

National Aeronautics and  
Space Administration

**Office of Inspector General**  
Washington, DC 20546-0001



May 9, 2008

**TO:** Associate Administrator for the Space Operations Mission Directorate  
Assistant Administrator for Procurement  
Director, John C. Stennis Space Center  
Manager, Rocket Propulsion Test Program Office, John C. Stennis  
Space Center  
Manager, White Sands Test Facility  
Manager, Plum Brook Station

**FROM:** Assistant Inspector General for Auditing

**SUBJECT:** Final Memorandum on the Audit of NASA's Management of the Test  
Operations Contract (Report No. IG-08-019; Assignment  
No. A-07-016-00)

The Office of Inspector General (OIG) has completed an audit of NASA's management of the test operations contract (TOC) for rocket propulsion systems and components at Marshall Space Flight Center (MSFC) and Stennis Space Center (SSC).

Our audit objective was to determine whether NASA had employed sufficient analysis in determining the scope of the TOC and to determine whether NASA had effectively assessed test operations requirements for the rocket propulsion systems and components at the time of contract award. Specifically, we determined

- whether NASA performed sufficient analysis to determine which test sites to include in the TOC,
- whether NASA had adequately defined test operations requirements at the time the contract was awarded to protect against "out of scope" changes or cost growth, and
- whether Government surveillance and contractor performance evaluations were providing reasonable assurance that efficient methods and effective cost controls were in use.

We also reviewed internal controls as appropriate. (See Enclosure 1 for details on the audit's scope and methodology.)

## *Executive Summary*

We found that NASA had not performed sufficient analysis in determining which test sites to include in the TOC; that NASA had adequately defined test operations requirements at contract award; and that Government surveillance and contractor performance evaluations were providing reasonable assurance that efficient methods and effective cost controls were in use.

In 2002, NASA's Strategic Resources Review (SRR) included an initiative to consider consolidation of the four support contracts for rocket propulsion testing that existed at that time: SSC; MSFC; Johnson Space Center (JSC), White Sands Test Facility (WSTF); and Glenn Research Center (GRC), Plum Brook Station (PBS). The SRR solicited and reviewed rudimentary data and monetary impact projections related to potential contract consolidation options and recommended consolidating all of NASA's rocket propulsion test operations contracts. The SRR recommendation was to consolidate contracts for all of the test sites into one contract. The SRR recommendation was based on potential benefits that included approximately \$70 million in savings,<sup>1</sup> more competition, and fewer Source Evaluation Boards. NASA's rudimentary review lacked evidence of clear policy rationale and a cost-benefit verification.

Office of Management and Budget (OMB) Circular No. A-94, "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs," October 29, 1992, recommends, but does not require, that a cost-benefit analysis be used as a management tool when reviewing and considering implementation or changes in Government programs or projects. OMB Circular A-94 provides general guidance for conducting cost-benefit analysis, to include four elements (policy rationale, explicit assumptions, evaluation of alternatives, and cost-benefit verification) to help meet the goal of promoting efficient resource allocation through well-informed decision-making. As a best business practice, NASA should have conducted and documented a more robust analysis of alternatives to support the original SRR contract consolidation recommendation.

The SRR recommendation to consolidate the test contracts for NASA's four test sites was ultimately rejected by management at WSTF and PBS, citing concerns such as skepticism related to savings projections and perceived loss of control.<sup>2</sup> In November 2002, a follow-on acquisition strategy meeting was held, where it was decided to proceed with consolidation of only the SSC and MSFC contracts into the TOC. The TOC was awarded in 2003. NASA's test facility operations at WSTF and PBS continued to be supported independently by separate contracts that are not part of the TOC.

We found that NASA had adequately defined the test operations requirements at contract award for the TOC to protect against "out of scope" changes or cost growth.

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<sup>1</sup> Consolidation options and potential benefits were listed in archival PowerPoint charts without any supporting documentary evidence.

<sup>2</sup> Cited concerns related to WSTF and PBS rejecting the SRR recommendation were included in archival PowerPoint charts without any supporting documentary evidence.

Additionally, we found that Government surveillance and contractor performance evaluations for the TOC were providing reasonable assurance that efficient methods and effective cost controls were in use. We did not evaluate contract requirements definition or Government oversight of test support contracts at WSTF or PBS because those sites are supported by separate contracts that are independent of the TOC.

In our March 17, 2008, draft of this memorandum, we recommended that the Associate Administrator for the Space Operations Mission Directorate (SOMD), via the Manager, Rocket Propulsion Test Program (RPT), conduct a cost-benefit analysis to determine whether further consolidation of NASA's operations contracts for rocket propulsion testing into the TOC would be beneficial to the Agency. To facilitate further contract consolidation negotiations, the cost-benefit analysis should be conducted before the WSTF test support contract's completion date (April 29, 2009) and before exercising the next option year for the PBS test contract.

In response to the draft of this memorandum (see Enclosure 2), the RPT Manager concurred with the recommendation, stating that the RPT office will conduct the cost-benefit analysis and, based on the results and other decision criteria, recommend a TOC procurement strategy. Although management did not provide a timeframe for completing the cost-benefit analysis, management's comments are responsive and the recommendation is resolved. We will close the recommendation upon completion and verification of management's corrective action.

In addition, the GRC Director also provided comments on a draft of this memorandum. The GRC Director stated that in 2005 the Center had consolidated other GRC contracts for test operations resulting in contract commitments that could extend the contract into calendar year 2015, further recommending that the cost-benefit analysis be delayed until that contract nears completion. The GRC comments also included a concern that use of archival PowerPoint presentations to reflect the Center's reasons for opting out of the original TOC consolidation effort, without discussing GRC's position or rationale with senior management, resulted in an incomplete and misleading description of GRC's position.

Although we believe that additional GRC rocket propulsion test-related contract commitments negotiated subsequent to the 2002 TOC consolidation effort would be a factor in a cost-benefit analysis, those additional contract commitments should not preclude or delay the cost-benefit analysis effort. Therefore, we have not changed our recommendation.

As to our use of the PowerPoint presentation, during the course of our audit we were unable to locate any documentary evidence of GRC's position. However, at the GRC Director's suggestion, we provided GRC with an opportunity to provide additional information concerning its original position on the TOC consolidation efforts. In response to our request, the point of contact cited an almost complete turnover of leadership at GRC since 2002, which precluded his ability to provide additional

information or clarifications to the original GRC position indicated in the PowerPoint slides we referenced. As a result, we made no changes to the final report.

### ***Background***

NASA maintains four test sites for rocket propulsion systems and components. Those test sites are located at SSC, MSFC, WSTF, and PBS. SSC is NASA's primary Center for the testing and flight certification of rocket propulsion systems for the Space Shuttle and future generations of space vehicles, as well as for non-hypergolic, ambient/low-altitude testing. MSFC is the primary site for testing components designed and developed at MSFC and for testing cryogenic structural articles (tanks, ducts, etc.). WSTF, part of JSC, is the primary NASA site for altitude testing of small to medium test articles (up to 1,500 pounds of thrust) that do not use liquid oxygen or liquid hydrogen fuel. WSTF also does all hypergolic testing. PBS, part of GRC, is the primary NASA site for altitude testing of non-hypergolic medium to large test articles (1,000 to 400,000 pounds thrust) and does all liquid oxygen and liquid hydrogen testing.

The TOC is a consolidation of individual contracts previously in place for test support at SSC and MSFC. The management structure and scope of the TOC is a derivative of management evolution and contract consolidation reviews over the past decade. On May 30, 1996, the NASA Associate Administrator for the Office of Space Flight established SSC as the lead Center for rocket propulsion testing, with authority and responsibility for managing all of NASA's rocket propulsion testing assets, activities, and resources; developing testing and facility investments; consolidating capabilities and assets; and determining where tests are to be performed across the NASA Centers. Subsequently, on August 20, 1996, the SSC Director established the Rocket Propulsion Test Management Board (RPTMB) to review, approve, and provide direction on all rocket propulsion testing assignments, all capital investment recommendations, and annual budget requirements.

In 2001, the NASA Administrator instituted the SRR as an Agency-wide initiative with the authority to identify workforce and infrastructure capabilities that NASA would require to perform its mission in the 2001–2010 timeframe. Center Directors and senior Agency managers were normally the management officials responsible for SRR actions. On August 28, 2001, the NASA Administrator issued a memorandum, "Strategic Resources Review Offsite Meeting," that tasked each Center Director to provide candidates for commercialization, competitive sourcing, consolidation, partnerships, elimination, restructuring, and strengthening. In 2002, SRR #139 recommended consolidation of rocket propulsion testing contracts across NASA.

In May 2005, the NASA Deputy Administrator approved a Program Commitment Agreement<sup>3</sup> (PCA) establishing the RPT office at SSC that reported to the Associate Administrator for SOMD. Further, the PCA gave the Associate Administrator the authority to establish SOMD programmatic direction, determine long-term institutional investment strategies to ensure consistency with the Agency's Strategic Plan, and resolve disagreements that arise between Centers on program management and budget issues.

The RPT office manages the TOC, which supports the testing of rocket propulsion systems and components at both SSC and MSFC. However, the respective contracts for test operations at WSTF and PBS are separate contracts managed by each location. As such, the Agency maintains the following three separate contracts for rocket propulsion testing:

- the Test Operations Contract (contract NNS04AB62C) for testing at SSC and MSFC, with Sverdrup Technology, Inc. a subsidiary of the Jacobs Engineering Group, Inc.
- contract NNJ06HC01C for testing at WSTF, with Jacobs Technology, Inc.
- contract NAS3-00123 for testing at PBS, with Plum Brook Operations Support Group (PBOSG).

### ***Performing Sufficient Analysis for Test Operations Contract Consolidation***

We found that NASA had not performed sufficient analysis in determining which test sites to include in the TOC.

In 2002, SRR #139 considered consolidating test contracts across NASA. The SRR #139 team was headed by the SSC Deputy Director and included management representatives from SSC, MSFC, WSTF, PBS, JSC, and GRC. SRR #139 identified four consolidation options:

1. Consolidate only test personnel at each site.
2. Consolidate all personnel at WSTF and PBS, and consolidate only test personnel at SSC and MSFC.
3. Consolidate all personnel at WSTF and PBS, and consolidate all test and technical services contracts (TTSC) and test personnel at SSC and MSFC.

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<sup>3</sup> NASA Procedural Requirements 7120.5D, "NASA Space Flight Program and Project Management Requirements," March 6, 2007, Appendix A, "Definitions," defines a Program Commitment Agreement as the contract between the Associate Administrator and the cognizant Mission Directorate Associate Administrator that authorizes transition from formulation to implementation of a program.

4. Consolidate all personnel at MSFC, WSTF, and PBS, and consolidate all TTSC and Facility Operations Services Contract personnel at SSC.

SRR #139 recommended that the contracts be consolidated based on Option 2, citing potential benefits that included approximately \$70 million in savings, more competition, and fewer Source Evaluation Boards. The RPTMB drafted a directive to consolidate test contracts at all four sites (SSC, MSFC, WSTF, and PBS) in order to achieve efficiencies and provide improved sharing of personnel and resources. However, the draft directive (2002-MB-0146-DO) was not released, and the four-site consolidation did not occur. There is insufficient file data or documentation to ascertain why the directive to consolidate all test contracts was not released. Even though the SRR contract consolidation review effort included representation from all rocket propulsion testing sites, information contained in archival PowerPoint presentations related to SRR #139 indicates that WSTF management ultimately did not support the consolidation initiative due to professed skepticism of the savings potential, feared disruption of WSTF activities, and was concerned about losing the support of JSC. The PowerPoint presentation archive also indicates that although PBS was supportive of the consolidation, GRC was not. GRC wanted to consolidate its testing contracts for PBS and wind tunnels, perceived it would lose control, and had concerns about Small Business Administration 8(a) set-asides.

In November 2002, a follow-on acquisition strategy meeting was convened, where it was decided to proceed with consolidation of only the SSC and MSFC contracts into the TOC. We were unable to find data related to projected cost savings or other benefits of the SSC and MSFC contract consolidation into the TOC and, as such, cannot ascertain the projected or attained benefit to the Agency.

Although NASA conducted some analysis of test consolidation alternatives in 2002 prior to the execution of the current TOC contract, we found that NASA's decision-making analyses leading to the consolidation of SSC and MSFC under the TOC, or to exclude WSTF and PBS from the TOC, lacked the rigor recommended by OMB. We were unable to obtain any evidence that NASA verified initial assumptions, costs, or benefits associated with the TOC consolidation initiative. OMB Circular A-94 clearly recognizes the Government's need to apply sound business practices to support programmatic decisions. OMB Circular A-94 states that a cost-benefit analysis is the recommended technique to use in a formal economic analysis of Government programs or projects. A cost-benefit analysis is a technique for deciding whether to make a change in existing program structure. The analysis documents and weighs the value of the benefits of a course of action against the costs associated with that action. Cost-benefit analysis seeks to translate all relevant considerations into monetary terms. Documentation of the analysis should be maintained to support the resulting decisions and recommendations, as well as to provide a basis for subsequent review to confirm attainment of projected benefits.

Further, NASA recognized the importance of OMB Circular A-94's economic analysis guidelines in the Deputy Administrator's March 13, 1997, memorandum, "Cost/Benefit

Analyses,” and more recently in the “NASA Business Case Guide for Facilities Projects” dated April 20, 2006. The March 13, 1997, memorandum on cost-benefit analyses states in part that “a key element in our decision making must be independent, upfront cost-benefit analyses” when considering issues related to consolidation, downsizing, outsourcing, and research or program elimination. NASA’s April 20, 2006, Business Case Guide, although focused on facilities projects, recommends that the guidance outlined in OMB Circular A-94 “serve as a checklist of whether an agency has considered and properly dealt with all the elements for sound benefit-cost and cost-effectiveness analyses.”

NASA management will have an opportunity to perform and use cost-benefit analysis techniques to support the decision regarding consolidation of the Agency’s contracts for rocket propulsion testing operations.

The TOC had a base period of performance from September 1, 2004, through August 31, 2006, and two 2-year priced options that could extend the contract through August 31, 2010. The WSTF contract runs from February 28, 2006, through April 30, 2009, and has two 1-year options. PBS’s contract had a base period of August 1, 2000, through July 31, 2003, and seven 1-year options, through July 31, 2010.

Within existing contract performance and option periods, it is feasible that management could effectively complete a cost-benefit analysis in accordance with OMB Circular A-94 to examine further test consolidation options if the analysis is initiated immediately and completed by April 2009. Conduct of the cost benefit analysis prior to April 2009 would facilitate TOC negotiations within existing TOC, WSTF, and PBS contract expiration dates or option year execution. A formal cost-benefit analysis may reveal options that could allow NASA to avoid costs in contract services and management oversight.

### ***Defining Test Operations Requirements at Contract Award***

We found that NASA had adequately defined the test operations requirements at TOC award to protect against “out of scope” changes or cost growth. Specifically, we did not find any examples of increased contract cost due to the addition or expansion of rocket propulsion testing requirements subsequent to contract award. The scope of work for the consolidated TOC provides for propulsion test support activities at SSC and MSFC and was taken from previous contracts: TTSC NAS13-650 at SSC and test operations and support contract NAS8-98099 at MSFC. SSC’s contracting for test operations began in 1971; MSFC’s in 1989. As such, contract requirements for test operations had matured and were stable at the time of consolidation into the TOC award.

We identified five contract modifications that were issued under the Federal Acquisition Regulation (FAR) 52.243-2, “Changes-Cost Reimbursement,” clause. None of the modifications resulted in an increased contract value. Specifically, modification #2 authorized contract phase-in; modification #5 adjusted the period of performance to account for contractor work stoppage created by a protest filed with the Government Accountability Office (GAO); modification #8 changed the Overtime Premium schedule

due to an administrative error; modification #16 changed the provisional billing rates; and modification #28 reflected a decrease in propulsion test programs at SSC's E Complex and reduced the contract value for the base period.

### ***Ensuring Efficient Methods and Effective Cost Controls***

We found that Government surveillance and contractor performance evaluations were providing reasonable assurance that efficient methods and effective cost controls were in use. SSC established a Quality Assurance Surveillance Plan, effective September 2004, under the terms of the TOC. Quality assurance surveillance is performed by a NASA contracting officer's technical representative (COTR) and the Defense Contract Management Agency (DCMA). Surveillance responsibilities include monitoring Safety and Technical Performance<sup>4</sup> along with Cost Control and Business Management. We found that the COTR and DCMA were performing their surveillance duties and reporting the results to the contracting officer in accordance with the Quality Assurance Surveillance Plan. Based on these surveillance reports, the TOC contractor received high ratings from the Performance Evaluation Board in the areas of Safety and Technical Performance and Cost Control and Business Management.

### ***Management's Comments on the Finding and Evaluation of Management's Comments***

Management's response to a draft of this memorandum included comments from the GRC Director (see Enclosure 2) concerning additional contract commitments for PBS testing activities, GRC's original position on contract consolidation, and lessons learned from other contract consolidations.

**Management's Comments on the PBS Contract.** The GRC Director stated that while the PBS contract we cite (NAS3-00123, the PBOSG contract) does have a July 31, 2010, completion date for the last award term year, the contract obligations for test operations at PBS do not expire on July 31, 2010. The Director stated that GRC performed its own contract consolidation of testing activities in 2005, which resulted in the award of a contract to Sierra Lobo (NNC05CA95C, the Test Facilities Operations, Maintenance, and Engineering [TFOME] contract). This contract supports testing at both the GRC main campus and at PBS. PBOSG activities are included in the TFOME contract as Phase C work, which is not optional work. Consequently, GRC is contractually bound to provide the work to Sierra Lobo unless GRC officially descopes the work or the contractor does not perform in a manner to earn award term years. The TFOME contract has award term provisions that can extend the contract to 2015. Attempts to descope the work could potentially lead to a contractor claim in accordance with the contract's "Disputes" clause. The GRC Director recommended delaying a cost-benefit analysis to determine whether

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<sup>4</sup> Safety and technical performance is an evaluation factor for which the contractor receives a rating based on the overall project management, use of resources, timeliness, and quality of the services delivered.

PBS test operations should be incorporated into the TOC until the TFOME contract is nearer the end of its award term years.

**Evaluation of Management's Comments.** Additional contract commitments would be a factor in a cost-benefit analysis; however, the TFOME contract commitments should not preclude or delay the cost-benefit analysis effort. A cost-benefit analysis conducted in accordance with OMB Circular A-94 will consider all pertinent costs and benefits from consolidating NASA's test contracts, to include all existing contract commitments. We understand that the extended commitments associated with the new contract may affect the implementation dates of additional cross-Center contract consolidations that may be supported by the cost-benefit analysis. However, since existing contracts have known deliverables, base periods, and option years, factors related to those contracts may be included within a cost-benefit analysis conducted at any time.

**Management's Comments on GRC's Position on Consolidation.** The GRC Director commented on our use of archival PowerPoint slides to document that GRC did not support consolidation and our listing of GRC's reasons for not supporting consolidation. The Director noted that the PowerPoint slides were from 2002 and had been prepared by SSC, stating that our use of such documentary evidence without discussing GRC's position or rationale with senior management at GRC provides an incomplete and misleading description of GRC's position on contract consolidation. The GRC Director recommended that a discussion with GRC occur or the references to GRC's rationale for not supporting consolidation be deleted.

**Evaluation of Management's Comments.** On April 16, 2008, in an effort to include additional information on GRC's position on consolidation at the time of the Agency's 2002-2003 TOC discussions, we asked the point of contact designated by the GRC Director to provide additional documentation to us by April 22. However, the point of contact was unable to provide additional documentation, citing the almost complete turnover of GRC leadership since 2002. Consequently, this final memorandum retains the archival PowerPoint references in order to provide rationale for the Agency not implementing earlier recommendations to consolidate contracts for test operations.

**Management's Comments on Contract Consolidation Lessons Learned.** The GRC Director stated that GRC supports Agency efforts to achieve efficiencies and minimize duplication, but that NASA's own experience with contract consolidations, as evidenced by the Systems Engineering and Institutional Transitions Study performed in the fall of 2005, has shown that contract consolidation is not always the best answer. The Director noted that "contract consolidations can make sense when the focus is on compatible requirements, is based on integrated strategic planning, and is structured to be responsive to discrete projects and differences in geographic locations." The GRC Director recommended that our final report address the lessons learned from previous contract consolidations, such as the Consolidated Space Operations Contract (CSOC), the Space Flight Operations Contract (SFOC), Center Operations Support Services (COSS), and Base Operations Support Services (BOSS).

**Evaluation of Management's Comments.** Lessons learned from previous contract consolidations may be considered within the context of the recommended cost-benefit analysis, but the evaluation of earlier consolidation efforts, particularly consolidations not related to rocket propulsion testing activities, is outside the scope of this audit. Therefore, a review and analysis of other NASA consolidation efforts unrelated to TOC are not included in this report.

***Recommendation, Management's Response, and Evaluation of Management's Response***

The SOMD Associate Administrator, via the RPT Manager, should conduct a cost-benefit analysis in accordance with OMB Circular A-94 before the WSTF contract expires on April 30, 2009, and before exercising the next option year for the PBS contract, to determine whether it is feasible and financially prudent to further consolidate NASA's test contracts.

**Management's Response.** The RPT Manager concurred, stating that the RPT office will conduct a cost-benefit analysis with a scope including all RPT areas of responsibility and, based on the results and other decision criteria, recommend a TOC procurement strategy.

**Evaluation of Management's Response.** Management's planned action is responsive. Although management did not provide a timeframe for completion of the cost-benefit analysis, we consider the recommendation resolved and will close it upon completion and verification of management's corrective action.

We appreciate the courtesies extended during our audit. If you have any questions, or need additional information, please contact Mr. Vincent Scott, Procurement Director, Office of Audits, at 202-358-0546.

signed

Evelyn R. Klemstine

2 Enclosures

## Scope and Methodology

We performed this audit from August 2007 through March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives.

We conducted fieldwork at SSC in Mississippi. Our audit focused on a review of NASA's pre-award analyses to support its decision for consolidating rocket propulsion testing operations under the TOC and management of the TOC. We reviewed OMB Circular A-94, which provides guidelines related to cost-benefit analyses.

Audit research was limited due to lack of available documentation for SRR and RPTMB contract consideration, reviews, and activities in 2002. However, we believe that the audit evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

To determine whether NASA had adequately defined test operations requirements to protect against "out of scope" changes or cost growth, as well as determine whether Government surveillance and contractor performance evaluations were ensuring efficient methods and effective cost controls were in use, we

- interviewed RPT and SSC procurement personnel;
- interviewed the TOC COTR;
- reviewed the contract files for the TOC (September 2004–August 2007);
- reviewed NASA Form 533M reports (September 2004–July 2007);
- reviewed surveillance reports submitted to the contracting officer by the COTR and DCMA (September 2004–August 2007); and
- reviewed the Performance Evaluation Board evaluations (September 2004–August 2007).

To determine whether NASA had performed sufficient analysis to justify separate contracts for test operations at WSTF and PBS and for consolidating contracts at SSC and MSFC into the TOC, we also reviewed the record of the January 2002 deliberations of the SRR #139 team; documentation of the November 2002 TOC Acquisition Strategy Meeting, which summarized management discussions regarding the consolidation of test contracts across NASA; and the TOC budget planning sessions.

**Computer-Processed Data.** We did not use computer-processed data to perform this audit.

**Review of Internal Controls.** We reviewed and evaluated the internal controls associated with procurement planning and contract administration. Also, we examined policies and regulations for developing internal control techniques, to include the NASA Self-Assessment Guide and two SSC self-assessments performed at that Center covering the periods May 1, 2006, through September 30, 2006, and October 1, 2006, through March 31, 2007.

We found that management did not perform sufficient analysis in determining the scope and benefit of the TOC. Management action taken in response to our recommendations should correct this finding.

**Prior Coverage.** During the last 5 years, the Government Accountability Office has issued one report of particular relevance to the subject of this report: “Lack of Disciplined Cost-Estimating Processes Hinders Effective Program Management” (GAO-04-642, May 2004). Unrestricted reports can be accessed over the Internet at <http://www.gao.gov>.

## Management's Comments

National Aeronautics and  
Space Administration  
**John C. Stennis Space Center**  
Stennis Space Center, MS 39529-6000



April 15, 2008

Reply to Attn of: TA00

TO: Assistant Inspector General for Auditing  
FROM: Manager, Rocket Propulsion Test Program  
SUBJECT: Draft Memorandum on the Audit of NASA's Management of the Test Operations Contract (Assignment No. A-07-016-00)

Thank you for the opportunity to review the draft memorandum on the audit of NASA's management of the Test Operations Contract. During the review process, input was provided by Glenn Research Center (GRC), Johnson Space Center (JSC), Stennis Space Center (SSC), and the Rocket Propulsion Test Program (RPT).

We concur with the recommendation to conduct a cost-benefit analysis with a scope including all RPT areas of responsibility in accordance with guidelines outlined in OMB Circular A-94. The RPT will be responsible for its conduct and will utilize the results, along with other relevant decision criteria, to recommend a Test Operations Contract procurement strategy.

It should be noted that GRC has provided detailed comments they wish to be considered in the final report. The comments are provided as an attachment.

We thank you for the courtesy of the team that conducted the audit. If you have any questions, or need additional information, please contact Mike Cockrell, Deputy Manager, Rocket Propulsion Test Program, at (228) 688-2683.

A handwritten signature in black ink, appearing to read "Roger Simpson".

Roger Simpson

Enclosure:

cc:  
Associate Administrator for Space Operations Mission Directorate/Mr. Gerstenmaier  
Assistant Administrator for Procurement/Mr. McNally  
Space Operations Mission Directorate /Mr. Wrobel  
Space Operations Mission Directorate /Mr. Kelly  
SSC/AA00/Mr. Cabana  
SSC/DA00/Ms. Dupuis  
MSFC/DA01/Mr. King  
GRC-PBS/Z000/Mr. Stringer  
WSTF/RA/Mr. Benz

National Aeronautics and  
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April 11, 2008

Reply to Attn of: **Plum Brook Management Office**

**TO:** NASA Headquarters  
Attn: Associate Administrator for Space Operations Mission Directorate

**FROM:** Director

**SUBJECT:** Glenn Research Center's Response to the NASA Office of Inspector (OIG) Draft Memorandum, "Audit of NASA's Management of the Test Operations Contract (TOC)," (Assignment No. A-07-016-00)

The Glenn Research Center (GRC) has the following comments concerning the OIG draft memorandum on the Audit of NASA's Management of the TOC, which we believe should be included in the consolidated management response to the OIG.

First, the OIG draft report indicates that GRC's contract for test operations at Plum Brook Station (PBS) expires on July 31, 2010. Based in part on this contract completion date, the draft report states, "Within existing Rocket Propulsion Test (RPT) contract performance and option periods, it is feasible that management could effectively complete a cost-benefit analysis in accordance with OMB Circular A-94 to examine further RPT consolidation options if the analysis is initiated immediately and completed by April 2009. Conduct of the cost-benefit analysis prior to April 2009 would facilitate TOC negotiations within existing TOC, White Sands Test Facility, and PBS contract expiration dates or option year execution. A formal cost-benefit analysis may reveal options that could allow NASA to avoid costs in contract services and management oversight."

The contract the OIG cites in its draft report, NAS3-00123, the Plum Brook Operations Support Group (PBOSG) contract, does have a July 31, 2010, completion date for the last award term year. However, GRC's contract obligations for test operations at PBS do not expire on July 31, 2010. The Glenn Research Center performed its own contract consolidation of testing activities in 2005, which resulted in the award of the Test Facilities Operations, Maintenance, and Engineering (TFOME), NNC05CA95C, contract to Sierra Lobo. This contract supports testing at both the GRC main campus and PBS. The current PBOSG activities are included in the current TFOME contract. This contract has award term provisions that can extend the contract to 2015. The work is included as Phase C work which means current scope and cost are included in contract value. It is not optional work. Consequently, GRC is contractually bound to provide the work to Sierra Lobo unless we officially descope the work or the contractor does not perform in a manner to earn award term years. Descoping the work would involve bilateral

negotiations with Sierra Lobo. Unilaterally, attempts to descope could potentially lead to a contractor claim per the contracts "Disputes" clause. **Consequently, GRC recommends that a cost-benefit analysis to determine whether the PBS test operations should be incorporated into the Stennis Space Center (SSC) TOC not be performed until the existing contract is nearer its completion.**

Second, based on a 2002 PowerPoint presentation prepared by SSC, the OIG draft memorandum states that PBS supported consolidation, but GRC did not. The draft memorandum goes on to list the GRC reasons for not supporting consolidation. However, the OIG did not perform any audit work at GRC and did not discuss the Center's position or rationale with GRC senior management. While a PowerPoint chart is clearly documentary evidence for an audit, it is evidence with a built-in limitation. By necessity, such charts contain abbreviated or partial information that require further explanation. By not discussing the issues and findings with GRC senior management, the OIG draft report provides an incomplete and misleading description of the Center's position on consolidating test operations. **The Glenn Research Center recommends that this discussion occur or the references to the GRC rationale for not supporting consolidation be deleted from the final report.**

The Glenn Research Center supports Agency efforts to achieve efficiencies and minimize duplication. However, NASA's own experience with contract consolidations [Consolidated Space Operations Contract (CSOC), Space Flight Operations Contract (SFOC), Center Operations Support Services (COSS), and Base Operations Support Services (BOSS)], as evidenced by the Systems Engineering and Institutional Transitions (SEIT) Study performed in the fall of 2005, has shown that contract consolidation is not always the best answer. Contract consolidations can make sense when the focus is on compatible requirements, is based on integrated strategic planning, and is structured to be responsive to discrete projects and differences in geographic locations. **The Glenn Research Center recommends that the final report address the lessons learned from previous contract consolidations.**

If you have any questions concerning this response, please contact Mr. David L. Stringer, Director, Plum Brook Management Office, at (216) 433-3579.



Woodrow Whitlow, Jr.

cc:  
Office of Inspector General  
• E. R. Klemstine  
SSC/DA/S. D. Dupuis  
TA/J. M. Cockrell