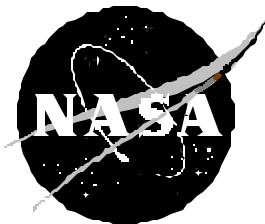


IG-00-035

AUDIT REPORT

**CONTRACT SAFETY REQUIREMENTS AT KENNEDY
SPACE CENTER AND
MARSHALL SPACE FLIGHT CENTER**

June 5, 2000



National Aeronautics and
Space Administration

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GENERAL**

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Acronyms

ASI	Agency Safety Initiative
DCMC	Defense Contract Management Command
FACS	Financial and Contractual Status
FAR	Federal Acquisition Regulation
NHB	NASA Handbook
NPD	NASA Policy Directive
NPG	NASA Procedures and Guidelines
OSHA	Occupational Safety and Health Administration

W

June 5, 2000

TO: A/Administrator

FROM: W/Inspector General

SUBJECT: INFORMATION: Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center
Report Number IG-00-035

The NASA Office of Inspector General has completed an audit of Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center. We found that NASA is taking action to ensure its contractor workforce is supportive of and accountable for safety. Through the Risk Based Acquisition Management initiative,¹ the Agency is revising, but has not yet published, the updated NASA Federal Acquisition Regulation (FAR) Supplement to ensure that risk is the core concern of all contracting actions except for the purchase of commercial off-the-shelf items. Although the initiative is a positive step toward improving the safety practices of NASA contractors, it does not apply to existing contracts. The audit did identify that the Agency has not applied existing basic safety provisions such as required contract safety clauses, contractor safety plans at contract award and Center safety office involvement in the procurement process for 15 of 25 contracts that we reviewed at Kennedy and Marshall. As a result, NASA contractors including some involved in hazardous operations may not be supporting the same safety goals as NASA.

Background

Both NASA Handbook (NHB) 1700.1,² "NASA Safety Policy and Requirements Document," June 1, 1993, and the NASA FAR Supplement have established NASA's requirements regarding safety with contractors. Chapter 2 of NASA Handbook 1700.1 requires that (1) the

¹ The Agency established Risk-Based Acquisition Management as a NASA procurement initiative in April 1999 to reduce the likelihood and severity of impact from unforeseen events through vigorous risk management. A key element of the initiative includes revising the NASA Federal Acquisition Regulation Supplement to incorporate risk management including safety and security considerations.

² On January 24, 2000, the Agency issued NASA Procedures and Guidelines 8715.3, "NASA Safety Manual," which replaced NHB 1700.1.

Agency review all procurement documentation and actions for safety implications, (2) contractors submit a safety plan as part of the contract, and (3) NASA conduct appropriate surveillance of contractor safety operations. The NASA FAR Supplement requires that contracts costing more than \$1 million, construction contracts, or contracts involving hazardous operations contain appropriate clauses related to safety.

Recommendations, Management's Response, and Evaluation of Response

We recommended that the Directors, John F. Kennedy Space Center and George C. Marshall Space Flight Center (1) identify all open contracts that either involve potentially hazardous operations or exceed \$1 million and determine whether those contracts have the required safety clauses and contractor safety plans; (2) determine the cost-effectiveness of modifying those contracts determined deficient, assess the risk of not modifying the contracts, and make those modifications deemed cost-effective and necessary; and (3) direct Center safety offices to assist the responsible Center official in performing an appropriate level (based on assessed risk) of contractor surveillance for each current applicable contract.

Management concurred with the recommendations. Kennedy and Marshall have planned procedures to ensure that all open contracts are modified to include the required safety clauses and contractor safety plans and that an appropriate level of contractor surveillance is performed on those contracts. Details on the status of the recommendations are in the report's recommendations section.

Kennedy and Marshall management provided extensive comments on our findings (see Appendix D). We respond to those comments in Appendix E of the report. Included among the comments are the following: Management stated that three contracts we questioned related to shipping liquid hydrogen across the country did not need to be reviewed from a safety standpoint and were not subject to NASA's safety policies because the contracts were treated as commercial acquisitions under FAR Part 12.³ Our concern is that Kennedy management has not taken appropriate measures such as reviewing the contractor's safety record and safety procedures to assure safe contractor shipping of an extremely hazardous material across the country and safe unloading of the material at NASA facilities.

Management stated that the report listing of contractor mishaps and the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) safety violations is misleading because it includes close calls and OSHA violations that occurred outside the scope of NASA work. We believe that it is important to include close calls in our reporting of contractor mishap statistics because close calls are included in NASA's definition of mishaps and because they indicate potential problems that could lead to more serious mishaps. We further believe that it is proper to report on company-wide OSHA

³ FAR Part 12, "Acquisition of Commercial Items," identifies special requirements and other considerations necessary for proper planning, solicitation, evaluation, and award of contracts for commercial items.

information in our assessment of a contractor's safety performance because it is a reflection of the overall safety management practice of the NASA contractor, an area that should be reviewed and evaluated by NASA prior to contract award.⁴

[Original signed by]

Roberta L. Gross

Enclosure

Final Report on Audit of Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center

⁴ NHB 1700.1, "NASA Safety Policy and Requirements Document," June 1, 1993, states that NASA safety officials are responsible for reviewing a prospective contractor's safety performance history during bid evaluation and source selection.

FINAL REPORT
AUDIT OF CONTRACT SAFETY REQUIREMENTS
AT KENNEDY SPACE CENTER AND
MARSHALL SPACE FLIGHT CENTER

W

June 5, 2000

TO: Q/Associate Administrator for Safety and Mission Assurance
AA/Director, John F. Kennedy Space Center
DA/Director, George C. Marshall Space Flight Center

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on Audit of Contract Safety Requirements at Kennedy Space
Center and Marshall Space Flight Center
Assignment Number A9900302
Report Number IG-00-035

The subject final report is provided for your information and use. Our evaluation of your response is incorporated into the body of the report. The corrective actions planned for the recommendations are responsive. The recommendations will remain open for reporting purposes until agreed to corrective actions are completed. Please notify us when action has been completed on the recommendations, including the extent of testing performed to ensure corrective actions are effective.

If you have questions concerning the report, please contact Mr. Kevin J. Carson, Program Director, Safety and Technology Audits, at (301) 286-0498, or Mr. Karl Allen, Auditor-in-Charge, at (202) 358-2595. We appreciate the courtesies extended to the audit staff. The final report distribution is in Appendix F.

[Original signed by]

Russell A. Rau

Enclosure

cc:

B/Chief Financial Officer

B/Comptroller

BF/Director, Financial Management Division

G/General Counsel

H/Associate Administrator for Procurement

JM/Director, Management Assessment Division

M/Associate Administrator for Space Flight

QS/Director, Safety and Risk Management Division

KSC/300/Director, Office of Safety and Mission Assurance

MSFC/300/Director, Office of Safety and Mission Assurance

NASA Office of Inspector General

IG-00-035
A9900302

June 5, 2000

Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center

Introduction

The NASA Administrator stated in a January 19, 1999, message that safety is the Agency's highest core value. On February 26, 1999, the Administrator emphasized the need for NASA contractors to be supportive of and accountable for safety and has reiterated this point several times since. The NASA Safety Policy generally requires that NASA safety personnel be actively involved in NASA procurement actions and conduct appropriate surveillance of contractors' safety programs.

The overall audit objective was to evaluate the safety procedures of NASA contractors. The specific objectives were to determine whether:

- contractor safety programs are adequately assessed as part of the preaward procurement process and the contracts contain appropriate safety clauses and
- contractor operations are appropriately reviewed and evaluated for compliance with the contract safety provisions and Federal and Agency safety requirements.

As part of the audit, we reviewed contracts at the John F. Kennedy Space Center (Kennedy) and the George S. Marshall Space Flight Center (Marshall) with completion dates of 2000 and beyond. For fiscal years 1998 and 1999, contractors at these Centers were involved in 93 mishaps⁵ resulting in more than \$1.3 million in damage.

Appendix A contains further details on the audit objectives, scope, and methodology.

Results in Brief

NASA is taking action to improve safety with its contractor workforce. Through the Risk Based Acquisition Management initiative,⁶ the Agency is revising, but has not yet published, the revised

⁵ NASA Policy Directive (NPD) 8621.1G, "NASA Mishap Reporting and Investigation Policy," defines a mishap as "any unplanned occurrence or event resulting from a NASA operation or NASA equipment, involving injury or death to persons, damage to or loss of property or equipment, or mission failure."

⁶ The Agency established Risk-Based Acquisition Management as a NASA procurement initiative in April 1999 to reduce the likelihood and severity of impact from unforeseen events through vigorous risk management. A key element of the initiative includes revising the NASA Federal Acquisition Regulation Supplement to incorporate risk management including safety and security considerations.

NASA Federal Acquisition Regulation (FAR) Supplement to ensure that risk is the core concern of all contracting actions except for purchasing commercial off-the-shelf items. Under this initiative, contractor safety programs will be appropriately reviewed by Agency safety personnel, based on assessed risk, from preaward through contract execution. This revision to the NASA FAR Supplement will apply to all prospective NASA contracts. Although this represents a positive step by management that should improve safety for all future NASA contracts, this strategy does not apply to existing contracts. The Agency has not applied existing basic safety provisions such as required contract safety clauses, contractor safety plans at contract award and Center safety office involvement in the procurement process to 15 out of 25 contracts that we reviewed at Kennedy and Marshall. As a result, NASA contractors including some involved in hazardous operations may not be supporting the same safety goals as NASA.

Background

Both NHB 1700.1,⁷ “NASA Safety Policy and Requirements Document,” June 1, 1993, and the NASA FAR Supplement have established NASA’s requirements regarding safety with contractors. Chapter 2 of NHB 1700.1 addresses contractor safety and requires that (1) the Agency review all procurement documentation and actions from a safety standpoint, (2) contractors submit a safety plan as part of the contract, and (3) NASA conduct appropriate surveillance of contractor safety operations. The NASA FAR Supplement requires that contracts costing more than \$1 million, construction contracts, or contracts involving hazardous operations contain appropriate clauses related to safety. In addition, the NASA FAR Supplement requires that the offeror submit a detailed safety and health plan that will be included in the resulting contract. The NASA Office of Procurement has revised the NASA FAR Supplement to include many of the safety provisions of Chapter 2 of NHB 1700.1, but has not yet published the revised NASA FAR Supplement.

We selected contracts for review from both Kennedy and Marshall because both Centers administer contracts for many high-risk NASA operations within the Space Shuttle and International Space Station programs. Such contracted operations include payload processing, orbiter preparation, and launch operations at Kennedy and the construction of the Space Shuttle external tank, main engines, and solid rocket boosters that are managed at Marshall. According to NASA Office of Safety and Mission Assurance records for 1998, both Centers incurred mishap damage totaling \$772,000 or 94 percent of all reported NASA contractor mishap damage.⁸ NASA Office of Safety and Mission Assurance personnel told us that these Centers accounted for most mishap damage due to the high-value Space Shuttle and International Space Station hardware that the Centers used.

⁷ On January 24, 2000, the Agency issued NASA Procedures and Guidelines 8715.3, “NASA Safety Manual,” which replaced NHB 1700.1.

⁸ NASA’s Office of Safety and Mission Assurance maintains a consolidated record of contractor mishap data reported by NASA Centers. The Ames Research Center, Dryden Flight Research Center, Jet Propulsion Laboratory, and the Langley Research Center did not report damage due to contractor mishaps for 1998.

Basic Contract Safety Requirements

Finding. Sixty percent (15 out of a total of 25) of contracts reviewed at Kennedy and Marshall did not include basic requirements to ensure safety. Specifically, not all contracts that we reviewed included basic requirements such as the NASA FAR Supplement safety clause and a NASA-approved, contractor safety plan at contract award.⁹ This condition occurred because the applicable Center safety offices were not adequately involved in the procurement process to ensure that these basic safety requirements were consistently applied to NASA contractors. As a result, NASA lacks assurance that its contractors at Kennedy and Marshall are working in accordance with NASA safety standards. By not including certain safety provisions and requirements in the contract, contractors are not contractually bound to the requirement for compliance with all Federal, state and local laws applicable to safety. Three of the questioned contracts involve extremely hazardous operations, and three are with contractors who have been involved in NASA mishaps. In addition, five of the questioned contractors have had prior safety violations as reported by OSHA. The OSHA violations were for the entire company and were not in all cases at the place of NASA contract performance (other than three violations under contract NAS10-12060 that occurred at NASA's Vandenberg launch site).

NASA FAR Supplement and NHB 1700.1 Requirements

Section 1823 of the NASA FAR Supplement requires that the Contracting Officer insert the following provision in all negotiated contracts of \$1 million or more; all construction, repair, or alteration contracts; or any acquisition regardless of dollar amount when the deliverable is of a hazardous nature:

The Offeror shall submit a detailed safety and health plan, as part of the offeror's proposal, showing how the Contractor intends to protect the life, health, and well being of NASA and contractor employees as well as property and equipment. This plan, as approved by the Contracting Officer, will be included in any resulting contract.

In addition to the NASA FAR Supplement, NHB 1700.1, Section 207(b) states that:

The contractor will be required to submit Safety Program Plans to the Contracting Officer for safety review by the safety Contracting Officer's Technical Representative and to obtain NASA approval before startup of operations.

⁹ NHB 1700.1, Section 207, "Safety Program Plans," states that these plans are intended to ensure that the contractor has adequate safety programs and has not neglected safety in the interest of obtaining a more favorable bid in the short term. The safety plan shall furnish specific information on how the contractor intends to protect the life and well being of contractor and Agency employees and the public as well as any NASA property and equipment.

Results of Contracts Reviewed

Our sample¹⁰ of 25 contracts at Kennedy and Marshall showed that the required NASA FAR Supplement clause, contractor safety plans, or both were missing on 14 contracts. Details are shown in the following table.

Contracts With Missing Clauses and Safety Plans

	<u>Kennedy</u>	<u>Marshall</u>	<u>Total</u>
Contracts Reviewed	13	12	25
No required NASA FAR Supplement safety clause.	2	4	6
No required contractor safety plan at award date. *	5	9	14

* These figures include five contracts for which there was no safety plan and nine contracts for which a safety plan was not provided by the contractor at the time of contract award. Appendix C contains details on the results of our review for each contract and a table of the contracts for which exceptions were identified.

Safety Office Oversight

The missing safety clauses and contractor safety plans can be attributed to the lack of continuous Center safety office involvement in the contracting process. NHB 1700.1, Chapter 2, Section 202(c)(2), states that Safety Officials are responsible for:

- (a) Reviewing and providing safety input for documents (including requirements, objectives, specifications, standards) and specific tasks.
- (b) Serving as a member or technical advisor on safety matters during source evaluation board matters
- (e) Conducting safety program reviews or technical evaluations of the contractor's operation or product for safety, including compliance with safety provisions of the contract.

There was no evidence that either Center's safety office had been involved (such as review of specifications and review and approval of contractor safety plan) in the contracting process for 13 of the 25 contracts examined. Had Centers participated in the contracting process, they would have identified the missing safety clauses and contractor safety plans. Also, neither the Kennedy nor Marshall safety office had formal procedures for reviewing contractor safety programs. Safety

¹⁰ See Appendix A for details on the contract sample selection.

program reviews of contractor operations (also referred to in NHB 1700.1 as “surveillance”) would also have detected missing contractor safety plans, and more timely corrective actions could have been taken. Details regarding each Center follow:

- **Kennedy Safety Office Involvement.** At Kennedy, there was no evidence in the contract files of safety office input into the contracting process for 6 of the 13 contracts reviewed. The Kennedy Chief Safety Officer stated that the Kennedy safety office reviews the safety requirements and contractor safety plans of all contracts, but does not always document this review process. For three contracts that involve the shipment of hazardous material, the Kennedy procurement office told us that the contracts did not have safety plans because the procurement office treated the contracts as commercial acquisitions. The Kennedy Chief Safety Officer informed us that a safety plan should have been included in the contracts, but was not, which indicated to us that the safety office did not review the contracts. In addition, the Kennedy Chief Safety Officer stated that because of limited staffing, the Kennedy safety office conducts fewer contract safety surveillance activities. These safety surveillance activities are limited to various inspections of major contractors in support of award fee evaluations.
- **Marshall Safety Office Input.** At Marshall, there was no evidence in the contract files of any safety office input into the contracting process for 7 of the 12 contracts reviewed. Marshall’s procedure for conducting surveillance of contractor safety was unclear. Marshall procurement and safety personnel informed us early in the audit that safety surveillance was generally delegated to the Defense Contract Management Command (DCMC). However, the DCMC representative at Marshall stated that safety was usually not delegated. Subsequently, Marshall Safety, Reliability and Quality Assurance Department officials informed us that Contracting Officers are responsible for ensuring contractor compliance with safety requirements. This position is in contrast to the requirements of NHB 1700.1, which states that the safety office is responsible for conducting safety reviews or technical evaluations of the contractor’s operations. Marshall safety office personnel informed us that they perform independent reviews of contractor safety programs to ensure compliance with contracted safety requirements. However, when we asked for documentation on the reviews, the Marshall safety office was unable to provide the documented support for the reviews.

Effects of Missing Contract Safety Provisions

By not ensuring that contractor safety plans are included in all contracts, NASA has no assurance that its contractors have effective policies and procedures in place to protect the life and well being of contractor and Agency employees, the public, and NASA property and equipment. Additionally, by not including required safety clauses in the contracts, contractors are not contractually bound to the requirement for compliance with all Federal, state and local laws applicable to safety. The contracts that lacked the required safety clauses or contractor safety plans present potential increased safety risks. Specifically, several of the contracts involved extremely hazardous operations, while some of the contractors were involved in NASA mishaps or have had prior OSHA safety violations.

- **Hazardous Operations**. Three Kennedy contracts¹¹ that did not contain the required safety clause or contractor safety plan were with vendors for transporting liquid hydrogen from Pennsylvania and Connecticut to various locations in California. According to NASA Safety Standard 1740.16, “Safety Standard for Hydrogen and Hydrogen Systems,” February 12, 1997, the primary hazard of any form of hydrogen is inadvertently producing a flammable or detonable mixture leading to a fire or detonation. A material safety data sheet from one of the contractors described liquid hydrogen as an extremely cold flammable liquid that can cause severe frostbite, form explosive mixtures with air, freeze air in vent lines, and cause dizziness and drowsiness. One of the contractors in question experienced an employee fatality in 1997 when a pressurized tank exploded. Kennedy contracting personnel informed us that safety plans were not required for these contracts because the procurements were treated as commercial acquisitions in order to streamline the acquisition process. The Kennedy Chief Safety Officer stated that the contracts should have had safety plans regardless of the type of acquisition.
- **Prior OSHA Violations and Mishaps**. Some of the questioned contracts posed significant safety risks due to the past safety records of the contractors involved. Five of the questioned contractors were cited for 43 OSHA safety violations since 1994, including accidents resulting in two fatalities and serious bodily injury. Three of the safety violations occurred on a NASA facility. Also, three of the questioned contractors reported 55 mishaps during fiscal years 1998 and 1999, resulting in more than \$73,000 in damages. Overall, the 25 contractors reviewed were cited for 126 OSHA violations since 1994 and were involved in 119 mishaps resulting in more than \$103,000 in damage.

See Appendix C for more details, by contract, on hazardous operations and prior violations and mishaps.

NASA is taking action to improve safety with its contractors for all prospective NASA contracts. We believe that NASA’s Risk-Based Acquisition Management initiative should prevent the deficiencies noted in this report for all future NASA contracts. However, there are some existing high-risk contracts with periods of performance through 2010. The contracts include contractors with questionable safety records that require immediate action to ensure that the contractors follow NASA’s safety policy.

Recommendations, Management’s Response, and Evaluation of Response

Kennedy and Marshall management provided extensive comments on our finding that are addressed in Appendix E of the report.

The Directors, John F. Kennedy Space Center and George S. Marshall Space Flight Center should:

¹¹ Contracts NAS10-12150 and NAS10-98011 were with Air Products and Chemicals, and contract NAS10-98012 was with Praxair, Inc.

1. Identify all open contracts that involve either potentially hazardous operations or exceed \$1 million and determine whether those contracts have the required safety clauses and contractor safety plans.

Management's Response. Concur. Both Centers will take action to review applicable contracts to ensure that they include the safety and health clause and a contractor safety plan. Additionally, Marshall plans to develop a database to track contractor safety requirements and approval of safety and health plans. Marshall has also approved two new Center-wide work instructions in the contracting area with specific safety review steps in the procurement process. The complete text of management's response is in Appendix D.

Evaluation of Management's Response. Management's planned actions are responsive to the recommendation. The recommendation is resolved but will remain undispositioned and open for reporting purposes until corrective actions are completed.

2. Establish a methodology for determining the cost-effectiveness of modifying those contracts determined deficient (as defined above), and use this methodology to assess the risk of not modifying the contracts and make those modifications deemed cost-effective and necessary.

Management's Response. Concur. Marshall plans to establish a methodology to determine which existing contracts will be updated to meet safety requirements. Kennedy will request a proposal from each applicable contractor of the cost of adding the required clauses (see Appendix D).

Evaluation of Management's Response. Management's planned actions are responsive to the recommendation. The recommendation is resolved but will remain undispositioned and open for reporting purposes until corrective actions are completed.

3. Direct the Center safety offices to assist the responsible Center official in performing an appropriate level (based on assessed risk) of contractor surveillance, either themselves or by delegation, for each current applicable contract.

Management's Response. Concur. Under Kennedy's reorganization, the safety and mission assurance function will be embedded in all organizations that will have the responsibility to assure the appropriate level of contractor surveillance. Marshall will use the database developed as part of Recommendation 1 to track contractor surveillance and plans to develop a work instruction to document the surveillance process (see Appendix D).

Evaluation of Management's Response. Management's planned actions are responsive to the recommendation. The recommendation is resolved but will remain undispositioned and open for reporting purposes until corrective actions are completed.

Appendix A. Objectives, Scope, and Methodology

Objectives

The overall objective of the audit was to evaluate the safety procedures of NASA contractors. The specific objectives related to this report were to determine whether:

- contractor safety programs are being adequately assessed as part of the preaward procurement process and the contracts contain appropriate safety clauses and
- contractor operations are appropriately reviewed and evaluated for compliance with the contract safety provisions and statutory and regulatory safety requirements.

This is the third report issued as part of the overall audit of NASA's Safety Program Management. Details on the findings and recommendations contained in the two previous reports are in Appendix B.

Scope and Methodology

To accomplish our objectives we:

- Reviewed NASA's safety requirements for contractors.
- Discussed NASA contractor safety policies and procedures with officials from NASA's Office of Safety and Mission Assurance and Office of Procurement and from the Defense Contract Management Command.
- Reviewed a total of 13 Kennedy contracts and 12 Marshall contracts and discussed each contract's safety requirements with the Contracting Officers, Contract Specialists, and the Center safety officials.

Sample Selection

To select our sample, we identified, from the NASA Financial and Contractual Status (FACS) System, all open contracts with completion dates of 2000 and beyond, that either exceeded \$1 million or, by contract work description, appeared to involve hazardous or potentially hazardous work. We relied on the automated data in the FACS System to complete our audit objectives and performed no additional verification of the system. From the FACS System, we identified a universe of 26 Kennedy contracts and 64 Marshall contracts. From the universe, we judgmentally selected for review 13 contracts from Kennedy and 12 contracts from Marshall. These samples represented approximately 50 and 19 percent of the universes from Kennedy and Marshall, respectively. During our review of the contracts, we confirmed that each contract involved hazardous or potentially hazardous operations.

Criteria Followed

In conducting our audit, we followed the requirements of NASA Handbook (NHB) 1700.1, “NASA Safety Policy and Requirements Document,” that was in effect during the time of our audit field work. On January 24, 2000, NASA issued NASA Procedures and Guidelines (NPG) 8715.3, “NASA Safety Manual,” which effectively replaced NHB 1700.1. NPG 8715.3 incorporates most of the requirements of NHB 1700.1 including the requirements that all procurement documentation and actions be reviewed from a safety standpoint, contractors submit a safety plan as part of the contract, and NASA conduct appropriate surveillance of contractor safety operations.

Management Controls Reviewed

We reviewed management controls relative to safety requirements for NASA contracts as described in NHB 1700.1, Section 202. Specifically, we reviewed the Contracting Officer’s procedures for ensuring that specific contractor safety tasks are clearly defined in the basic contract and that the contracts contain the required safety clauses and contractor safety plans. As discussed in the finding, controls need to be strengthened to ensure that Kennedy and Marshall include the NASA FAR Supplement safety clauses and contractor safety plans in each applicable contract.

Audit Field Work

We conducted field work from October 1999 through March 2000, at NASA Headquarters, Kennedy, and Marshall. We performed the audit in accordance with generally accepted government auditing standards.

Appendix B. Summary of Prior Audit Coverage

“Safety Considerations at Goddard Space Flight Center,” Report Number IG-00-047, September 22, 1999. In an April 1998 Senior Management Council meeting, the NASA Administrator stated that safety is the Agency's highest priority. The Administrator's mandate renewed the Agency's emphasis on safety and culminated in the Agency Safety Initiative (ASI.) The basic goal of the ASI is to make NASA the safest organization in the nation with zero tolerance for mishaps. The overall objective of the audit was to evaluate management of NASA's safety program. While conducting the audit, we identified issues requiring immediate management attention that could affect the safety of Goddard Space Flight Center (Goddard) employees. Specifically, we determined that (1) Goddard's various safety offices are not consolidated into one organization with a full-time director; (2) the mishap reporting process does not ensure that the causes of all mishaps are properly addressed and that all mishaps and related information are adequately reported; and (3) contractor's safety records were not evaluated prior to contract award, as required by the NASA Safety Manual. We recommended that the Director of Goddard (1) evaluate the effectiveness of the ongoing safety initiatives, (2) ensure that all mishaps are reported accurately and in a timely manner and that the root causes are identified, and (3) establish procedures for reviewing contractor safety records before contract award. Management concurred with each recommendation.

“Safety Concerns with Kennedy Space Center’s Payload Ground Operations,” Report Number IG-00-28, March 30, 2000. In February 1999, the NASA OIG was requested by the House of Representatives Committee on Science to address concerns related to safety functions of the Kennedy Space Center’s Payload Ground Operations Contract performed by McDonnell Douglas Aerospace, Space and Defense Systems; a subsidiary of The Boeing Company (Boeing). In response to this request, we reviewed the contractor’s operations to determine whether (1) safety responsibilities between Boeing and NASA had been clearly defined; (2) hazardous materials were being used in Kennedy’s processing facilities; and (3) hazardous materials, if used, were properly controlled. The audit identified that ground workers were using potentially hazardous materials in Kennedy processing facilities without exercising proper control and safety precautions. This condition exists because (1) Boeing safety personnel have not performed adequate, contract-required inspections of the facilities and (2) Kennedy or Boeing safety personnel had not reviewed the Materials Usage Agreements, which were not supported by risk analyses, authorizing use of the hazardous materials. As a result, NASA lacks assurance that associated risks are adequately identified, documented, reviewed, and mitigated. Improper use of these materials is hazardous to ground workers and increases the risk of damage to Space Shuttle payloads, including International Space Station hardware and equipment. Recommendations were made to management to (1) direct the contractor to perform analyses to support the use of all materials that do not meet requirements for flammability and electrostatic discharge, (2) clarify instructions for preparation of Materials Usage Agreements, and (3) increase surveillance of the contractor’s safety office inspection procedures. Management concurred with each recommendation.

Appendix C. Detailed Review of Contracts

Contract Number/ Contractor	Description	Auditor Observations
Kennedy Contracts		
NAS3-27262 Lockheed Martin Astronautics	Firm fixed-price contract for Launch Services of Intermediate Expendable Launch Vehicles for Earth Observing System AM-1.	OSHA cited the contractor for two safety violations since 1994.
NAS5-30722 McDonnell Douglas Corp.	Firm fixed-price contract for launch of Medium Class Expendable Launch Vehicles with Government payloads into assigned orbit(s).	OSHA cited the contractor for six safety violations since 1994.
NAS10-11400 McDonnell Douglas Aerospace, Space and Defense Systems	Cost-plus-award-fee contract for payload ground operations at Kennedy.	<p>We identified a significant safety problem in that the contractor was not properly controlling the use of potentially hazardous materials in Kennedy processing facilities. We reported on these problems in audit report number IG-00-028, dated March 30, 2000. See Appendix B.</p> <p>The contractor, who is responsible for safety in several facilities, reported 34 mishaps in fiscal year 1998 and 29 mishaps in fiscal year 1999. Total damage incurred, as a result of those mishaps, was \$29,467.</p>
NAS10-12060 Space Mark, Inc.	Cost-plus-fixed-fee contract for operation support services at the Vandenberg launch site in California.	<p>Kennedy did not require the contractor to submit a safety plan as part of the contract evaluation process. There was no contractor safety plan in the contract file prior to our audit. When our audit was announced, the Contracting Officer requested and received a safety plan from the contractor.</p> <p>OSHA cited the contractor for seven safety violations since 1994. Three of the violations occurred at the Vandenberg launch site in California. Also, the contractor reported two mishaps in fiscal year 1998 and four mishaps in fiscal year 1999. Total damage incurred, as a result of the mishaps was \$1,350.</p>
NAS10-12100 Praxair, Inc.	Fixed-price contract for providing liquid hydrogen for users on the east coast.	<p>We found no evidence of review of the contractor's safety plan by Kennedy. The review is required by NHB 1700.</p> <p>OSHA cited the contractor for 14 safety violations since 1994. One of the violations was imposed as a result of a fatal accident.</p>

Appendix C

Contract Number/ Contractor	Description	Auditor Observations
NAS10-12150 Air Products and Chemicals	Fixed-price contract for providing liquid hydrogen for users on the east coast.	Kennedy could not produce the contractor safety plan. OSHA cited the contractor for seven safety violations since 1994. One of the violations was imposed as a result of a nonfatal accident.
NAS10-98011 Air Products and Chemicals	Firm fixed-price contract for providing and transporting liquid hydrogen from Pennsylvania to destinations in California and New Mexico.	The contract did not contain the required safety clause, and a contractor safety plan was not included as part of the contract. OSHA cited the contractor for seven safety violations since 1994. One of the violations was imposed as a result of a nonfatal accident.
NAS10-98012 Praxair, Inc.	Firm fixed-price contract for providing and shipping liquid hydrogen from Connecticut to destinations in California.	The contract did not contain the required safety clause, and a contractor safety plan was not included as part of the contract. OSHA cited the contractor for 14 safety violations since 1994. One of the violations was imposed as a result of a fatal accident.
NAS10-98050 York International	Firm fixed-price contract for upgrading the utility annex chillers at Kennedy and reconditioning the motors.	OSHA cited the contractor for 45 safety violations since 1994. Six of these violations were imposed as a result of a fatal accident.
NAS10-99001 Space Gateway Support	Cost-plus-award-fee contract for joint base operations and support services for Kennedy, Cape Canaveral Air Station, and Patrick Air Force Base.	The contractor safety plan was not included as a contract deliverable, thus Kennedy never reviewed the contractor safety plan. When our audit was announced, the Contracting Officer requested and received a safety plan from the contractor. The contractor, who is responsible for a large portion of Kennedy safety, reported 1 mishap in fiscal year 1998 and 47 mishaps in fiscal year 1999. Total damage incurred as a result of these mishaps was \$42,507.

Contract Number/ Contractor	Description	Auditor Observations
NAS10-96033 RKT Constructors	Firm fixed-price contract for replacing boilers 1, 2, and 3 at Kennedy's central heat plant.	None
NAS10-99023 Oneida Construction	Firm fixed-price contract for modifying various Kennedy facilities to accommodate the disabled.	OSHA cited the contractor for three safety violations since 1994.
NAS10-99036 Rush Construction, Inc.	Firm fixed-price contract for construction of Flight Vehicle Landing Support Complex at Kennedy.	OSHA cited the contractor for 10 safety violations since 1994.

Marshall Contracts

NAS8-37716 Massachusetts Institute of Technology	Cost-no-fee contract to conduct an x-ray imaging spectroscopy scientific investigation.	<p>The contractor safety plan was not in the contract file when we reviewed the file. Management subsequently produced a copy of the safety plan; however, the plan was dated September 1994 –more than 4 years after NASA awarded the contract. There is no evidence of Marshall safety office review and approval of the safety plan.</p> <p>OSHA cited the contractor for one serious safety violation in 1994.</p>
NAS8-97256 Teledyne Brown Engineering	Cost-plus-incentive fee contract for operation and maintenance of propellants, pressurants, and calibration services at Marshall.	<p>OSHA cited the contractor for 13 serious safety violations since 1994.</p> <p>The contractor was involved in one close call in July 1999, but it did not result in injury or damage.</p>
NAS8-99073 New Century Pharmaceuticals	Cost-plus-fixed-fee contract for the Protein Crystal Growth Facility-based microgravity hardware; science, and applications.	The contract did not contain the required safety clause nor was there a contractor safety plan.
NAS8-37710 TRW	Cost-plus-award-fee contract for the Advanced X-ray Astrophysics Facility.	<p>The contractor did not submit a safety plan until October 1992, more than 2 years after contract award. We found no evidence of Marshall safety office review and approval of the safety plan.</p> <p>OSHA cited the contractor for 10 serious safety violations since 1994 and reported three accidents resulting in an employee fatality, a lost fingertip, and a broken leg.</p>

Appendix C

Contract Number/ Contractor	Description	Auditor Observations
NAS8-40887 Orbital Sciences Corporation	Firm fixed-price contract to perform a study known as "X-34"	The contractor did not submit a safety plan until 3 years after contract award (1 day before our scheduled review). There was no evidence of Marshall safety office's review and approval of the safety plan.
NAS8-38100 Thiokol	Cost-plus-award-fee contract to manufacture and deliver the Shuttle redesigned rocket motors.	OSHA cited the contractor for four safety violations since 1994 and three accidents, one resulting in loss of an employee's finger.
NAS8-99057 Smith Service Corporation	Firm fixed-price contract to repair and modernize Marshall building 4711.	The contract did not include the standard NASA FAR Supplement safety clause. A safety plan was not available in the contract file. Marshall management eventually produced a contractor safety plan dated 4 months after contract award. There was no evidence of review and approval of the safety plan by the Marshall safety office.
NAS8-97331 Sauer inc.	Firm fixed-price contract for the construction of the Marshall centralized chiller facility.	The contract did not include the standard NASA FAR Supplement safety clause. A safety plan was not available in the contract file. Marshall management eventually produced a contractor safety plan dated 4 months after contract award. There was no evidence of review and approval of the safety plan by the Marshall safety office. The contractor was involved in a mishap at Marshall in May 1999 that resulted in damages of \$30,000.
NAS8-39038 Lockheed/IBM	Cost-plus-fixed-fee contract for the Space Shuttle modular rocket engine.	The contract did not include the standard NASA FAR Supplement safety clause. A contractor safety plan was not in the contract file.
NAS8-50001 Boeing Aerospace	Cost, no-fee consolidated facility contract.	None.
NAS8-99053 Lee Builders	Firm fixed-price contract to repair the roof of Marshall Building 4619.	A safety plan was not in the contract file. Marshall management eventually produced a contractor safety plan that was dated 3 months after contract award. OSHA cited the contractor for five safety violations since 1994.
NAS8-98053 United Technologies Corporation Hamilton Sundstrand Space Systems International	Cost-plus-award-fee contract for the preliminary definition of the International Space Station water processor assembly and oxygen generator assembly.	The contractor safety plan was dated 7 months after contract award.

Summary of Questioned Contracts

Contract	No Safety Clause	No Safety Plan ¹	No Evidence of Safety Office Review	No. of OSHA Violations	No. of Mishaps	\$ Value of Mishaps
NAS10-12060		X	X	7	6	\$1,350
NAS10-12100			X	14		
NAS10-12150		X	X	7		
NAS10-98011	X	X	X			
NAS10-98012	X	X				
NAS10-99001		X	X		48	\$42,507
NAS8-37716		X	X			
NAS8-99073	X	X	X			
NAS8-37710		X	X	10		
NAS8-40887		X	X			
NAS8-99057	X	X	X			
NAS8-97331	X	X	X		1	\$30,000
NAS8-39038	X	X	X			
NAS8-99053		X		5		
NAS8-98053		X				
15	6	14	13	43	55	\$73,857

Percentage²

60% 24% 56% 52%

¹ The contractor did not submit a safety plan at contract award as required by NHB 1700.

² The percentages are of the total universe (25) of contracts reviewed.

Appendix D. Management's Response

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



Reply to Attn of: DE01

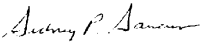
APR 17 2000

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

FROM: DE01/Sidney P. Saucier

SUBJECT: OIG Draft Report on the Audit Contract Safety Requirements at Kennedy
Space Center and Marshall Space Flight Center,
Assignment Number A9900302

We have reviewed the subject report and the Agency's detailed comments are enclosed. If you have any questions or need additional information regarding our comments, please contact RS40/Danny Walker at 256-544-0100.


Sidney P. Saucier
Associate Director

Enclosure

**NASA RESPONSE TO THE OIG DRAFT REPORT ON THE AUDIT
OF CONTRACTOR SAFETY REQUIREMENTS AT KENNEDY
SPACE CENTER AND MARSHALL SPACE FLIGHT CENTER
ASSIGNMENT NO. A9900302**

GENERAL COMMENTS TO THE REPORT:

We believe the draft report should be revised in order to provide clarification or remove incorrect, potentially misleading, or nonrelevant information. For example, the report states that 60 percent of the contracts reviewed did not have basic safety requirements. This figure is overstated since several contracts reported deficient either had a Safety and Health clause in the contract or did not require this clause. In addition, Appendix C of the report cites OSHA violations on NASA contractors that are misleading. For example, Teledyne Brown Engineering (NAS8-97256) has held the Pressurants and Propellants contract at MSFC for over 20 years and has never been cited for any violations. The report, however, states that “OSHA cited the contractor for 13 serious safety violations since 1994.” Also, contract NAS10-11400 at KSC had only 10 type C mishaps and 5 incidents at KSC during the 2-year period cited, not the 63 mishaps reported by the IG in Appendix C. We speculate that the IG’s total includes close calls, which are not mishaps by NASA definitions. We believe that the IG should either report the actual safety violations cited on NASA contracts or make clarification in the Appendix.

See Appendix E,
OIG Comment 1.

See Appendix E,
OIG Comment 2.

See Appendix E,
OIG Comment 3.

The IG recognizes that many of the safety clause requirements discussed are applied to contracts based on NASA risk management initiatives, and are applicable to defined classes of acquisitions “except for purchasing commercial off-the-shelf items.” Yet, on page 3 when citing the requirements for the NASA Safety and Health clause, the report fails to note the following exceptions and also fails to recognize them when discussing specific contracts later in the report. The failure of the IG to note these exceptions or to afford them legitimacy, distorts its overall findings.

See Appendix E,
OIG Comment 4.

- a. As per FAR 12.301(d), “Notwithstanding prescriptions contained elsewhere in the FAR, when acquiring commercial items, contracting officers shall be required to use only those provisions and clauses prescribed in this part.” FAR 12.301(e) elaborates discretionary use of FAR provisions and clauses, but limits such discretion only to “when their use is consistent with the limitations contained in 12.302.” Examples are then provided which do not illustrate the safety issues addressed by the audit. FAR 12.301(f) goes on to authorize agencies to require additional clauses. The NASA FAR Supplement (NFS) at Part 1812.301(f)(i) lists all such authorized additional clauses, which does not include the Safety and Health clause. NFS 1812.301(f)(ii) further states, “No other provisions and clauses prescribed in the NFS or Center documents shall be used in acquisitions of commercial items...”

See Appendix E,
OIG Comment 5

Appendix D

See Appendix E,
OIG Comment 5.

- b. As per NFS 1823.7001(b), the Safety and Health clause is also not required in contracts subject to the Walsh-Healey Public Contracts Act or the Service Contract Act.

SPECIFIC COMMENTS TO THE REPORT:

See Appendix E,
OIG Comment 6.

Page 2, **Background**. 2nd paragraph (p), 3rd sentence (s). The report states that “both Centers incurred mishap damage totaling \$772,000 or 94 percent of all NASA contractor mishap damage.” It is important to distinguish between “all” and “reported” as not all NASA Centers report their contractor mishaps. The data is not normalized and may be misleading due to the amount and type of work being done at these two Centers.

See Appendix E,
OIG Comment 7.

Page 2, **Finding**. 1st p, 1st s. The report states “Sixty percent (15 of 25) of contracts reviewed at Kennedy and Marshall did not include basic requirements to ensure safety.” This sentence implies that there were no Safety and Health Plans for 60 percent of the contracts reviewed. However, on page 4 of the report, the table “**Contracts With Missing Clauses and Safety Plans**” contradicts this statement. The table lists “eight contracts for which a safety plan was not provided at the time of contract award.” Although subsequent to contract award, safety plans were provided. Also, two of these contracts were fixed price Invitation for Bid construction procurements. Safety plans for these contracts are approved after bid opening and prior to notice to proceed (NTP). No work occurs until after the NTP.

See Appendix E,
OIG Comment 8.

Page 3, **Footnote 5**. The footnote states that “The OSHA violations were for the entire company and not necessarily at the place of NASA contract performance.” This Footnote should be explained in the main body. It is important to differentiate between safety violations at the NASA Center, and those at other locations. Even though the violations were for the same contractor, they are different contacts and often, if not always, different management teams. It is improper to reflect this company-wide OSHA information since the events may not be related to NASA activities.

See Appendix E,
OIG Comment 5.

Page 4, **Contracts With Missing Clauses and Safety Plans**. Two KSC contracts are listed as missing the NFS Safety and Health clause. KSC believes that the auditor is referring to NAS10-98011 and NAS10-98012. If so, there are no required NASA FAR Supplement safety clauses since both these contracts were commercial acquisitions and, in the absence of a specific waiver, use of the clause is essentially prohibited by the FAR and NFS. Also, five KSC contracts are listed as missing safety plans. Again, if the auditor is referring to NAS10-98011 and NAS10-98012, safety plans are not required. Additionally, the safety plan for NAS10-12150 was inadvertently sent to record storage and has since been retrieved.

See Appendix E,
OIG Comment 1.

Three MSFC contracts are listed as missing the NFS Safety and Health clause. We found, however, that two of the contracts referenced, NAS8-99057 and NAS8-97331, do contain the NFS Safety and Health clause. Also, nine MSFC contracts are listed as missing safety plans. If the auditor is referring to NAS8-99073, NAS8-99057, and NAS8-97331, this data is incorrect since safety plans were incorporated by the contractors.

See Appendix E,
OIG Comment 1.

See Appendix E,
OIG Comment 7.

Page 4, **Safety Office Oversight**, 2nd p, 1st s. The report states “There was no evidence of either Center’s safety office having been involved in the contracting process (such as review of specifications and review and approval of contractor safety plan) for 14 of the 25 contracts examined.” This statement is misleading. Contracts with safety plans submitted after the start of contract often have memorandums from the safety office to the contracting officer listing comments to the safety plan. These memoranda are evidence that the safety office was involved in the contracting process. Safety Office personnel generally are involved in tailoring of safety-related Data Requirements Documents as well.

See Appendix E,
OIG Comment 7.

Page 4, **Kennedy Safety Office Involvement**, 4th s. The report states “The Kennedy Chief Safety Officer informed us that a safety plan should have been included in the contract...” Again, at the top of page 6, the IG indicates that the Kennedy Chief Safety Officer stated two commercial item contracts “should have had safety plans regardless of the type of acquisition.” In subsequent discussions with Mr. Ron Gillett, KSC Chief Safety Officer, Mr. Marlo Krisberg, Chief, Mission Support Office, explained revision to the FAR/NFS provisions. Mr. Gillett indicated that he was unfamiliar with the rules applicable to commercial acquisitions and that his comments were made simply upon the basis that the commodity in question was a potentially hazardous item. He did not have a problem with the absence of a safety plan on these contracts in consideration of these circumstances.

See Appendix E,
OIG Comment 9.

Page 5, **Marshall Safety Office Input**, 7th s. The report states “Marshall safety office personnel informed us that they perform independent reviews of contractor safety programs to ensure compliance with contracted safety requirements. However, when we asked, the Marshall safety office was unable to provide documentation supporting these reviews.” We agree that the procedure for conducting surveillance of contracts was not clearly explained, but evidence of independent reviews exists in the form periodic contractor evaluations provided to the contracting officer for award fee performance. We also perform building inspections and participate in mishap investigations involving onsite contractors. MSFC personnel who stated that safety was usually delegated to DCMC were either misinformed or misunderstood by the auditor. MSFC also performs surveillance through periodic, documented NASA Engineering Quality Audits (NEQA) at offsite contractor locations. These NEQA audit teams include safety personnel.

See Appendix E,
OIG Comment 10.

Page 5, **Effects of Missing Contract Safety Provisions**, 2nd s. The report states “by not including required safety clauses in the contracts, contractors are not bound to safety requirements.” This is not a true statement. The NASA safety clause imposes the requirement for compliance “with all Federal, State, and local laws applicable to safety

See Appendix E,
OIG Comment 11.

See Appendix E,
OIG Comments 1.5.

and health” and imposes no special NASA safety requirements, unless separately stated elsewhere in the contract (which is not the case for the three example contracts cited). The IG’s characterization that safety can only be achieved if NASA’s clause is included in a contract is not correct. Whether explicitly stated in the contract or not, the contractor must still comply with the OSHA, DOT, other Federal, and State and local laws applicable to safety and health.

Page 5, **Effects of Missing Contract Safety Provisions**, 1st s. The IG attempts to illustrate its comments with three KSC contracts (NAS10-12150, NAS10-98011, and NAS10-98012). It is stated that these contracts “did not contain the required safety clause, contractor safety plan, or both...” Again, this is not correct. NAS10-12150 includes the required Walsh-Healey clause; and, although the safety plan required by the contract could not be produced while the auditor was here, it was indeed submitted and has since been retrieved from storage. The other two contracts were commercial acquisitions and did not require inclusion of the Safety and Health clause; therefore, safety plans were not required.

See Appendix E,
OIG Comment 12.

Page 10, **Appendix C**. We believe that the number of violations listed come from the Incident Reporting Information System and do not take into consideration those dropped or documented as potential close calls. In addition, NASA safety officials queried the OSHA web system and could not reconcile to the OSHA violations cited in this report.

See Appendix E,
OIG Comment 3.

Page 10, **Appendix C**, NAS810-11400. The report states “The contractor, who is responsible for safety in several facilities, reported 34 mishaps in fiscal year 1998 and 29 mishaps in fiscal year 1999. Total damage incurred, as a result of these mishaps, was \$29,467.” Our records show that the contractor had only 10 type C and 5 incident mishaps during this 2-year period.

See Appendix E,
OIG Comment 13.

Page 11, **Appendix C**, NAS10-98050. The required safety plan was reviewed and concurred in by the Safety Office and the documentation is in the contract file.

See Appendix E,
OIG Comment 14.

Page 12, **Appendix C**, NAS8-37716. The report states that “OSHA cited the contractor for one serious safety violation in 1994.” However, OSHA cleared the contractor of any blame for the cited incident.

See Appendix E,
OIG Comment 2.

Page 12, **Appendix C**, NAS8-97256. The report states that “OSHA cited the contractor for 13 serious safety violations since 1994.” Teledyne Brown Engineering (TBE) has held the Pressurants and Propellants Contract at MSFC for over 20 years. The TBE organizations cited by the OIG as having serious OSHA violations are subsidiaries of TBE Corporate, one located in Virginia and the other located in Maryland. OSHA has never cited the TBE organization providing services to MSFC for any violations, serious or otherwise.

See Appendix E,
OIG Comment 15.

Page 12, **Appendix C**, NAS8-37710. The report states that “OSHA cited the contractor for 10 serious safety violations in the last 5 years including 2 accidents; 1 resulted in an employee losing a finger.” We are unable to verify the cited 10 violations. The

following 5 incidents were reported to Cal/OSHA in the past 5 years for TRW Space Park, Redondo Beach, CA. Citations were issued for 3 of the incidents.

- 10/12/99 A TRW employee suffered a massive coronary.
- 1/21/99 A TRW employee suffered amputation of tip of right middle finger when moving steel grate. A citation was issued.
- 1/28/98 A TRW employee broke left femur tripping over vacuum cleaner cord. A citation was issued.
- 9/25/97 TRW employee fatality -- Chest was crushed by motor vehicle. A citation was issued.
- 2/20/95 TRW employee -- Self-inflicted gunshot wound.

Page 13, **Appendix C**, NAS8-38100. The report states that “OSHA cited the contractor for five safety violations since 1994 including three accidents; one resulted in an employee losing a finger.” There were only two OSHA violations/citations issued as a result of a 1994 accident. Since 1994, there have been three formal OSHA inspections performed at Thiokol related to the RSRM Buy 3. No additional violations/citations were issued up to the time the IG issued their report. However, it came to our attention on 4/13/00 that the recent wall-to-wall OSHA inspection resulted in two minor citations. Background information on this contractor is presented below.

- 2/24/94: A “serious” violation was issued for \$1,400 at H-7, Clearfield Operations for a slick floor - failure to provide clean, and so far as possible, dry condition. Also, an “other” violation (\$300) was issued for failure to inspect unsafe conditions and practices. Both violations were a result of a water blast gun injury accident.
- 3/15/99: An OSHA inspection was conducted at the M63A Casting House. The inspection was a result of an accident where full and partial finger amputations occurred when an employee’s hand was trapped between the bottom of a mix bowl support plate and a mix bowl support stand. The inspection resulted in an “in compliance” notice with no violations issued.
- 7/28/99: An OSHA inspection was conducted at Thiokol Composite Resins Operations (non-Shuttle related commercial program) at the Ogden DDO TCR facility. The inspection was a result of various alleged safety/health hazards. The allegations were determined to be unfounded and no cause was found to issue a citation. A notice of “in compliance” was issued as a result of the OSHA inspection.

See Appendix E,
OIG Comment 16.

Appendix D

- 12/1/99: An OSHA inspection was performed at the Thiokol Clearfield Freeport Center Operations. The inspection was a result of an employee allegation that changes in processes had not evaluated employee's exposure to asbestos. The allegations were determined to be unfounded; however, the inspector performed a wall-to-wall inspection of the facilities. As a result of this inspection, the contractor did receive 2 OSHA citations; one for an employee using a roll-up door without using the proper lockout/tagout procedures, and one for the lack of guards on the chucks of lathes.

See Appendix E,
OIG Comments 17,
18 and 20.

Page 13, **Appendix C**, NAS8-99057. The report states that "The contract did not include the standard NASA FAR Supplement safety clause. A safety plan was not available in the contract file. Marshall management eventually produced a contractor safety plan that was dated 4 months after contract award. There was no evidence of review and approval of the safety plan by the Marshall safety office." Safety and Health Clause 1852.223-70 is in the contract at page 4 Section I. A Safety & Health Plan was approved 1/14/99. Construction procurements are fixed price Invitation For Bid (IFB) and safety plans are approved after bid opening and prior to notice to proceed (NTP). No on site work on MSFC occurs until after NTP.

See Appendix E,
OIG Comments 17,
18, 19 and 20.

Page 13, **Appendix C**, NAS8-97331. The report states that "The contract did not include the standard NASA FAR Supplement safety clause. A safety plan was not available in the contract file. Marshall management eventually produced a contractor safety plan that was dated 4 months after contract award. There was no evidence of review and approval of the safety plan by the Marshall safety office." The Safety and Health clause is in the contract at section I.3. Construction procurements are fixed price IFB and safety plans are approved after bid opening and prior to NTP. No onsite work on MSFC occurs until after NTP.

See Appendix E,
OIG Comments 18
and 21.

The report also states that "The contractor was involved in a mishap at Marshall in May 1999 that resulted in personal injury and \$30,000 worth of damage." NASA recovered \$30,000 for damages due to improper removal of asbestos but there were no injuries associated with this incident as indicated by the OIG.

See Appendix E,
OIG Comments 18
and 20.

Page 13, **Appendix C**, NAS8-99053. The report states that "A safety plan was not available in the contract file. Marshall management eventually produced a contractor safety plan that was dated 3 months after contract award." However, a Safety and Health Plan was approved 12/29/98. Construction procurements are fixed price IFB and safety plans are approved after bid opening and prior to NTP. No onsite work on MSFC occurs until after NTP. The report also states that "OSHA cited the contractor for five safety violations in the last 5 years." There have been no OSHA violations on this contract, only one close call.

Page 13, **Appendix C**, NAS8-98053. The report states that "The contractor safety plan was dated 7 months after contract award." A waiver for providing the Safety and Health plan with the offeror's proposal was obtained and is on file. The plan was to be submitted as part of a Data Requirement deliverable in a major design review (PRR)

deliverable. The Data Requirement was delivered 2/20/98. MSFC never approved nor disapproved the document. On 5/14/98, the Data Requirement deliverable, including the plan, was received as a preliminary plan pending MSFC approval. MSFC approved the plan 8/19/98 and the contractor reissued the Data Requirement as an approved plan on 8/28/98.

RESPONSES TO THE RECOMMENDATIONS:

OIG Recommendation 1: The Directors of John F. Kennedy Space Center and George S. Marshall Space Flight Center should identify all open contracts that involve either potentially hazardous operations or exceed \$1 million, and determine whether those contracts have the required safety clauses and contractor safety plans.

KSC Response: Concur. KSC Safety will review all KSC contracts that involve either potentially hazardous operations or exceed \$1 million that do not include the Safety and Health clause or a safety plan. The Institutional Safety and Quality Branch in Spaceport Services is the point of contact to review procurements with the potential for safety issues.

KSC Corrective Action Officer:	Director, Safety, Health and Independent Assessment
KSC Corrective Action Closure Official:	AA-A/Jim Jennings
KSC Projected Closure Date:	9/30/2000

MSFC Response: Concur. An effort is under way to identify all affected contracts. Two new Center-wide work instructions have been approved in the contracting area, (MWI 5100.1 "Procurement Initiators Guide" and MWI 8715.9 "Occupational Safety Guidelines for MSFC Contractors") with specific safety review steps in the procurement process. An electronic database will be developed, populated, and maintained to track contractor safety requirements and approval of safety and health plans.

Corrective Action Officer:	QS10/Herb Shivers
Corrective Action Closure Official:	DE01/Sidney Saucier
Projected Closure Date:	9/30/2000

OIG Recommendation 2: The Directors of John F. Kennedy Space Center and George S. Marshall Space Flight Center should establish a methodology for determining the cost effectiveness of modifying those contracts determined deficient (as defined above), and use this methodology to assess the risk of not modifying the contracts and make those modifications deemed cost effective and necessary.

KSC Response: Concur. For all contracts that should, but do not include the required safety clauses, the Procurement Office will request a proposal from the contractor to determine any costs associated with adding the clauses.

KSC Corrective Action Officer: Director, KSC Procurement Office
KSC Corrective Action Closure Official: AA-A/Jim Jennings
KSC Projected Closure Date: 9/30/2000

MSFC Response: A methodology to determine which existing contracts will be updated to meet the new safety requirements will be developed.

Corrective Action Officer: QS10/Herb Shivers
Corrective Action Closure Official: DE01/Sidney Saucier
Projected Closure Date: 9/30/2000

OIG Recommendation 3: The Directors of John F. Kennedy Space Center and George S. Marshall Space Flight Center should direct the Center safety offices to assist the responsible Center official in performing an appropriate level (based on assessed risk) of contractor surveillance, either themselves or by delegation, for each current applicable contract.

KSC Response: Concur. KSC Safety already provides various levels of contract surveillance for KSC contracts. With regard to the construction contracts, Government representatives such as the assigned Contracting Officer Technical Representatives (COTR's) and field site inspectors, along with the contractors, monitor work on a daily basis. In the KSC 2000 reorganization, S&MA is embedded in all KSC organizations and will have the responsibility to assure the appropriate level of contractor surveillance. The Safety, Health and Independent Assessment Directorate will monitor their performance.

KSC Corrective Action Officer: Director, Safety, Health and Independent Assessment
KSC Corrective Action Closure Official: AA-A/Jim Jennings
KSC Projected Closure Date: 9/30/2000

MSFC Response: The MSFC Safety Office shall use the data base developed as part of Recommendation 1 (above) to track contractor surveillance requirements and dates. In addition, an organization work instruction will be developed to document the surveillance process.

Corrective Action Officer: QS10/Herb Shivers
Corrective Action Closure Official: DE01/Sidney Saucier
Projected Closure Date: 9/30/2000

Appendix E. OIG Comments on Management's Response

Kennedy and Marshall management provided the following comments in response to our draft report. Our responses to the comments are also presented.

Management's Comment. The report states that 60 percent of the contracts reviewed did not have basic safety requirements. This figure is overstated because several contracts that were reported as deficient either had a safety and health clause in the contract or did not require this clause.

1. OIG Comment. Management provides no support for its statement that some of the questioned contracts contained either the required safety clause or the contractor safety plans. We gave management at both Centers several months to review the results of our audit and to provide supporting documentation to refute our observations. For example, during the initial stages of the audit in September 1999, we found that contract NAS10-12150 at Kennedy did not contain a required contractor safety plan. We immediately brought this discrepancy to the attention of the Contracting Officer. The Contracting Officer stated that he could not locate a copy of the safety plan and sent us to the Kennedy safety office to obtain a copy of the plan. The Kennedy safety office, in turn, could not locate the contractor safety plan, and told us that we had to obtain it from the Contracting Officer.

In December 1999, we gave management a spreadsheet detailing the results of our review of Marshall contracts. Marshall management responded with additional information and supporting documentation that we incorporated into our overall observations. On March 1, 2000, we provided management with a copy of the proposed draft report (including Appendix C which shows the detailed results of our review of each contract) and followed up with a March 8, 2000, visit to Marshall to discuss the proposed report with responsible management officials. During this meeting, Marshall management did not dispute the facts in the proposed draft report and did not offer additional information or documentation to refute the audit observations.

Management's Comment. Appendix C of the report cites OSHA violations on NASA contractors that are misleading. For example, Teledyne Brown Engineering (NAS8-97256) has held the Pressurants and Propellants contract at Marshall for more than 20 years and has never been cited for violations. The report, however, states that OSHA cited the contractor for 13 serious safety violations since 1994.

2. OIG Comment. According to OSHA's Integrated Management Information System, Teledyne Brown Engineering was cited for 13 safety violations from January 1994 through December 1997.

Appendix E

Management’s Comment. Contract NAS10-11400 at Kennedy had only 10 type C mishaps and 5 incidents¹² during 1998 and 1999, not the 63 mishaps reported by the OIG. We speculate that the OIG’s total includes close calls, which are not mishaps.

3. OIG Comment. Kennedy’s Incident Reporting Information System records show that the contractor, McDonnell Douglas Aerospace, Space and Defense Systems, reported 63 mishaps totaling \$29,467 in damages during 1998 and 1999. NASA Policy Directive 8621.1G, “NASA Mishap Reporting and Investigation Policy,” defines a mishap as:

Any unplanned occurrence or event resulting from any NASA operation or NASA equipment anomaly, involving injury or death to persons, damage to or loss of property or equipment, or mission failure. . . .

Included in that definition of mishaps are close calls that are defined as:

An occurrence in which there is no injury, no equipment/property damage equal to or greater than \$1,000, and no significant interruption of productive work, but which possesses a high severity potential for any of the mishaps defined as Types A, B, or C Mishaps, Mission Failure, or Incident.

Management’s Comment. The OIG recognizes that many of the safety clause requirements discussed are applied to contracts based on NASA risk management initiatives and are applicable to defined classes of acquisitions except for contracts for commercial off-the-shelf items. Yet, the report fails to note this exception.

4. OIG Comment. As noted in the first paragraph on page 2 of the report, NASA’s Risk-Based Acquisition Management initiative did not apply to contracts that were active as of the time of our audit.

Management’s Comment. Contracts treated as commercial acquisitions under FAR Part 12, and contracts subject to the Walsh-Healey Public Contracts Act¹³ are not subject to the NASA FAR Supplement safety and health clause.

¹² NASA Policy Directive 8621.1G, section 2 (b.)(1), defines the various mishaps as follows:

Type A – Mishap causing death or damage greater than \$1 million.

Type B – Mishap resulting in permanent disability, hospitalization, or damage greater than \$250,000.

Type C – Mishap causing damage to property greater than \$25,000 and/or lost workdays.

Mission Failure – Mishap that prevents the achievement of a primary NASA mission.

Incident – Mishap that results in personal injury greater than first-aid severity and property damage greater than \$1,000.

¹³ The Walsh-Healey Public Contracts Act requires that “contracts entered into by any agency of the United States for the manufacture or furnishing of materials, supplies, articles, and equipment in any amount exceeding \$10,000 must contain, among other provisions, a stipulation that no part of such contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under the contract be manufactured or fabricated in any plants, factories, buildings, or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of the contract.”

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5. OIG Comment. Throughout its response, management basically states that Kennedy contracts NAS10-12100, NAS10-12150, NAS10-98011 and NAS10-98012 were treated either as commercial acquisitions or were subject to the Walsh-Healey Public Contracts Act and were, therefore, not subject to NASA's safety policy. We do not agree with management's position for the following reasons:

- FAR Part 12.202 (a) states, "Market research is an essential element of building an effective strategy for the acquisition of commercial items and establishes the foundation for the agency description of need . . ." The safety of the general public and NASA employees has been clearly communicated to all NASA employees as a basic agency need as part of the Agency Safety Initiative (ASI). However, the market research documentation that supports these contracts makes no reference to safety. As a result, there is no documented evidence of NASA's assurance that the liquid hydrogen is transported safely as part of these contracts.
- The Walsh-Healey Public Contracts Act requires contracts entered into by a Federal agency for the furnishing of materials exceeding \$10,000 to contain a stipulation that no part of the contract will be performed under working conditions that are unsanitary, hazardous, or dangerous to the health and safety of its employees engaged in the performance of the contract. Provisions do not ensure the safety of the general public during potentially hazardous operations such as the transport of liquid hydrogen across the country and do not ensure the safety of NASA employees when the liquid hydrogen is unloaded at its final destination.
- NHB 1700.1 requires that the safety requirements, documentation, and procedures (including contractor safety plans, safety office review, etc.) outlined in the handbook be included in all contracts that support NASA operations and makes no exceptions.

Regardless of these requirements, sound management and common sense should prevail. The shipment of an extremely hazardous material like liquid hydrogen across the country is a hazardous operation. By allowing this contract to proceed without ensuring that the contractor has a sound safety program in place, NASA has not demonstrated the commitment to safety emphasized by the ASI.

Management's Comment. The report states that both Centers incurred mishap damage totaling \$772,000 or 94 percent of all NASA contractor mishap damage. It is important to distinguish between "all" and "reported" as not all NASA Centers report their contractor mishaps.

6. OIG Comment. Footnote 8 has been added to the report to show that contractor mishap information was obtained from a NASA Office of Safety and Mission Assurance database and that several NASA Centers did not report contractor mishap data to that database.

Management's Comment. The report states "Sixty percent (15 of 25) of contracts reviewed at Kennedy and Marshall did not include basic requirements to ensure safety." This statement implies that there were no safety and health plans for 60 percent of the contracts reviewed.

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However, the table "Contracts With Missing Clauses and Safety Plans," on page 4 of the report contradicts this statement. The table lists eight contracts for which a safety plan was not provided at the time of contract award, although subsequent to contract award, safety plans were provided. Also, two of these contracts were fixed price Invitation for Bid construction procurements. Safety plans for these contracts are approved after bid opening and prior to notice to proceed. No work occurs until after the notice to proceed.

7. OIG Comment. The NASA FAR Supplement and NHB 1700.1 clearly state that contractor safety plans should be reviewed before awarding the contract. Some of the safety plans were submitted 2 to 3 years after contract award including one safety plan that was dated the day before we arrived to conduct audit work at Marshall. We question the effectiveness of reviewing a safety plan after contract award, and in particular, 2 to 3 years after contract award. We also question the value of a safety plan submitted by a contractor 2 to 3 years after contract award. When formulating our audit conclusions, we did not question any contract for which we found even minor evidence to support that NASA safety had reviewed the safety plan. For all questioned contracts, there was no evidence of NASA safety office review of the safety plan at any time.

The table on page 4 of the report explains that some of the contracts' safety plans were submitted late. We have revised the Results in Brief section of the report to clarify that the safety plan is required at contract award.

Management's Comment. Footnote 5 states that "The OSHA violations were for the entire company and not necessarily at the place of NASA contract performance." This footnote should be explained in the main body. It is important to differentiate between safety violations at the NASA Center and those at other locations. Even though the violations were for the same contractor, they are different contracts and often, if not always, different management teams. It is improper to reflect this company-wide OSHA information since the events may not be related to NASA activities.

8. OIG Comment. The information previously discussed in the footnote has been placed in the body of the report. We believe that it is proper to show company-wide OSHA information because it is a reflection of the overall safety management practice of the particular NASA contractor. This information should be reviewed and evaluated by NASA prior to contract award. The OSHA information reflects that the company as a whole has a history of safety violations, indicating the need for a thorough NASA review of the contractor's safety plan prior to contract award.

Management's Comment. The OIG indicates that the Kennedy Chief Safety Officer stated that two commercial item contracts should have had safety plans regardless of the type of acquisition. In subsequent discussions, the Kennedy Chief Safety Officer indicated that he was unfamiliar with the rules applicable to commercial acquisitions and that his comments were

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made simply on the basis that the commodity in question was a potentially hazardous item. He did not have a problem with the absence of a safety plan on these contracts in consideration of these circumstances.

9. OIG Comment. No change has been made to the report. The Chief Safety Officer was concerned enough about the nature of these contracts to initially state to the audit team that the contracts should have safety plans "regardless" of the type of acquisition. Kennedy personnel and not the audit team conducted the subsequent discussions referred to by management.

Management Comment. We agree that the procedure for conducting surveillance of contracts was not clearly explained, but evidence of independent reviews exists in the form of periodic contractor evaluations provided to the Contracting Officer for award fee performance. We also perform building inspections and participate in mishap investigations involving onsite contractors. Marshall personnel who stated that safety was usually delegated to DCMC were either misinformed or misunderstood by the auditor. Marshall also performs surveillance through periodic, documented NASA Engineering Quality Audits at onsite contractor locations. These audit teams include safety personnel.

10. OIG Comment. Participation in mishap investigations and input to award fee evaluations is not the same as conducting surveillance of contractor operations. NHB 1700.1, Chapter 2, Section 202(c)(2), states that Safety Officials are responsible for:

Conducting safety program reviews or technical evaluations of the contractor's operation or product for safety, including compliance with safety provisions of the contract.

Section 209 further states:

Field Installations are expected to have appropriate, adequate, and effective contractor safety and surveillance and evaluation programs. The contractor's approved safety programs, including actual performance and accident experience, will be evaluated during the initial stages of contract work to ensure early correction of deficiencies and, subsequently, will be evaluated at least annually throughout the life of the contract.

Marshall had no documented, auditable procedures for conducting any of the aforementioned reviews. We acknowledge in the report that Marshall management stated that it performed some contractor reviews. However, there was no record of these reviews which the report also notes.

Management's Comment. The report states that by not including required safety clauses in the contracts, contractors are not bound to safety requirements. This is not a true statement.

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11. OIG Comments. The report has been revised to state that by not including required safety clauses in the contracts, “the contractors are not contractually bound to the requirement for compliance with all Federal, state, and local laws applicable to safety.”

Management’s Comment. We believe that the number of violations listed comes from the Incident Reporting Information System and does not include those dropped or documented as potential close calls. In addition, NASA safety officials queried the OSHA Web site and could not reconcile to the OSHA violations cited in the report.

12. OIG Comment. We obtained the mishap information from NASA’s Incident Reporting Information System maintained at each Center. We took into consideration mishaps that were dropped or documented as potential close calls and determined that they should all be included. Just because an incident was dropped from the system does not negate the fact that a mishap occurred and could happen again. As stated in OIG Comment 3, close calls are included in NASA’s definition of mishaps and should be included in the number of mishaps per contractor. We obtained information on OSHA violations from OSHA’s Integrated Management Information System on the World Wide Web.

Management Comments. The required safety plan for contract NAS10-98050 (shown in Appendix C) was reviewed and concurred in by the safety office, and the documentation is in the contract file.

13. OIG Comment. The appropriate NASA FAR Supplement safety clause and a safety plan were included in the contract. Within the contract file, there was documented approval of the safety plan by the Kennedy safety office on May 12, 1998. Also, the Contracting Officer’s Technical Representative reviewed and signed off on the plan on May 14, 1998. We revised the report accordingly.

Management Comment. Regarding contract NAS8-37716, the report (Appendix C) states that “OSHA cited the contractor for one serious safety violation in 1994.” However, OSHA cleared the contractor of any blame for the cited incident.

14. OIG Comment. The OSHA inspection record does not support management’s statement that the contractor was cleared by OSHA of any blame for the incident.

Management’s Comment. Regarding contract NAS8-37710, the report (Appendix C) states that “OSHA cited the contractor for 10 serious safety violations in the last 5 years including 2 accidents; 1 resulted in an employee losing a finger.” We are unable to verify the cited 10 violations.

15. OIG Comment. The OSHA Integrated Management Information System showed 10 violations in the last 5 years for this contractor.

Management’s Comment. For contract NAS8-38100, the report (Appendix C) states that OSHA cited the contractor for five safety violations since 1994 including three accidents.

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There were only two OSHA violations/citations issued as a result of the 1994 accident. No additional violations/citations were issued up to the time the OIG issued its report. However, it came to our attention on April 13, 2000, that a recent OSHA inspection resulted in two minor citations.

16. OIG Comment. We have revised the report accordingly.

Management's Comment. For contracts NAS8-97331 and NAS8-99057, the report (Appendix C) states that the contracts did not contain the NASA FAR Supplement standard safety and health clause. The NASA FAR Supplement safety and health clause is in both contracts.

17. OIG Comment. We found no evidence of the applicable safety and health clause in either contract file.

Management's Comment. For contracts NAS8-97331, NAS8-99057, NAS8-99053 and NAS8-98053, the report (Appendix C) states that the contractor safety plans were submitted after contract award. Construction procurements are fixed-price invitation for bid and safety plans are approved after bid opening and prior to notice to proceed. No onsite work at Marshall occurs until after the notice to proceed. For contract NAS8-98053, a waiver for providing the safety and health plan with the offeror's proposal was obtained and is on file.

18. OIG Comment. The NASA FAR Supplement and NHB 1700.1 clearly state that contractor safety plans should be reviewed before contract award. We question the effectiveness of reviewing a safety plan after a contract is awarded. Also, we found no evidence of the aforementioned waiver in the contract file for contract NAS8-98053.

Management's Comment. For contract NAS8-97331, the report (Appendix C) states that there was personal injury as a result of the contractor's mishap. NASA recovered \$30,000 for damages due to improper removal of asbestos, but there were no injuries associated with this incident as indicated by the OIG.

19. OIG Comment. We revised Appendix C of the report to show that there was no immediate personal injury as a result of the mishap.

Management Comment. For contracts NAS8-99057 and NAS8-97331, the report (Appendix C) states that there was no evidence of review and approval of the safety and health plan by the Marshall safety office. For contract NAS8-99057, a safety and health plan was approved on January 14, 1999. For contract NAS8-97331, a safety and health plan was approved on December 29, 1998.

20. OIG Comment. We found no evidence of review of the safety plan by Marshall safety personnel for either contract.

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Management's Comment. For contract NAS8-99053, the report (Appendix C) states that OSHA cited the contractor for five safety violations in the last 5 years. There have been no OSHA violations on this contract, only one close call.

21. OIG Comment. OSHA's Integrated Management Information System shows five safety violations for this contractor since 1994.

Appendix F. Report Distribution

National Aeronautics and Space Administration (NASA) Headquarters

A/Administrator
AE/Chief Engineer
AI/Associate Deputy Administrator
B/Chief Financial Officer
B/Comptroller
BF/Director, Financial Management Division
C/Associate Administrator for Headquarters Operations
G/General Counsel
H/Associate Administrator for Procurement
J/Associate Administrator for Management Systems
JM/Director, Management Assessment Division
L/Associate Administrator for Legislative Affairs
M/Associate Administrator for Space Flight
P/Associate Administrator for Public Affairs
Q/Associate Administrator for Safety and Mission Assurance
R/Associate Administrator for Aerospace Technology
S/Associate Administrator for Space Science
U/Associate Administrator for Life and Microgravity Sciences and Applications
Y/Associate Administrator for Earth Science
Z/Associate Administrator for Policy and Plans

NASA Centers

Director, Ames Research Center
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Director, John H. Glenn Research Center at Lewis Field
Director, Goddard Space Flight Center
Director, Jet Propulsion Laboratory
Director, Lyndon B. Johnson Space Center
Director, John F. Kennedy Space Center
Director, Langley Research Center
Director, George C. Marshall Space Flight Center
Director, John C. Stennis Space Center

Appendix F

Non-NASA Federal Organizations and Individuals

Assistant to the President for Science and Technology Policy
Deputy Associate Director, Energy and Science Division, Office of Management and Budget
Branch Chief, Science and Space Programs Branch, Energy and Science Division,
Office of Management and Budget
Associate Director, National Security and International Affairs Division, Defense Acquisition
Issues, General Accounting Office
Professional Assistant, Senate Subcommittee on Science, Technology, and Space

Chairman and Ranking Minority Member - Congressional Committees and Subcommittees

Senate Committee on Appropriations
Senate Subcommittee on VA, HUD, and Independent Agencies
Senate Committee on Commerce, Science, and Transportation
Senate Subcommittee on Science, Technology, and Space
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on VA, HUD, and Independent Agencies
House Committee on Government Reform
House Subcommittee on Government Management, Information, and Technology
House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Member

Honorable Pete Sessions, U.S. House of Representatives

NASA Assistant Inspector General for Auditing Reader Survey

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Report Title: Final Report on the Audit of Contract Safety Requirements at Kennedy Space Center and Marshall Space Flight Center

Report Number: _____ **Report Date:** _____

Circle the appropriate rating for the following statements.

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

Overall, how would you rate the report?

Excellent	Fair
Very Good	Poor
Good	

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

How did you use the report? _____

How could we improve our report? _____

How would you identify yourself? (Select one)

Congressional Staff

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Government: _____ Federal: _____ State: _____ Local: _____

Media

Public Interest

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May we contact you about your comments?

Yes: _____

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Telephone: _____

Thank you for your cooperation in completing this survey.

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