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November 3, 1998

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FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on the Audit of NASA X-33 Funding Issues at MSFC
Assignment Number A-HA-98-002
Report Number IG-99-001

The subject final report is provided for your use and comments. Please refer to the executive summary for the overall audit results. We incorporated management's comments into the final report, as appropriate, and included them in their entirety as an appendix to our report. Our evaluation of your response is incorporated into the body of the report. The planned corrective action, a study of X-33 funding and payment practices, is responsive to the intent of recommendation 1a. Upon completion of the planned study, we request you submit a copy of the overall results and provide additional comments identifying corrective actions taken or planned on each of the other recommendations. All recommendations will remain open for reporting purposes until we evaluate study results and the adequacy of corrective actions.

If you have questions concerning the report, please contact Ms. Karen VanSant, Program Director, Aeronautics and Space Transportation Audits, at (256) 544-1149, or Mr. Jim Linville, Auditor-in-Charge, at (256) 544-0971. We appreciate the courtesies extended to the audit staff. See Appendix L for the report distribution.

[original signed by Lee T. Ball for]
Russell A. Rau

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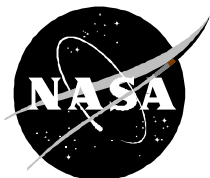
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IG-99-001

AUDIT REPORT

X-33 FUNDING ISSUES

November 3, 1998



National Aeronautics and
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ACRONYMS

CFO	Chief Financial Officer
FMM	Financial Management Manual
FY	Fiscal Year
GAO	General Accounting Office
LMSW	Lockheed-Martin Skunk Works
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration
NPD	NASA Policy Directive
OIG	Office of Inspector General
RLV	Reusable Launch Vehicle
USC	United States Code

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EXECUTIVE SUMMARY

INTRODUCTION

The X-33 Program is a National Aeronautics and Space Administration (NASA)/industry joint effort to further develop and demonstrate technologies needed to build a Reusable Launch Vehicle (RLV) to replace the Space Shuttle. NASA awarded Cooperative Agreement NCC8-115 on July 2, 1996, requiring NASA and industry shared resource contributions of \$1.1 billion, to Lockheed-Martin Skunk Works (LMSW). Five industry and 14 Government partners are working together on the X-33 cooperative agreement.

NASA provides funds to industry partners through more than 160 periodic payment milestones specified in the cooperative agreement. For each payment milestone, NASA and LMSW agreed on a value (\$8,000 to \$75 million), a payment date (estimated completion date), and performance criteria for determining milestone completion. For LMSW only, the milestones specify both an estimated completion date and a later "billing date." From July 1996 through December 2000, NASA will pay \$912 million (about 80 percent) for the X-33,¹ and LMSW and other industry partners will pay about \$211 million (about 20 percent).²

OBJECTIVES

The overall audit objective was to determine whether NASA's use of a cooperative agreement on the X-33 Program was an appropriate management approach for this major launch vehicle program and whether the agreement effectively defined roles, responsibilities, and rights of the Government and industry partners. Our conclusions on the overall audit objective are not addressed in this report but will be provided in a subsequent report. A subobjective was to determine whether NASA's implementation and management of the X-33 Program are consistent with congressional guidance. In this regard, we evaluated the appropriateness of NASA's X-33 funding concept to determine whether it adversely affected Agency reports and financial statements submitted to Congress and whether it complied with congressionally mandated fund controls,

¹ The X-33 Program and most of the related RLV work is scheduled to be completed in 42 months - by December 1999. A small RLV effort, requiring about \$31 million in NASA funding, will continue through December 2000.

² OIG Partnerships and Alliances Report, P&A-97-001, "NASA Cooperative Agreements with Large Commercial Firms," dated August 22, 1997, addressed the high NASA contribution (80 percent) in relation to that of the industry partners (20 percent). The report also noted that the NASA contribution is understated because certain noncash contributions are not included in NASA's contribution.

including the Antideficiency Act. This audit report provides our conclusions on this subobjective.

See Appendix A for additional information on audit scope and methodology. Appendix B identifies prior related Office of Inspector General (OIG) audits and other reviews of NASA's Reusable Launch Vehicle Program, which includes the X-33.

RESULTS OF AUDIT

Obligations of funds on the X-33 Program were not recorded in a timely manner, resulting in potential violations of fiscal statutes, including the Antideficiency Act and the Agency fund control system. Specifically, Marshall Space Flight Center (MSFC) established an arrangement with LMSW, within the X-33 cooperative agreement, to delay billing for completed and Government-accepted milestones until the following fiscal year (FY). MSFC concluded that, under this arrangement, an obligation does not occur until LMSW submits an invoice for payment and that the Limitation of Government Obligation provisions within the cooperative agreement ensures this arrangement is compliant with fiscal statutes. In our opinion, an obligation occurs and should be recorded not later than NASA's acceptance of the completed milestone work. For X-33 partners other than LMSW, NASA obligates funds on the cooperative agreement **before** work is performed and adjusts funding as work progresses. As a result of the funding practice for LMSW milestones, MSFC had unrecorded yearend obligations, costs, and liabilities totaling \$22 million in FY 1996 and \$34 million in FY 1997. Therefore, MSFC and Agency reports and financial statements did not accurately reflect the financial status of the X-33 Program.

RECOMMENDATIONS

We recommended that:

- NASA review the funding and payment practices used on the X-33 Program to:
 - determine whether the use of current year funds to pay for work completed and accepted in prior years constitute violations of the Agency fund control system or the Antideficiency Act;
 - determine availability of funds to cover unrecorded obligations for completed milestone work; and
 - identify needed corrective actions to ensure that

obligations are promptly recorded and billings are not delayed.

- NASA adjust financial records, as appropriate, to ensure that MSFC and Agency yearend financial reports and statements fully and accurately disclose the financial status of the X-33 Program, including any contingent liabilities.

***MANAGEMENT'S
RESPONSE***

Management partially concurred with Recommendation 1, agreeing only to do a study of the appropriateness of existing X-33 funding and payment practices. Management did not concur with any of the remaining recommendations for specific corrective actions, pending completion of the study in December 1998. Management agreed to take corrective actions deemed appropriate by the completed study.

***EVALUATION OF
MANAGEMENT'S
RESPONSE***

Management's planned actions are responsive to the intent of Recommendation 1a. Upon completion of the study, we request that management submit a copy of the study results and provide additional comments identifying corrective actions taken or planned on each recommendation. We will keep all recommendations open and review the responsiveness and adequacy of management's corrective actions upon completion of the study.

FINDINGS AND RECOMMENDATIONS

MILESTONE PAYMENTS EXCEED AVAILABLE FUNDING

MSFC's funding practice on the X-33 Program inappropriately allowed industry partners to delay billings for completed work and allowed MSFC to make current year milestone payments with next year's funds. MSFC used this questionable funding practice because NASA budgets did not provide needed funds for the early years of the X-33 Program. The funding practice did not comply with Federal and NASA regulations; risked noncompliance with the Antideficiency Act, including potential violations of the Agency fund control system; and resulted in unrecorded yearend obligations, costs, and liabilities of \$22 million in FY 1996 and \$34 million in FY 1997.

The unrecorded obligations exceeded unobligated funds available at MSFC and NASA Headquarters at the contract, unique project number, and budget line item levels. Additionally, MSFC and Agency reports and yearend financial statements did not accurately reflect X-33 Program financial status due to the unrecorded obligations, costs, and liabilities. MSFC also did not record the completed but unpaid milestones as a contingent liability.

Agreement Delayed Billing for Completed Work

To avoid a funding shortfall (see Appendices C and D), MSFC and LMSW agreed that LMSW would delay billing until December each year. In December, LMSW bills NASA for the milestones completed during the prior 12 months (December through November).³ MSFC generally delayed recording obligations, costs, and liabilities for LMSW milestone work completed in one fiscal year until NASA received funding for the next fiscal year. However, MSFC officials acknowledged funding was sometimes available at the time MSFC accepted LMSW milestone work.

- On August 26, 1996, when LMSW completed work on payment milestone L-2 (\$11,533,732) and notified NASA that work had been completed, MSFC had available funding (uncosted obligations) of more than \$22 million on the X-33 cooperative agreement.
- On January 22, 1997, when LMSW completed work on milestone L-6 (\$11,693,128) and notified NASA, MSFC had

³ The X-33 Cooperative Agreement identifies a "Government Fiscal Year" of December through November for payment purposes.

available funding of more than \$58 million on the cooperative agreement. When NASA accepted the work on April 29, 1997, MSFC had available funding of more than \$65 million.

However, MSFC officials did not use funds available to accrue costs for completed milestones because they believed that the cooperative agreement for the X-33 Program and the delayed billing agreement with LMSW did not require them to do so. Also, MSFC planned to use available current fiscal year funds to make scheduled milestone payments to other industry partners.

***Federal Statutes
Regulate Use Of
Funding***

Several statutes provide controls over the use of appropriated funds.

- The bona fide needs rule, 31 United States Code (USC) 1502, governs the availability of appropriations. It specifies, “. . . [a] fiscal year appropriation may only be obligated to meet a legitimate . . . need arising in . . . the fiscal year in which the appropriation was made.”
- The Antideficiency Act, 31 USC 1341, prohibits obligating in excess or advance of available appropriations.

Appendix E provides details on the Federal regulations.

Bona Fide Needs Rule

Under the bona fide needs rule, Federal agencies must use funds to meet needs of the fiscal year for which Congress appropriated the funds. Because NASA has a bona fide need for LMSW to complete each X-33 milestone in the fiscal year scheduled, the use of the next fiscal year's funds does not comply with Federal statutes. Three Comptroller General decisions⁴ issued by the General Accounting Office (GAO) concluded that the bona fide needs rule applies to cooperative agreements. Therefore, MSFC's funding practice is contrary to the bona fide needs rule because NASA accepted completed milestone work in one fiscal year, thereby incurring obligations, but used next fiscal year funds to pay for the work. The funding practice also fails to ensure timely recording of obligations.

Antideficiency Act

The Antideficiency Act prohibits making obligations in advance of receiving appropriations. To avoid a funding shortfall, MSFC planned and actually paid for milestone work completed and accepted in one year with the following year's appropriation. The

⁴ Comptroller General Decisions B-229873, November 29, 1988; B-235678, July 30, 1990; and B-240264, February 7, 1994.

GAO “Principles of Federal Appropriations Law”⁵ states, “An agency which tries to meet a current shortfall by ‘borrowing’ from (i.e., obligating against) the unenacted appropriation for the next fiscal year is clearly obligating in advance of an appropriation.” The MSFC funding concept for the X-33 resulted in a potential violation of the Antideficiency Act.

***NASA’s Administrative
Fund Control System***

MSFC’s funding concept for the X-33 Program resulted in several potential violations of the Agency’s administrative fund control system. Specifically, unrecorded obligations for completed and/or accepted LMSW milestones exceeded FYs 1996 and 1997 yearend available funding at Agency fund control levels including (1) budget line item, (2) unique project number, and (3) contract (cooperative agreement). Potential violations occurred at MSFC and at NASA Headquarters. For example, as of September 30, 1997, MSFC had accepted work on three completed LMSW milestones with a total value of \$34.172 million.⁶ However, MSFC’s unobligated balances of the Science, Aeronautics and Technology appropriation, at contract, unique project number, and budget line item levels, were not sufficient to cover these unrecorded obligations. Similarly, unobligated fund balances at NASA Headquarters were not sufficient at either unique project number or budget line item levels to cover these LMSW milestones. MSFC and Headquarters did have sufficient funds at the allotment and appropriation levels, respectively.

NASA Policy Directive (NPD) 9050.3D⁷ establishes procedures for the Agency’s implementation of an administrative fund control system as required by 31 USC 1514 and Office of Management and Budget Circular A-34, “Instructions on Budget Execution,” dated November 7, 1997. The NPD states that obligations or expenditures in excess of established limits violate the Agency fund control system and should be reported to the NASA Chief Financial Officer (CFO). The NPD also states, “The NASA CFO will fix responsibility for the violation and recommend appropriate action to the Administrator.” (Additional information on NASA’s fund control system is in Appendix F.)

⁵ U. S. General Accounting Office, Principles of Federal Appropriations Law 6-13, 1992.

⁶ LMSW FY 1997 payment milestones 10, 11, and 15.

⁷ Administrative Control of Appropriations and Funds, dated January 22, 1997.

Recording and Reporting Obligations and Costs

MSFC's funding practice resulted in unrecorded obligations, costs, and liabilities and, therefore, inaccurate Agency financial reports for FYs 1996 and 1997.⁸ At FY 1997 yearend, MSFC had not recorded obligations, costs, and liabilities of \$34 million for work LMSW had completed and NASA accepted. Completion occurred when MSFC's X-33 Program Office accepted the work. (See obligation guidelines in Appendices E and G.) The cumulative unrecorded obligations, costs, and liabilities through FY 1997 would have been higher, about \$150 million (see Appendix D), except for schedule delays⁹ and receipt of additional yearend funding of about \$20 million. Using available FY 1997 funds at yearend, MSFC recorded about \$50 million of obligations, costs, and liabilities for some FY 1997 milestones LMSW completed as early as January 1997.

Inaccuracies in the financial status of the X-33 Program were not limited to yearend reports. Throughout FY 1997, financial records did not accurately reflect the financial status of the X-33 Program because MSFC did not record obligations, costs, and liabilities for completed and accepted LMSW milestones. For example, as of July 1997, MSFC had not recorded obligations and costs for completed and accepted work totaling more than \$70 million.

MSFC Officials Believe Funding Practice Is Appropriate

MSFC officials maintained that the funding practice used on the X-33 Program was appropriate and that MSFC was not liable for payment of completed LMSW milestones for the following reasons:

- The cooperative agreement contained limitations of fund clauses.¹⁰ The clauses put LMSW rather than MSFC "at risk" for the X-33 funding shortfall in the event Congress did not appropriate funds for the program in the next fiscal year and NASA was unable to pay LMSW for completed work.
- MSFC and LMSW had agreed that LMSW would delay billing NASA for completed payment milestones. LMSW would bill NASA annually in December (when NASA had received next

⁸ Our review focused primarily on the FY 1997 transactions.

⁹ Work on \$56 million of FY 1997 scheduled payment milestones was not completed and accepted prior to yearend.

¹⁰ NCC8-115, para. 7(b) and (c), 13, 14(a) and (b), 18(c) and (d). See Appendix E.

year funding) for those milestones completed during the prior 12 months. MSFC maintained that no obligation existed prior to the annual December billing.

- MSFC officials believed that the bona fide needs rule did not apply to individual X-33 cooperative agreement milestones, only to the entire X-33 Program.

Further details on the Center's position are provided in Appendix H.

MSFC's Positions Are Questionable

We do not agree with MSFC's positions regarding (1) protection provided by the limitation of funds clause, (2) use of billing as a criterion for obligating funds, and (3) exemption of X-33 milestones from the bona fide needs rule. Additionally, NASA has a need and mission responsibility for the X-33 Program.

Limitation of Funds Clause

The limitation of funds clause neither limits the Agency's overall obligations to LMSW nor permits the Center to avoid liability for individual milestones accepted by NASA, especially when funds are available on the cooperative agreement. MSFC actions established a commitment to pay LMSW for accepted X-33 milestone work by:

- requiring LMSW to meet original milestone completion dates even though billing is delayed,
- requiring further effort by LMSW before MSFC will accept milestone work ("deliverable") as complete,¹¹
- documenting NASA's acceptance of completed LMSW milestone work and advising the MSFC Grant Officer and LMSW of acceptance, and
- giving LMSW assurances during negotiations that NASA was committed to the X-33 Program and to full payment each December.

Incremental Funding. The MSFC position that obligated funds on the X-33 cooperative agreement cannot be used for unbudgeted¹²

¹¹ MSFC determined work was initially "unacceptable" on 10 of the 16 LMSW milestones completed in FY 1997.

¹² Scheduled for completion in one fiscal year, but billing and payment delayed until next fiscal year due to fund shortage.

LMSW milestones is inconsistent with Agency guidance on incrementally funded instruments. The CFO maintains that MSFC cannot be held liable for milestones completed by LMSW, as scheduled, if the Center did not plan (budget) to pay such milestones in the year completed due to the delayed billing arrangement. MSFC incrementally funds the X-33 cooperative agreement; however, MSFC does not identify the obligated funds to a specific industry partner, milestone, or task. NASA Financial Management Manual (FMM) 9041-12.a(1)(c), "Adjustment of Orders, Agreements, and Other Contractual Documents," dated February 1997, states, "Unless the contract states otherwise, the amount of the funding increment is not related to any individual item in the contract." The Agency incurs an obligation, cost, and a liability (payable) at the time MSFC accepts work on a completed milestone and must promptly record it, even if obligated funds were not budgeted for that particular milestone.

NASA Controls Funding. To a large extent, NASA controls the availability of funds for the X-33 Program. The Science, Aeronautics, and Technology funds Congress appropriated for Fys 1996 and 1997 did not specify an amount for the X-33 Program. Instead, NASA determined the amount of funding the Agency allocated to various programs. Additionally, NASA is aware of planned milestones for each year and can estimate funding needed to cover those milestones. During Reusable Launch Vehicle Phase I, MSFC prepared independent Government cost estimates on the X-33. Therefore, NASA should have known approximate X-33 annual funding requirements. However, NASA budgets did not provide the funding level that Agency guidelines indicated would be required in the program's early years (see Appendix C). Therefore, NASA should not attempt to use "limitation of funds" language to avoid its fiscal responsibilities.

Recording Obligations

MSFC cannot delay recording an obligation for accepted milestones until LMSW bills the Center. The X-33 cooperative agreement¹³ identifies "submission of invoice" as a step in the process for the Grant Officer to authorize payment of a milestone. However, "billing," or arrival of the billing date, is not an appropriate prerequisite to the creation of an obligation to pay for accepted milestones. This portion of the cooperative agreement outlines only the "payment" process, not NASA's "obligation" process. Billing

¹³ NCC8-115, para. 7(c).

does not create the commitment to pay; it merely establishes a time to pay. GAO has maintained that billing does not create an obligation that does not otherwise exist. As explained in the GAO “Principles of Federal Appropriations Law,”¹⁴ “The basic principle is that compliance with the Antideficiency Act is determined on the basis of when the obligation occurs, not when actual payment is scheduled to be made.”

MSFC Accounting Procedures. MSFC procedures for recording X-33 obligations, costs, and liabilities are not consistent. MSFC does not use the same criteria for all the X-33 industry partners or even for all LMSW milestones. This inconsistency is significant because LMSW will receive more than 50 percent of the \$805 million of milestone payments MSFC will make to industry partners.¹⁵ Specifically:

- For industry partners other than LMSW, MSFC obligated funds in advance of work being performed and recorded cost and a liability for payment of each milestone in the month it was scheduled to be completed, even if work had not been completed. However, for LMSW, MSFC generally waited until next year funds were received and LMSW had billed the Center before recording obligations, costs, and payables for milestone work completed and accepted in the prior fiscal year.
- MSFC did not always delay recording obligations, costs, and payables for completed LMSW milestones that had been accepted by MSFC. Some LMSW milestones were obligated, costed, and paid upon completion using current year funds.

Details on these inconsistencies are provided in Appendix I.

***Bona Fide Needs Rule
Applies to Cooperative
Agreement Milestones***

The bona fide needs rule applies not only to the entire X-33 Program, but also to individual milestones. The rule applies to each milestone because:

¹⁴ U.S. General Accounting Office, Principles of Federal Appropriations Law 6-28.

¹⁵ NASA total funding of \$912 million includes \$107 million to Government partners and \$805 million in milestone payments to industry partners.

- NASA's need for the X-33 Program is not a single, nonseverable requirement, and
- the work performed on each milestone responds to NASA technology needs.

NASA X-33 Need Is Not a Single, Nonseverable Need. NASA's need for the X-33 Program includes work that meets individual payment milestones. NASA's incremental funding (see Appendix D) of the X-33 over 5 years further demonstrates that NASA's need is not a single requirement. NASA's direction that the needs for each fiscal year be identified by multiple performance-based milestones, scheduled for completion in each fiscal year, also demonstrates multiple requirements. (Additional support for the OIG position on severability of X-33 Program tasks is provided in Appendix J.) For the above reasons, we believe the tasks required by each milestone, while related and sequential, are severable. To support a Government decision by the end of the decade on a reusable launch vehicle to replace the Space Shuttle, NASA needs LMSW to complete each milestone in the scheduled fiscal year.

Milestone Work Meets NASA Technology Needs. Work performed by the industry partners on each milestone clearly responds to NASA X-33 technology needs, not just industry needs, for the following reasons:

- NASA has a bona fide need for technologies resulting from the X-33 Program to support Government decisions on next-generation reusable launch systems. The X-33 Program Commitment Agreement, dated April 29, 1998, identifies the NASA need. The agreement specifies:

The President's policies established NASA as the lead agency for developing reusable launch technologies aimed at future decisions regarding full-scale development of operational systems. NASA has two strategic roles in these endeavors. **The first is to provide the technology required to reduce the cost of space transportation for the Government.** [emphasis added] The second is to deliver the technology necessary to enable the U.S. launch industry to compete more effectively in the global launch market.

- The X-33 Program Commitment Agreement also emphasizes the importance of each X-33 milestone stating, “The schedule for delivering test and analytic results is absolutely critical to the X-33 Program. Thus, key milestones track the success of the program.”

The Agency’s need for these technologies is separate and is not dependent on NASA’s responsibility to provide technology assistance to industry. Appendix J contains additional details on the OIG position regarding NASA’s technology needs.

Contingent Liability

MSFC CFO officials acknowledged that NASA will have to pay LMSW when billed each December for milestone work completed the prior fiscal year. CFO officials also acknowledged that receipt of a subsequent year appropriation was the only event upon which payment of the completed milestones was “contingent.” However, MSFC did not record a contingent liability for completed but unpaid LMSW milestones at the end of FYs 1996 (\$22 million) and 1997 (\$34 million).

NASA FMM 9391-10, “Instructions for Summary of Commitment and Contingencies,” dated September 1997, provides guidance to Centers on the preparation and submission of the “Summary of Commitments and Contingencies” report to the NASA Comptroller. The financial manual identifies three categories of “. . . probability that payments will be due in the future.” The categories are: “(i) probable . . . more than a 50% chance of a payment being due; (ii) reasonably possible. . . less than a 50% chance of a payment being due, and (iii) remote . . . little or no chance of a payment being required in the future.”

We believe the probability of NASA making such payments was very high, and contingent liabilities should have been recorded, because cooperative agreement NCC8-115 specifies LMSW is to bill NASA in December, and NASA paid LMSW in FYs 1997 and 1998 for milestones completed in prior years. MSFC also did not identify a contingent liability for partially completed LMSW payment milestones scheduled to be completed in FYs 1996 or 1997, and billed the following December, but for which completion had been delayed due to schedule slippage.

RECOMMENDATION I

The NASA CFO, General Counsel, Associate Administrator for Procurement, and MSFC Center Director should conduct a joint

review of the funding and payment practices used on the X-33 Program. This review should:

- a. Determine whether the use of FYs 1997 and 1998 funds and the planned use of FY 1999 funds to pay for milestone work completed and accepted in prior fiscal years constitute violations of NPD 9050.3D, "Administrative Control of Appropriations and Funds," and/or the Antideficiency Act.
- b. Determine the amount of FYs 1996, 1997, and 1998 Science, Aeronautics and Technology funds available at MSFC and Agency levels to cover unrecorded obligations of LMSW milestones completed during FYs 1996, 1997, and 1998.
- c. Ensure prompt recording of obligations and eliminate delayed billings for completed LMSW milestones.

***MANAGEMENT'S
RESPONSE***

Concur in part with recommendation 1a. Management agreed to perform a study of NASA's funding and payment policies and practices on the X-33 Program. The joint study is to be concluded by December 31, 1998, and will include participation of the NASA CFO, the General Counsel, the Acting Associate Administrator for Procurement, the Associate Administrator for Aero-Space Technology (formerly the Office of Aeronautics and Space Transportation Technology), and the MSFC Director.

Nonconcur with recommendations 1b and 1c. Management stated the recommended actions presuppose the answers to the planned management study. If the study concludes that further action is necessary, appropriate action will be taken. The outcome of the study may also affect the application of fiscal laws to all of NASA's cooperative agreements with commercial organizations. The complete text of the comments is in Appendix K.

***OIG EVALUATION OF
MANAGEMENT'S
RESPONSE***

Management's comments are responsive to the intent of recommendation 1a. The planned study also supports the intent of recommendations 1b and 1c. To expedite accomplishment of the joint study, the OIG offers assistance as a study participant, to include making available data from our audit working papers. Regarding timing of the study, we are concerned that NASA does not plan to complete the study until December 31, 1998, but LMSW is scheduled to bill MSFC December 1, 1998, for unpaid milestones completed in FY 1998. In view of the unresolved questions on X-33

payment practices, we believe management should determine appropriateness of existing payment practice before making any more such payments. Due to the scheduled December billing and pending work on FY 1998 financial statements, we encourage management to complete the study as soon as possible. We request that management submit a copy of the study results and provide us additional comments identifying corrective actions taken or planned on recommendation 1. We will keep this recommendation open, pending our review of the study results and adequacy of corrective actions taken by management.

RECOMMENDATION 2

The NASA CFO, in coordination with the MSFC CFO, should adjust MSFC and Agency yearend financial reports and statements, as appropriate, to reflect previously unrecorded obligations, unaccrued costs, and unrecorded liabilities, including contingent liabilities, on the X-33 Program.

***MANAGEMENT'S
RESPONSE***

Nonconcur. Management stated the recommended action presupposes the answers to the planned management study. Management agreed to take appropriate corrective actions as determined by the study.

***OIG EVALUATION OF
MANAGEMENT'S
RESPONSE***

The planned study supports the intent of this recommendation. Upon completion of the study, we request that management provide us additional comments identifying corrective action taken or planned on recommendation 2. We will keep this recommendation open, pending our review of the study results and adequacy of the corrective actions taken by management.

OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES

The overall audit objective was to determine whether NASA's use of a cooperative agreement on the X-33 Program was an appropriate management approach and whether the roles, responsibilities, and rights of the Government and industry partners were effectively defined. Our conclusions on the overall audit objective are not addressed in this report but will be provided in a subsequent report. A subobjective was to determine whether NASA's implementation and management of the X-33 Program are consistent with congressional and Agency guidance. In this regard, we evaluated the appropriateness of NASA's X-33 funding concept to determine whether it adversely affected Agency reports and financial statements submitted to Congress and whether it complied with congressionally mandated fund controls, including the Antideficiency Act. This audit report provides our conclusions only on this subobjective.

SCOPE AND METHODOLOGY

Our review of the X-33 funding concept covered the 42 months of the program and included budgeted funding and scheduled payment milestones for FYs 1996 through 2000. Our review addressed the actual milestone payments for FYs 1996, 1997, and 1998, but focused primarily on FY 1997.

We relied on computer-generated reports from the Marshall Accounting and Resources Tracking System and Financial and Contractual Status financial systems to determine the status of X-33 funds. We did not independently verify the validity of these reports. This lack of verification did not affect our audit results. We reviewed records documenting contractor performance in completing payment milestones. We also reviewed MSFC CFO and X-33 Program Office records to determine actions to record obligations, costs, and liabilities. We also compared this data to MSFC financial records to assess the accuracy and reliability of X-33 Program status reports and MSFC and NASA financial statements.

The audit approach included:

- reviewing NASA directives and documents, including budgetary data, procurement records, and CFO records and reports detailing financial transactions, yearend financial statements, and contractor program status reports;
- visiting contractor facilities;

- interviewing NASA and contractor personnel;
- reviewing statutory requirements, Office of Management and Budget guidance, and congressional direction to NASA;
- obtaining legal opinions from the OIG Associate Attorney-Advisor regarding the appropriateness of the X-33 funding concept and the validity of the limitation of funds clause, and determining when NASA created a commitment to pay (obligation).

***MANAGEMENT
CONTROLS REVIEWED***

We reviewed management controls related to cost reporting and accuracy and completeness of Agency yearend reports and financial statements. We evaluated Agency compliance with statutory requirements and NASA internal fund control policies and procedures. Our review of the X-33 funding concept addressed adequacy of management controls for:

- Recording and reporting obligations, costs, and payables.
- Recording and reporting financial status of Agency programs.
- Ensuring that financial management operations comply with directives, guidance, and statutory requirements. Specifically,
 - use of correct fiscal year funds,
 - not obligating in advance of appropriation, and
 - adhering to Agency internal fund control system.
- Managing programs and projects accomplished in partnership with commercial firms via cooperative agreements.

Except for matters presented in this report, these controls were considered generally adequate. We believe significant financial problems exist on the X-33 Program, but many of the problems can be attributed, at least in part, to management decisions and interpretations related to this very unique program. This includes NASA's decision to use a cooperative agreement as the procurement instrument and the resulting partnering arrangements.

AUDIT FIELD WORK

Audit field work was conducted from August 1997 through June 1998 at the following locations:

- Marshall Space Flight Center

APPENDIX A

- Langley Research Center
- Lockheed-Martin Skunk Works, Palmdale, California
- NASA Headquarters

The audit was performed in accordance with generally accepted government auditing standards.

PRIOR OIG AUDITS AND OTHER REVIEWS OF THE REUSABLE LAUNCH VEHICLE PROGRAM

OIG Audit, “X-33 Cooperative Agreement,” Audit Assignment A-HA-97-048 (Audit in process as of October 1998)

OIG Audit Report, “Reusable Launch Vehicle - Survey of X-33 Task Agreements,” IG-97-018, March 28, 1997

OIG Audit Report, “Reusable Launch Vehicle Program,” IG-97-019, March 27, 1997

OIG Inspections, Administrative Investigations and Assessments Report, “X-33 Program Security Assessment,” G-98-009, August 18, 1998

OIG Partnerships and Alliances Report, “NASA Cooperative Agreements with Large Commercial Firms,” P&A-97-001, August 22, 1997

X-33 FUNDING SHORTFALL

CONCERNS OVER PHASING OF X-33 FUNDS

Prior to awarding the X-33 cooperative agreement, Congress and NASA's Non-Advocate Review Team expressed concerns over the low level of funding in the early years of the X-33 Program. In September 1995, the review team noted, "Planned NASA Phase II funding is lean in the early years" In December 1995, the Congressional Conference Report accompanying the FY 1996 appropriations also commented on X-33 funding. The report stated, ". . . the conferees have significant concerns over the current funding profile for this ambitious development effort in that amounts proposed for the initial years may not be adequate" Congress directed NASA to conduct a "re-examination" of the X-33 funding profile. Responding to this direction, NASA rephased \$58 million of X-33 funding from FY 1999 to FY 1997. Nevertheless, the X-33 milestone payments MSFC negotiated with industry partners still exceeded the X-33 budget by \$118 million for FYs 1996 through 1998. In keeping with the delayed billing arrangement, MSFC plans to use additional FY 1999 funds to cover this budget shortfall (see Appendix D).

One criterion for evaluating adequacy of the planned funding for Agency programs is the "60/50" rule. MSFC officials stated the rule is a standard guideline (rule of thumb) often used for budget phasing on NASA research and development programs like the X-33. Using the "rule," we determined that NASA's X-33 budget for the first half of the program was about \$116 million less than the funding levels required by the "60/50" rule.¹⁶ MSFC did not comply with the rule.

¹⁶ The "60/50" rule, based on historical Agency data, indicates that 60 percent of total program costs will likely be incurred in the first 50 percent of schedule time on NASA programs/projects. Our analysis was based on the joint X-33/RLV Program effort under cooperative agreement NCC8-115 for the primary 42-month program period July 1996 through December 1999. Our analysis excluded the small RLV follow-on effort (3 percent of total budget) from January through December 2000 after completion of the X-33 program.

X-33 PROGRAM FUNDING

(\$ IN MILLIONS)
FISCAL YEARS

	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>SUB- TOTAL</u>	<u>1999</u>	<u>2000</u>	<u>TOTAL</u>
X-33 Budget ¹	\$39.0	\$223.6	\$299.1	\$561.7	\$275.7	\$75.0	\$912.4
Less Task Assignment Work	<u>\$5.1</u>	<u>\$30.1</u>	<u>\$24.5</u>	<u>\$59.7</u>	<u>\$47.6</u>	<u>\$0</u>	<u>\$107.3</u>
Funds Available for Milestones	\$33.9	\$193.5	\$274.6	\$502.0	\$228.1	\$75.0	\$805.1
Less Scheduled Milestone Payments ²	<u>\$91.1</u>	<u>\$285.7</u>	<u>\$243.7</u>	<u>\$620.5</u>	<u>\$73.0</u>	<u>\$111.6</u>	<u>\$805.1</u>
(Shortfall) or Excess	<u>\$(57.2)</u>	<u>\$(92.2)</u> ³	<u>\$30.9</u>	<u>\$(118.5)</u>	<u>\$155.1</u> ⁴	<u>\$(36.6)</u>	<u>\$0.0</u>

¹Includes about \$107 million, which is not available to pay milestones; these funds are for work to be done by NASA and other Government partners under task agreements with LMSW.

²Funds required each fiscal year include forward funding necessary to pay milestones in October and November each year with prior year funds. The X-33 cooperative agreement identifies a "Government Fiscal Year" of December through November for payment milestones.

³The cumulative shortfall through FY 1997 is about \$150 million.

⁴FY 1999 is the only fiscal year with substantial budgeted funds in excess of planned milestone payments. MSFC plans to use FY 1999 funds to cover the cumulative shortfall of more than \$100 million through FY 1998.

NASA GUIDANCE AND FEDERAL REGULATIONS REGARDING USE OF APPROPRIATED FUNDS

U.S. COMPTROLLER GENERAL DECISIONS AND GAO GUIDANCE

A number of Comptroller General decisions and GAO guidance support our position that NASA is obligated to pay for X-33 milestones completed by industry partners and accepted by NASA. Several examples are provided below.

“An agency which tries to meet a current shortfall by ‘borrowing’ from (i.e., obligating against) the unenacted appropriation for the next fiscal year is clearly obligating in advance of an appropriation. . . . However, it is also obligating in excess of the currently available appropriation” (2 U.S. General Accounting Office, Principles of Federal Appropriations Law 6-13, 1992).

An obligation is “a definite commitment which creates a legal liability of the Government for the payment of appropriated funds for goods and services ordered or received” (Comptroller General Decision B-116795, June 18, 1954).

“For appropriations law purposes, the term ‘obligation’ includes both matured and unmatured commitments. A matured commitment is a legal liability that is currently payable. An unmatured commitment is a liability which is not yet payable but for which a definite commitment nevertheless exists. . . . Both types of liability are ‘obligations.’ The fact that an unmatured liability may be subject to a right of cancellation does not negate the obligation. . . . The obligation takes place when the definite commitment is made even though the actual payment may not take place until the following fiscal year. 56 Comptroller General 351 (1977); 23 Comptroller General 862 (1944)” (2 Principles of Federal Appropriations Law 7-4, 1992).

Creating and recording an obligation are not the same thing. “It is important to emphasize the relationship between the existence of an obligation and the act of recording. Recording evidences the obligation but does not create it. If a given transaction is not sufficient to constitute a valid obligation, recording it will not make it one. . . . Conversely, failing to record a valid obligation in no way diminishes its validity or affects the fiscal year to which it is properly chargeable” (2 Principles of Federal Appropriations Law 7-6 to 7-7, 1992).

The bona fide needs rule (31 USC 1502) governs availability of appropriations as to time. The rule states, “. . . [a] fiscal year

appropriation may only be obligated to meet a legitimate . . . need arising in, or in some case arising prior to but continuing to exist in, the fiscal year for which the appropriation was made” (Principles of Federal Appropriations Law Volume I, Chapter 5-9, 1991).

Three Comptroller General decisions concluded that the bona fide needs rule applies to cooperative agreements. (Comptroller General Decisions B-235678, July 30, 1990; B-229873, November 29, 1988; and B-240264, February 7, 1994).

FEDERAL STATUTES

Nine specific criteria for recording obligations are prescribed in 31 USC Section 1501(a). When one criterion is met, the Agency must record the transaction as an obligation.

***FEDERAL
ACQUISITION
REGULATION***

Federal Acquisition Regulation 32.704(c) states, “Government personnel encouraging a contractor to continue work in the absence of funds will incur a violation of Revised Statutes section 3679 (31 USC 1341) that may subject the violator to civil or criminal penalties.”

NASA GUIDANCE

Financial Management Manual (FMM) 9041.4a(2) states, “. . . the balance of a fixed appropriation or fund is available only for the payment of expenses properly incurred during the fixed period . . .”

FMM 9041.4a(1) states, “Contracts entered into or orders placed for goods or services shall be executed only with a bona fide intent that the contractor or other performing activity commence work and perform the contract without unnecessary delay.”

FMM 9041.16a(1) states, “A grant requiring the grantee to perform a service or deliver an item shall be recorded when consummated by mutual agreement.”

***X-33 COOPERATIVE
AGREEMENT TERMS***

The X-33 cooperative agreement states:

“Payments will be made upon completion of the milestones . . . subject to availability of funds.”

“The recipient is not entitled to partial payment for partial completion of a payment milestone.”

“. . . NASA is providing a fixed amount of funding for activities to be undertaken under the terms of this cooperative agreement.

APPENDIX E

NASA is under no obligation to provide additional funds. Under no circumstances shall the Recipient undertake any action which could be construed to imply an increased commitment on the part of NASA under this cooperative agreement.”

“The Government’s obligation is limited to funds obligated on the cover page of this Agreement of modification thereto.”

“Of the award amount indicated on the cover page of this agreement, only the obligated amount indicated on the cover page of this agreement is available for payment. NASA anticipates making additional allotments of funds as required. . . . These funds will be obligated as appropriated funds become available without any action required of the Recipient. NASA is not obligated to make payments in excess of the total funds obligated.”

AGENCY FUND CONTROL SYSTEM

FEDERAL STATUTES

Administrative Division of Apportionments, 31 United States Code (USC) Section 1514, provides guidance on fund control procedures to be used by executive agencies such as NASA. Section 1514(a) states:

The official having administrative control of an appropriation . . . and, subject to the approval of the President, the head of each executive agency . . . shall prescribe by regulation a system of administrative control not inconsistent with accounting procedures prescribed under law. The system shall be designed to (1) restrict obligations or expenditures from each appropriation to the amount of apportionments or reapportionments of the appropriation; and enable the official or head of the executive agency to fix responsibility for an obligation or expenditure exceeding an apportionment or reapportionment

AGENCY DIRECTIVES

Financial Management Manual (FMM) 9231-3, "Nature of Allotment Accounting," dated July 1997, states:

The NASA allotment accounting system is designed to record and control documents and transactions in order to prevent overcommitment, overobligation, and overexpenditure of appropriations and other funds controlled by allotments. General ledger allotment accounts are an integral part of the overall NASA accounting system, which provide:

a. A control technique for commitments, obligations, and expenditures incurred against appropriations and funds within authorized fund availability, and to ensure compliance with the provisions of 31 USC 1341-1351 as amended, and as implemented by NPD 9050.3D. . . .

d. A source of accurate and timely data for program management at all levels within NASA,

APPENDIX F

for budget formulation, justification, and review, and for evaluation of program and management performance.

FMM 9211-5, "Allotment Controls," dated February 1997, states:

Administrative controls will be established in accordance with NASA Management Instruction 9050.3D to prevent commitments and obligations from exceeding amounts allotted.

NPD 9050.3D, "Administrative Control of Appropriations and Funds," dated January 22, 1997, establishes procedures for NASA to meet external requirements to provide administrative control over appropriations and funds. The NPD states:

The NASA Administrator is responsible for reporting violations, in accordance with the Antideficiency Act, to both the Congress and the President.

The NASA Chief Financial Officer (CFO) is responsible for . . . reporting violations in accordance with the Antideficiency Act to the Administrator.

A NASA Center Director is responsible for all financial control, jurisdiction, and any responsibility under the Antideficiency Act, and regulations thereunder, for the total amount allotted.

CRITERIA FOR RECORDING OBLIGATIONS

NASA DIRECTIVES

Financial Management Manual 9040, "Criteria for Recording and Reporting Obligations," dated February 1997, states:

Obligations . . . are amounts of orders placed, contracts awarded, services received, and similar transactions for bona fide needs existing during a given period that will require payments during the same or future period and that comply with the applicable laws and regulations.

Once having been incurred, an obligation shall be recorded promptly against the applicable Allotments and Resources Authority whether or not a sufficient balance is available. An overobligation of available Allotments or Resources Authority under the provisions of NMI 9050.3D exists even though the obligation is not recorded.

NASA Policy Directive 9050.3D, "Administrative Control of Appropriations and Funds," January 22, 1997, states:

An obligation includes amounts of orders placed, contracts awarded, services received, and similar transactions that will require payments during the same or future period. The legal requirement for recording obligations is 31 USC 1501. Certifications and records shall be kept in an agency in a form that facilitates audits and reconciliations (31 USC 1108). Obligations are the sum of undelivered orders, liabilities, and disbursements.

DETAILS ON MSFC POSITION

***LIMITATION OF
FUNDS CLAUSE
LIMITS LIABILITY***

MSFC believed that including a limitation of funds clause limited the Center's liability to funds obligated on the cooperative agreement. MSFC officials stated that this limitation enabled the Center to comply with legal and fiscal requirements because:

- The clause put LMSW rather than MSFC "at risk" for the X-33 funding shortfall in the event Congress did not appropriate funds in the next fiscal year. The MSFC Grant Officer stated that LMSW was fully aware of the extent of its risk, and it was to NASA's advantage to transfer risk to the other party whenever possible.
- The clause justified not recognizing any liability or accruing cost for completed LMSW milestones, even if MSFC had not exhausted the obligated funds on the cooperative agreement. X-33 budgets did not include funds for LMSW milestones scheduled to be completed in the current year because MSFC planned to use next year funds to pay LMSW milestones. CFO officials maintained that unused obligated funds on the cooperative agreement were intended to pay other industry partner milestones, not LMSW milestones. CFO officials believed that the clause permitted MSFC to deny liability for LMSW milestones, even if funds were available on the X-33 cooperative agreement.

***No Obligation Until
MSFC Is Billed***

MSFC officials stated that the LMSW December billing had to occur before the Center could record an obligation. An X-33 Program Office official told us that MSFC had no obligation to pay for accepted milestones until LMSW submitted an invoice, regardless of fund availability. The MSFC Chief Counsel similarly stated that "passage of time" (the December billing date) was a criterion that had to be met before MSFC could record an obligation for an accepted X-33 milestone.

***APPLICATION OF
BONA FIDE NEEDS
RULE TO
COOPERATIVE
AGREEMENT***

MSFC officials contend the X-33 funding practice does not violate the bona fide needs rule because the rule does not apply to each X-33 milestone. They believe it applies to the entire X-33 Program only.

The MSFC Chief Counsel stated that NASA has a bona fide need for the X-33 Program. NASA needs and will only benefit from completion of the total X-33 Program, not its separate elements

(individual technology objectives, payment milestones, etc.). The Chief Counsel stated that (1) the Agency's need for the X-33 Program is a single, nonseverable requirement for the total program in order to support a decision on Reusable Launch Vehicle Phase III, and (2) the bona fide needs rule does not apply to individual X-33 milestones because the work performed on each milestone and products of that work do not meet a NASA need. The Chief Counsel stated that this work satisfies only the needs of LMSW and industry partners. Since NASA has no bona fide need for a milestone completed and accepted in FY 1997, the Center is not required to use FY 1997 funds to pay the milestone. Instead, FY 1998 funds may be used to pay such milestones.

MSFC CFO officials said LMSW is the recipient of a "Federal assistance program" funded by NASA. The X-33 Program does not respond to a NASA mission responsibility. Further, NASA has no need for the X-33 Program results in a contractual sense because the cooperative agreement does not require deliverable goods or services. MSFC CFO officials view NASA's role only as providing assistance to industry for the commercialization of a next-generation launch vehicle.

DETAILS ON INCONSISTENCIES

DIFFERENCES IN FUNDING FOR INDUSTRY PARTNERS

MSFC incrementally funds the X-33 cooperative agreement by periodically obligating a substantial amount of funds (e.g., \$50 - \$100 million) for payment milestones scheduled to be completed in the current fiscal year. Incremental funding modifications to NCC8-115 do not identify funds to specific industry partners, milestones or tasks. However, Center officials stated that LMSW milestones are not funded. For industry partners other than LMSW, MSFC records cost and a liability for payment of each milestone in the month it is scheduled to be completed, even if the milestone has not been completed and accepted. For industry partners other than LMSW, MSFC generally records obligations, costs, and payables prior to billing. For LMSW, however, MSFC normally does not record obligations, costs, or a liability to pay for completed, accepted milestones as the work is done. Generally, MSFC waits until next fiscal year funds are received and LMSW has billed MSFC (each December) before recording obligations, costs, and a liability to pay in Center accounting records.

SOME LMSW MILESTONES ARE RECORDED

MSFC did not always delay recording obligations, costs, and payables for completed, accepted LMSW milestones. First, MSFC did not delay recording and paying five new LMSW milestones added to the X-33 cooperative agreement after award. These milestones were completed in FY 1997, billed upon completion, and paid with FY 1997 funds.¹⁷ Second, in August and September 1997, MSFC used available FY 1997 funds to record about \$50 million of obligations, costs, and payables for five of the original LMSW milestones completed and accepted earlier in FY 1997.¹⁸ MSFC recorded these milestones, although LMSW had not billed NASA, in order to meet NASA Headquarters financial metrics. LMSW completed one of these milestones (L-6) as early as January 1997, but did not bill NASA until December 1997. In December 1997, MSFC paid LMSW with a combination of FYs 1997 and 1998 funds. MSFC used \$10 million of FY 1998 funds to pay for portions of two of the five milestones that the Center had previously recorded against FY 1997 funds.

FY 1997 YEAREND TRANSACTIONS

MSFC obligated funds, accrued costs, and recorded liabilities on about \$50 million of completed but unbilled LMSW milestones

¹⁷ A small amount of prior year (FY 1996) funds was used to pay one milestone.

¹⁸ MSFC only partially recorded milestone L-10 (\$1,935,779 of \$12,036,128 was obligated and costed).

just before the end of the fiscal year. These actions were taken in order for the Center to meet Agency yearend financial metrics as to the percentage of:

- authorized funds obligated,
- obligated funds costed, and
- costed funds disbursed.

MSFC was able to record these LMSW milestones using both unbudgeted yearend funding received in the fourth quarter and budgeted FY 1997 funds for scheduled but uncompleted milestones of other industry partners. However, MSFC did not record obligations, costs, and payables for three additional LMSW FY 1997 milestones, valued at \$34 million, that had been completed and accepted in FY 1997. MSFC officials acknowledged the Center had unobligated FY 1997 funds remaining as of September 30, 1997. We determined that MSFC had about \$12 million of unobligated FY 1997 Science, Aeronautics, and Technology funds at yearend. Nevertheless, MSFC did not apply these funds to the \$34 million of accepted but unrecorded LMSW milestones. Instead, the funds were used to support MSFC's "forward funding" concept whereby milestone payments due in October and November of a new fiscal year must be paid with prior fiscal year funds pending NASA receipt of the congressional appropriation for the new fiscal year.¹⁹ Due to MSFC's delay in recording LMSW milestones, Center yearend financial statements for FY 1997 did not include obligations, costs, or a liability for payment of the \$34 million. MSFC subsequently used FY 1998 funds to pay the \$34 million of milestones completed but not recorded in FY 1997.

¹⁹ The X-33 Cooperative Agreement identifies a "Government Fiscal Year" of December through November for payment milestone purposes.

DETAILS ON OIG POSITION

SEVERABILITY OF X-33 TASKS

The severability of tasks on the X-33 Program is reflected by performance-based milestones and is further illustrated as follows:

- More than 250 task agreements are to be performed by 14 Government partners.
- NASA funding is separated into more than 160 performance-based payment milestones. NASA determines the completion of each one individually.
- Milestone criteria frequently require “delivery” of hardware, software, or documentation, “completion” of a task, or the performance of an event such as a “test.” Each is a distinct, severable requirement enabling NASA to assess performance of work and determine whether it has been completed.
- Not only is each X-33 payment milestone a severable requirement, but the requirements of a single milestone may be further separated into multiple requirements. Modification No. 22 to the X-33 cooperative agreement separated milestone L-31, “X-33 Flight Test Program Complete,” (requiring 15 flight tests) into three milestones:
 - L-31, Complete Experimental Flight Tests 1-5
 - L-32, Complete Experimental Flight Tests 6-10
 - L-33, Complete Experimental Flight Tests 11-15

The multiple programs and projects comprising NASA’s Reusable Launch Vehicle (RLV) Program clearly demonstrate severability of NASA’s technology needs for low cost access to space. The Government’s decision on a RLV to replace the Space Shuttle will not be based solely on results of the X-33 program. NASA’s RLV program, of which the X-33 is a part, also includes the Delta Clipper, the X-34, and the numerous elements of MSFC’s Advanced Space Transportation Program.

NASA HAS A TECHNOLOGY NEED

To effectively support NASA science and other mission requirements, the Agency has a need for technologies to reduce the cost of access to space. This need is assigned a high priority and is further illustrated as follows:

APPENDIX J

- The 1998 NASA Strategic Plan (NASA Policy Directive 1000.1) clearly supports an Agency need for the technologies being developed by the X-33 Program. The need for low-cost access to space is reflected by the Agency mission, “To explore, use, and enable the development of space for human enterprise.” Also, the Access to Space goals and objectives of the Aeronautics and Space Transportation Technology Enterprise: “Develop advanced space transportation concepts and initiate enabling technology programs.”
- The National Space Transportation Policy, dated August 5, 1994, charters NASA to lead the technology development and demonstration of next-generation reusable launch vehicle systems. The objective of NASA’s effort is to support Government and private sector decisions by the end of this decade on development of an operational next-generation reusable launch system.
- Civil Space Guidelines established by the New National Space Policy, dated September 19, 1996, direct NASA to focus its research and development efforts in “. . . space technologies and applications to **develop new technologies in support of U.S. Government needs** and our economic competitiveness.” [emphasis added].
- The draft X-33 Program Plan, dated November 21, 1997, also identifies NASA’s need for X-33 technologies stating the Agency’s first role is to “. . . provide the technology required to satisfy long-term strategic plans for Space Science, Mission to Planet Earth, and the Human Exploration and Development of Space.” These are the Agency’s internal plans to carry out its mission.

MANAGEMENT'S RESPONSE

National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



OCT 8 1998

Reply to Attn of **BF**

TO: W/Assistant Inspector General for Auditing

FROM: G/General Counsel
B/Chief Financial Officer

SUBJECT: Response to Draft Report on the Audit of NASA X-33
Funding Issues at MSFC (A-HA-98-002)

This is the NASA response to the subject audit. The Acting Associate Administrator for Procurement, the Marshall Space Flight Center (MSFC) Director, and the Associate Administrator for Aeronautics and Space Transportation Technology concur in this response.

- RECOMMENDATION 1:** The NASA CFO, the General Counsel, the Acting Associate Administrator for Procurement, and the MSFC Director should conduct a joint review of the funding and payment practices used on the X-33 program. This review should:
- a. Determine whether the use of FY's 1997 and 1998 funds and the planned use of FY 1999 funds to pay for milestone work completed and accepted in prior fiscal years constitute violations of NPD 9050.3D, "Administrative Control of Appropriations and Funds" and/or the Antideficiency Act.
 - b. Determine the amount of FY's 1996 and 1997 Science, Aeronautics and Technology funds available at MSFC and Agency levels to cover unrecorded obligations of LMSW milestones completed during FY's 1996, 1997, and 1998.
 - c. Promptly record obligations and eliminate delayed billings for completed LMSW milestones.

Response: Concur in part. The NASA Office of General Counsel will lead a study to be concluded by December 31, 1998, of NASA's funding and payment policies

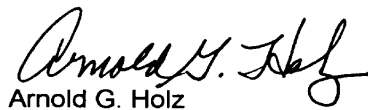
and practices regarding the X-33 program. This is appropriate due to NASA's increasing use of cooperative agreements, the size and importance of the X-33 program, the changing nature of Headquarters and Center roles, and the questions raised in the draft report. All parties concurring in this memorandum will participate.

We do not concur with the actions proposed in parts b. and c. since they presuppose the answers to the study. Should the study conclude that further actions is necessary, appropriate action will be taken.

RECOMMENDATION 2: The NASA CFO, in coordination with the MSFC CFO, should adjust MSFC and Agency yearend financial reports and statements, as appropriate, to reflect previously unrecorded obligations, unaccrued costs, and unrecorded liabilities, including contingent liabilities, on the X-33 program.

Response: We do not concur with the actions prescribed in this recommendation since they presuppose the answers to the study. Should the study conclude further action is necessary, appropriate action will be taken.

Also, while the X-33 cooperative agreement is unique, the application of fiscal laws to all of NASA's cooperative agreements with commercial organizations may be affected by the outcome of this review.



Arnold G. Holz



Edward A. Frankle

cc:
H/Mr. Luedtke
R/Gen. Armstrong
MSFC/Mr. Stephenson

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Non-NASA Federal Organizations and Individuals

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Special Counsel, House Subcommittee on National Security, International Affairs, and Criminal Justice

Professional Assistant, Senate Subcommittee on Science, Technology, and Space

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Senate Subcommittee on VA, HUD, and Independent Agencies

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House Committee on Government Reform and Oversight

House Committee on Science

House Subcommittee on Space and Aeronautics, Committee on Science

Congressional Member

The Honorable Pete Sessions, U.S. House of Representatives

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