or allocation,<sup>14</sup> of professional and

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<sup>12</sup> The 70 percent represents the amount of an indirect cost that the contractor charges to NASA. The contractor charges the remaining 30 percent to Thiokol contracts with other Federal agencies.

<sup>13</sup> Thiokol disclosed its normal accounting practices for professional and consultant service subcontracts in its Cost Accounting Standards Board Disclosure Statement, Section 3.2.3. The statement prescribes that a professional and consultant service subcontract is a direct cost if the subcontract is readily, economically, and consistently identifiable to a contract or project. A professional and consultant service subcontract is an indirect cost if the contractor incurred the cost for multiple contracts and the services are necessary for the overall operation of the business.

<sup>14</sup> Allocation refers to the method the contractor uses to distribute indirect costs. Thiokol collects indirect costs incurred for all contracts with Federal agencies into a Federal indirect cost pool and distributes the Federal indirect cost pool to the individual contracts through the indirect, or overhead, rate.

consultant service subcontracts that are indirect costs to individual contracts with agencies. Such action will allow the NASA contracting officer to determine whether negotiating a limit on the amount of indirect costs that the contractor can bill to the NASA contract is appropriate.

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

**The Director, Marshall Space Flight Center, should require the NASA contracting officer to:**

- 1. Direct Thiokol to ensure that requesting personnel submit acceptable and timely justifications as required by Thiokol Procurement Organization Operating Instruction FI-T400-20.4 and to ensure that buyers do not award noncompetitive procurements without required and complete justifications.**
- 2. Request the DCAA to include professional and consultant service costs in samples selected for future incurred cost audits.**
- 3. Request the DCMA administrative contracting officer to include professional and consultant service subcontracts as part of purchasing system and surveillance reviews.**
- 4. Request the DCMA administrative contracting officer to include in DCMA oversight reviews the allocation of professional and consultant service costs charged as indirect costs and to notify the NASA contracting officer when NASA did not receive reasonable benefits compared to the costs allocated to NASA.**

**Management's Response.** Concur. The NASA contracting officer will issue guidance to Thiokol to ensure that buyers have required and completed justifications prior to awarding noncompetitive procurements. The contracting officer (1) will request that the DCAA include professional and consultant services costs in future incurred cost audits and that the DCMA include professional and consultant service subcontracts as part of purchasing system and surveillance reviews and (2) will coordinate with the DCMA to ensure that Thiokol's allocations of service costs charged as indirect costs result in NASA receiving reasonable benefits in relation to cost.

The complete text of management's response is in Appendix D.

**Evaluation of Management's Response.** Management's planned actions are responsive to the recommendations. The recommendations are resolved but will remain undispositioned and open until agreed-to-corrective actions are completed.

## **Appendix A. Objectives, Scope, and Methodology**

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### **Objectives**

The overall objective was to determine whether NASA had adequate control of Thiokol's use of professional and consultant services. Specifically, we determined whether the contractor's professional and consultant service costs included unallowable costs.

### **Scope and Methodology**

We reviewed professional and consultant service subcontracts that were active in 1998 and 1999. During that period, Thiokol had 47 active professional and consultant service subcontracts totaling \$2.3 million. We examined subcontract documentation related to years 1998 and 1999. Documentation included subcontracts, statements of work, noncompetitive justifications, cost and price analyses, consultants' invoices and work products, payment approvals, and miscellaneous correspondence. We also compared each subcontract against requirements in the FAR and relevant Thiokol policies and procedures and interviewed contractor personnel who requested the consultant services, Thiokol procurement officials, the NASA contracting officer, and the DCMA administrative contracting officer.

### **Use of Computer-Processed Data**

We obtained computer-generated data on subcontract awards and tested the data by comparing it to source documents for the sampled subcontracts. For those sampled subcontracts with extensions covering years before or after 1998 and 1999, we validated 1998 and 1999 subcontract costs and confirmed the total subcontract cost with DCAA. The tests showed that the computer-processed data were sufficiently reliable to be used in meeting the audit objectives.

### **Management Controls Reviewed**

We reviewed management controls over compliance with FAR allowability requirements and the award of consultant subcontracts. Management controls over the justification of noncompetitive procurements need improvement as discussed in the report finding.

### **Audit Field Work**

We performed audit field work from May through December 2000 at Marshall Space Center and at Thiokol's facility in Brigham City, Utah. We conducted the audit in accordance with generally accepted government auditing standards.

## Appendix B. Consultant Subcontracts Reviewed

Subcontract	Dollar Value	Incurred Cost (Through December 1999)	Deficiency
M8MG068	\$ 44,000	\$ 25,047	Inadequate explanatory statement
7FB160	Unfunded*	73,197	None
M8MG112	280,000	194,235	Inadequate explanatory statement, and missing description of actions to compete future procurements
M7MB110	374,400	373,482	Untimely or inappropriate justification
M8SJ039	7,000	7,000	None
8FB048	125,000	100,016	Inadequate explanatory statement, and missing description of actions to compete future procurements
M8FB200	28,000	16,439	None
M9FB009	28,194	28,194	None
M8FB190	40,000	40,000	Inadequate explanatory statement, and missing description of actions to compete future procurements
M8FB174	3,695	3,695	None
M8FB235	440,850	252,858	Untimely or inappropriate justification, and inadequate explanatory statement
8FB012	26,500	24,230	Inadequate explanatory statement, and missing description of actions to compete future procurements
M8FB172	40,000	36,961	None
<b>Total</b>	<b>\$1,437,639</b>	<b>\$1,175,354</b>	

\* Unfunded subcontracts state a ceiling for the subcontract amount but do not state a specific dollar value because the specific dollar value is unknown at the time of the award.

## Appendix C. Summary of Prior Reviews and Findings

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**NASA Office of Inspector General (OIG) Reviews.** The NASA OIG issued two audit reports and a management letter report on subcontract management. (Copies of the two audit reports are available at [www.hq.nasa.gov/office/oig/hq/issuedaudits.html](http://www.hq.nasa.gov/office/oig/hq/issuedaudits.html).)

**“Allied-Signal Subcontract Management,” Report Number IG-99-042, September 16, 1999, and “Raytheon Subcontract Management,” Report Number IG-00-002, December 21, 1999.** Purchasing department buyers for the two contractors did not maintain documentation to support justifications for noncompetitive procurements. The contractors' purchasing policies did not require contractor personnel to keep supporting documentation. Additionally, Government oversight reviews of the contractors' procurement systems did not include examinations of supporting documentation for noncompetitive procurements. As a result, NASA had reduced assurance that the contractor maximized the competition of its subcontracts. In response to our recommendations, NASA management instructed the contractors to maintain adequate documentation in support of noncompetitive procurements. NASA management also took actions to include reviews of supporting documentation in future reviews of the contractors' purchasing systems.

**"Management Letter Regarding Procurement Issues Identified in the Shuttle-Mir Rendezvous and Docking Missions and International Space Station Operational Readiness Task Forces Report," February 18, 1998.** A NASA subcontractor providing technical support to a NASA Task Force may have lacked the impartiality needed to make independent assessments and recommendations concerning the organizations funding their efforts. Also, the noncompetitively awarded subcontract and subcontract extension did not have adequate justification for a noncompetitive procurement. The contractor submitted inadequate explanatory statements for the initial award, did not conduct a market survey or submit a written justification for the subcontract extension, did not perform an adequate price analysis, and did not obtain the required approvals. Because the management letter report contains sensitive and proprietary contractor information, we are not providing additional details regarding the report's recommendations and management's response to the recommendations.

**DOD Reviews.** The DOD Office of Inspector General issued two audit reports on consultant service contracts.

**“Contracts for Professional, Administrative, and Management Support Services,” Report Number D-2000-100, March 10, 2000, and “Use of Unpaid Consultants by the DOD Exchange Services,” Report Number D-2001-005, October 16, 2000.** Report Number D-2000-100 discusses a review of procurement procedures for professional, administrative, and management support service contracts at 15 DOD contracting activities and program offices. The report identified problems in each of 105

**Appendix C**

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sampled contract actions. Problems included undefined requirements, inadequate technical reviews, inadequate negotiation memorandums, inadequate competition, and lack of cost control. Report Number D-2001-005 discusses the Army and Air Force Exchange Service inappropriate engagements of consultants who had financial affiliations with the Exchange Service. The Exchange Service did not require unpaid consultants to file financial disclosure reports, which could have assisted in identifying potential conflicts of interest.

## Appendix D. Management's Response

National Aeronautics and  
Space Administration  
**George C. Marshall Space Flight Center**  
Marshall Space Flight Center, AL 35812



Reply to Attn of: DE01

MAR 20 2001

TO: NASA Headquarters  
Attn: W/Russell A. Rau

FROM: DE01/Sidney P. Saucier

SUBJECT: OIG Draft Report on the Audit of Thiokol's Use of Professional and  
Consultant Services, Assignment Number A0002101

We have reviewed the subject report and our comments are enclosed. We concur with the report's recommendations and will implement the corrective actions so that the oversight of consultant services can be improved. This response was coordinated with the Office of Space Flight. If you have any questions or need additional information regarding our comments, please contact RS40/Danny Walker at 256-544-0100.

*Sidney P. Saucier*  
Sidney P. Saucier  
Associate Director

Enclosure

**MSFC RESPONSE TO THE OIG DRAFT REPORT ON THIOKOL'S  
USE OF PROFESSIONAL AND CONSULTANT SERVICES  
ASSIGNMENT NO. A0002101**

**General Comment:**

Thiokol annually awards hundreds of subcontracts and their purchasing system has been in an approved status for many years. For this audit, the OIG selected 13 subcontracts for review, of which 7 were found to have problems. Although at first glance this appears to be a high percentage, it should be noted that only documentation errors were found. We are encouraged that there is no indication that these subcontracts were ethically or legally inappropriate. In addition, the Defense Contract Management Agency (DCMA) does not share the same level of concern as the OIG in terms of the significance of this potential problem area.

**Specific Comments:**

Page i, second line: "Thiokol Corporation" is incorrect. It should read "Thiokol Propulsion, a division of Cordant Technologies."

Page 5, section entitled "Thiokol Personnel": It needs to be recognized that professional and technical services often involve the need for specific experience and expertise. It is reasonable to utilize retired employees to obtain the requisite background.

Page 10, Appendix B: It would be more informative if this section included a description of each subcontracts listed.

**Responses to the Report's Recommendations:**

**OIG Recommendation 1:** The Director, Marshall Space Flight Center, should require the NASA contracting officer to direct Thiokol to ensure that requesting personnel submit acceptable and timely justifications as required by Thiokol Procurement Organization Operating Instruction FI-T400-20.4 and to ensure that buyers do not award noncompetitive procurements without required and complete justifications.

**MSFC Response:** Concur. The contracting officer will issue guidance to Thiokol to ensure that their buyers do not award noncompetitive procurements without required and complete justification.

Corrective Action Official: PS01/Stephen Beale  
Corrective Action Closure Official: DE01/Sidney Saucier  
Projected Closure Date: 6/30/01



## Appendix D

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**OIG Recommendation 2:** The Director, Marshall Space Flight Center should require the NASA contracting officer to request the DCAA to include professional and consultant service costs in samples selected for future incurred cost audits.

**MSFC Response:** Concur. The contracting officer will request that DCAA include professional and consultant service costs in samples selected for future incurred cost audits.

Corrective Action Official: PS01/Stephen Beale  
Corrective Action Closure Official: DE01/Sidney Saucier  
Projected Closure Date: 6/30/01

**OIG Recommendation 3:** The Director, Marshall Space Flight Center should require the NASA contracting officer to request the DCMA administrative contracting officer to include professional and consultant service subcontracts as part of purchasing system and surveillance reviews.

**MSFC Response:** Concur. The contracting officer will request the administrative contracting officer to include professional and consulting subcontracts as part of their reviews.

Corrective Action Official: PS01/Stephen Beale  
Corrective Action Closure Official: DE01/Sidney Saucier  
Projected Closure Date: 6/30/01

**OIG Recommendation 4:** The Director, Marshall Space Flight Center should request the DCMA administrative contracting officer include in their oversight reviews the allocation of professional and consultant service costs charged as indirect costs and to notify the NASA contracting officer where NASA did not receive reasonable benefits compared to costs allocated to NASA.

**MSFC Response:** Concur. The contracting officer will coordinate this issue with the DCMA Administrative Contracting Officer to ensure NASA is receiving reasonable benefits in relation to cost.

Corrective Action Official: PS01/Stephen Beale  
Corrective Action Closure Official: DE01/Sidney Saucier  
Projected Closure Date: 6/30/01

## **Appendix E. Report Distribution**

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### **National Aeronautics and Space Administration (NASA) Headquarters**

A/Administrator  
AA/Chief of Staff  
AI/Associate Deputy Administrator  
B/Acting Chief Financial Officer  
B/Comptroller  
BF/Director, Financial Management Division  
G/General Counsel  
H/Associate Administrator for Procurement  
HK/Director, Contract Management Division  
HS/Director, Program Operations Division  
J/Associate Administrator for Management Systems  
JM/Director, Management Assessment Division  
L/Acting Associate Administrator for Legislative Affairs  
M/Associate Administrator for Space Flight

### **NASA Centers**

Chief Counsel, John F. Kennedy Space Center

### **Non-NASA Federal Organizations and Individuals**

Assistant to the President for Science and Technology Policy  
Deputy Associate Director, Energy and Science Division, Office of Management and Budget  
Branch Chief, Science and Space Programs Branch, Energy and Science Division, Office of Management and Budget  
Director, Acquisition and Sourcing Management Team, General Accounting Office  
Professional Staff Member, Senate Subcommittee on Science, Technology, and Space  
Director, Defense Contract Audit Agency  
Director, Defense Contract Management Agency

## **Appendix E**

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### **Chairman and Ranking Minority Member – Congressional Committees and Subcommittees**

Senate Committee on Appropriations

Senate Subcommittee on VA, HUD, and Independent Agencies

Senate Committee on Commerce, Science, and Transportation

Senate Subcommittee on Science, Technology, and Space

Senate Committee on Governmental Affairs

House Committee on Appropriations

House Subcommittee on VA, HUD, and Independent Agencies

House Committee on Government Reform and Oversight

House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations

House Subcommittee on National Security, Veterans Affairs, and International Relations

House Subcommittee on Technology and Procurement Policy

House Committee on Science

House Subcommittee on Space and Aeronautics, Committee on Science

### **Congressional Member**

Honorable Pete Sessions, U.S. House of Representatives

## NASA Assistant Inspector General for Auditing Reader Survey

The NASA Office of Inspector General has a continuing interest in improving the usefulness of our reports. We wish to make our reports responsive to our customers' interests, consistent with our statutory responsibility. Could you help us by completing our reader survey? For your convenience, the questionnaire can be completed electronically through our homepage at <http://www.hq.nasa.gov/office/oig/hq/audits.html> or can be mailed to the Assistant Inspector General for Auditing; NASA Headquarters, Code W, Washington, DC 20546-0001.

**Report Title:** Thiokol's Use of Professional and Consultant Services \_\_\_\_\_

**Report Number:** \_\_\_\_\_ **Report Date:** \_\_\_\_\_

*Circle the appropriate rating for the following statements.*

	Strongly Agree	Agree	Neutra l	Disagre e	Strongl y Disagre e	N/A
1. The report was clear, readable, and logically organized.	5	4	3	2	1	N/A
2. The report was concise and to the point.	5	4	3	2	1	N/A
3. We effectively communicated the audit objectives, scope, and methodology.	5	4	3	2	1	N/A
4. The report contained sufficient information to support the finding(s) in a balanced and objective manner.	5	4	3	2	1	N/A

***Overall, how would you rate the report?***

Excellent                      Fair  
 Very Good                      Poor  
 Good

***If you have any additional comments or wish to elaborate on any of the above responses, please write them here. Use additional paper if necessary.*** \_\_\_\_\_

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*How did you use the report?* \_\_\_\_\_

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*How could we improve our report?* \_\_\_\_\_

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*How would you identify yourself? (Select one)*

Congressional Staff

NASA Employee

Private Citizen

Government: \_\_\_\_\_ Federal: \_\_\_\_\_ State: \_\_\_\_\_ Local: \_\_\_\_\_

Media

Public Interest

Other: \_\_\_\_\_

*May we contact you about your comments?*

**Yes:** \_\_\_\_\_

**No:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_

Thank you for your cooperation in completing this survey.

## **Major Contributors to the Report**

Lorne Dear, Program Director, Procurement Audits

Nora Thompson, Program Manager, Procurement Audits

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