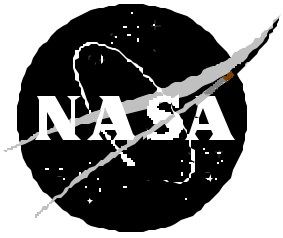
IG-99-047

AUDIT REPORT

SAFETY CONSIDERATIONS AT GODDARD SPACE FLIGHT CENTER

September 22, 1999



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Acronyms

ASI	Agency Safety Initiative
OSHA	Occupational Safety and Health Administration
SHEC	Safety, Health and Environmental Council
VPP	Voluntary Protection Program

W September 22, 1999

TO: Q/Associate Administrator for Safety and Mission Assurance
Y/Associate Administrator for Earth Science
100/Director, Goddard Space Flight Center

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on the Audit of Safety Considerations at Goddard Space Flight Center
Assignment Number A9900300
Report Number IG-99-047

The subject final report is provided for your information and use. Please refer to the Executive Summary for the overall audit results. Our evaluation of your response is incorporated into the body of the report. The recommendations will remain open for reporting purposes until corrective action is 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. Daniel Samoviski, Audit Program Director for Earth and Space Science Audits, at (301) 286-0497, or Mr. Karl Allen, Auditor-in-Charge, at (202) 358-2595. We appreciate the courtesies extended to the audit staff. The report distribution is in Appendix I.

[original signed by]

Russell A. Rau

Enclosure

cc:
B/Chief Financial Officer
B/Comptroller
BF/Director, Financial Management Division
G/General Counsel
JM/Director, Management Assessment Division

Contents

NASA Office of Inspector General

IG-99-047 **September 22, 1999**
A9900300

Safety Considerations at Goddard Space Flight Center

Executive Summary

Background. 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 ASI strongly encourages each NASA Center to be certified under the Department of Labor's Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP), which is designed to promote strong safety and health management.

Objectives. The overall objective of the audit was to evaluate management of NASA's safety program. Specifically, we assessed:

- the effectiveness of the various safety-program reviews,
- measures taken to correct deficiencies identified in safety reviews and mishaps, and
- procedures for ensuring safety under NASA contracts.

During the audit, we identified issues that could affect the safety of Goddard Space Flight Center (Goddard) employees. We believe that these issues require immediate management attention. Additional details on the scope and methodology are in Appendix A.

Results of Audit. Goddard is taking action to improve safety. The Center is making plans to implement the requirements of the ASI and to achieve VPP certification from OSHA by January 2001. The Center has also restructured the Goddard Safety, Health, and Environmental Council (SHEC), making the Goddard Center Director chair to ensure management's commitment to safety. However, we identified issues that could affect Goddard's overall safety and preparation for VPP certification.

- Goddard's various safety offices are not consolidated into one organization with a full-time director.
- 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.
- Contractor's safety records were not evaluated prior to contract award, as required by the NASA Safety Manual.

We plan to evaluate these areas in greater detail from a NASA-wide standpoint in future audits. However, Goddard management should consider these issues now as it works to improve Goddard safety and prepare for VPP certification.

Recommendations. We recommend that the Director, Goddard Space Flight Center:

- Evaluate the effectiveness of the Ongoing Safety Initiatives.
- Ensure that all mishaps, (including close calls) are reported accurately and in a timely manner and that the root causes are identified.
- Establish procedures for reviewing contractor safety records before contract award.

Management's Response. Management concurred with each recommendation. The complete text of the response is in Appendix H. We consider management's comments responsive.

Introduction

The ASI has four primary areas of emphasis regarding safety:

- Management commitment and employee involvement (clearly documented safety policy and procedures, employee accountability for safety as part of each position description, and line management responsibility for safety).
- Hazard analysis (report all mishaps and close calls and analyze them in a timely manner).
- Hazard controls (perform facility inspections and equipment maintenance and adequate Center emergency preparedness in the case of a disaster such as a hurricane).
- Training.

The ASI prioritizes the order of protection to (1) the general public, (2) astronauts and pilots, (3) employees on the ground, and (4) equipment and property. The ASI strongly encourages each NASA Center to be VPP certified by OSHA. OSHA's VPP is designed to promote safety and health management by having management (in this case, the NASA Centers) work with OSHA to establish a strong safety and health program:

- Management agrees to meet OSHA-established criteria for safety and health.
- Employees agree to work with management to assure safety.
- OSHA performs an initial, thorough inspection to ensure the Agency meets its criteria, then publicly recognizes the Agency for its exemplary safety program and waives all scheduled safety inspections.
- OSHA reinspects once every 3 years to ensure continued compliance.

To date, only the Langley Research Center (Langley) and the Johnson Space Center (Johnson) are VPP certified.

NASA has incorporated key parts of the E.I. duPont de Nemours and Company (DuPont) safety philosophy (see Appendix B) into the ASI. The NASA Administrator has cited DuPont as the current world leader in safety and has used DuPont's safety program as a benchmark for the Agency. NASA personnel have attended training and lectures provided by DuPont.

Goddard is implementing the ASI through the Goddard Safety Initiative.[1] As part of the Goddard Safety Initiative, management drafted a new charter for the Goddard SHEC in December 1998 and made the Center Director chair of the council. The general function of the SHEC is to establish safety policy, provide direction for safety program implementation, and generally manage the Goddard safety program. Goddard has drafted a revised Goddard Safety and Health policy to include the ASI requirements, developed a detailed work schedule for implementing the ASI requirements, and started a VPP certification project with the intent of being VPP certified by

[1] Goddard has named its efforts in implementing the ASI, the Goddard Safety Initiative. The Goddard Safety Initiative has the same requirements as the ASI.

January 2001.

Findings and Recommendations

Finding A. Goddard Safety Organizational Structure

The Goddard safety organization has neither direct lines of authority and reporting between the various safety organizations nor a full-time safety director. Five organizations within Goddard are responsible for separate elements of Goddard's safety and report to separate directorates; there is no overall, accountable organization (see Appendix C). This diverse safety organizational structure resulted from establishing safety functions within the various Goddard directorates rather than making them accountable to a single organization. As a result, the current safety management structure may hinder Goddard's effort to become VPP certified and could create risks due to unclear safety responsibilities.

Clear Organizational Structure is Essential

A clear, strong organizational structure is critical for achieving VPP certification. Among the criteria that OSHA includes in determining VPP eligibility is "clearly assigned safety and health responsibilities with documentation of accountability from top management to line supervisors." In October 1998, the OSHA Regional Administrator approved VPP certification for Langley, citing the impressive quality of Langley's safety and health program. OSHA cited Langley as having an effective, well-developed, detailed, written, safety program; clearly evident top-management leadership; and proper authority established and communicated to all line managers and employees so that assigned safety responsibilities are met. Langley's Director of Safety stated that Langley's centralized safety organizational structure was key to achieving VPP certification.

In addition, the General Accounting Office's Standards for Internal Control in the Federal Government dated May 1999 states:

> A positive control environment is the foundation for all other standards. . . . [A] factor affecting the environment is the agency's organizational structure. It provides management's framework for planning, directing, and controlling operations to achieve agency objectives. Good internal control requires that the agency's organizational structure clearly define key areas of authority and responsibility and establishes appropriate lines of reporting.

Prior Reviews Identified Same Condition

NASA's Office of Safety and Mission Assurance was aware of Goddard's noncentralized safety organization. On August 10, 1998, the Office of Safety and Mission Assurance identified the condition during a Process Verification review and reported to the Goddard Center Director that Goddard:

- had fragmented and distributed its safety function to various organizations throughout the Center;

- had no central process that defined, documented, and implemented a centralized safety management program across the Center;
- had no documentation to define the roles and responsibilities of the various safety entities; and
- made communicating difficult as a result of the diversity of the Goddard safety functions.

The NASA Office of Safety and Mission Assurance recommended that Goddard establish a method for defining and managing the various safety functions throughout the Center and develop a process for reporting and sharing safety issues. Goddard has not acted on those recommendations. However, Goddard now has the opportunity to correct those problems through the Goddard Safety Initiative and the rechartered SHEC.

Goddard's Safety Management

The Goddard Director of Flight Assurance, who is the focal point for the Goddard safety program, stated that the safety management structure is not ideal, but believes that the rechartered SHEC will alleviate the problem. Goddard management officials told us that because the Center Director chairs the SHEC and membership consists of top-level directors and safety managers, the council would achieve the management structure necessary for improved safety and VPP certification. Although the rechartered SHEC will help to ensure top-management commitment to safety, the charter for the SHEC is in draft and requires membership of only appointees of the various Goddard Directorates rather than the Directors. Therefore, a centralized safety organization will further strengthen Goddard's safety. Langley has a steering committee similar to Goddard's SHEC, in addition to its regular safety office, both of which contributed to the success of Langley's safety program.

Noncentralized Safety Organization Can Contribute to Mishaps

Goddard's current safety organization structure can create safety risks due to unclear safety responsibilities as illustrated in August 1998. A fire started in a temporary compressor shed and spread to Building 4 at Goddard's Greenbelt facility. The fire cost NASA $480,000 in damages. The resulting mishap investigation report stated that the underlying causes of the mishap were due to organizational deficiencies:

- The Goddard Pressure Vessel Recertification Program did not include the compressor that caught fire.
- The fire door between the two structures was improperly left open.
- Goddard facility safety practices did not include inspection of structures such as the compressor shed.
- Facility configuration management did not document the existence of the compressor shed in site plans.

The noted organizational deficiencies affected three safety organizations and three Directorates within Goddard, making it more difficult to control such hazards and to implement corrective actions. A

centralized safety organization would help alleviate those types of deficiencies because responsibility for each area of deficiency would fall under the same organization.

NASA's VPP-Certified Centers Use a Centralized Safety Organization

Langley and Johnson, the only NASA Centers with VPP certification, have already instituted a centralized safety function. At Langley, all safety functions fall under one organization, and that organization has the authority to stop work on any practice that it deems unsafe. Likewise, at Johnson, all occupational safety, including systems safety, falls under one organization. In addition, according to the Johnson Safety Officer, all managers and supervisors at Johnson must abate and control hazards in the facilities where employees work. Of the nine NASA Centers and Headquarters, Johnson and Langley have had the two lowest rates of lost work time due to injury/illness from fiscal year 1992 through June 1999.

Benefits of a Centralized Safety Organization

A centralized safety organization would improve Goddard's safety.

- **Full-Time Safety Director.** The Goddard Director of Mission Assurance is unofficially acting as the focal point for Goddard safety as there is no full-time Director of safety. A centralized organizational structure with a dedicated full-time director would improve safety

- **Clarity of Safety Responsibilities.** A centralized safety organization would ensure that only one office is accountable for safety policy. Currently, some of the safety responsibilities at Goddard are unclear. For example, if a spacecraft is being tested in the Goddard Mechanical Systems Center,[2] five organizations are responsible for safety. Without adequate communication and a clear line of authority, each organization could inappropriately rely on another to ensure safety thereby creating a risk as evidenced in the August 1998 fire previously discussed.

- **Independence.** A centralized management structure will help ensure that each of the five safety offices (listed in Appendix C) are independent of the Directorates to which they now report. For example, if the Wallops Safety Director [3] had to make a critical decision (such as the cancellation of a launch) due to a safety concern, his decision would be more difficult because he reports to the Office of Suborbital Projects, whose primary objective is to launch payloads. However, if the Wallops Safety Director reported to an independent safety director, with the same level of

[2] The Goddard Mechanical Systems Center is located at the conflux of Buildings 7, 10, 15, and 29, which are all connected to the Mechanical Systems Center. The center is an integration facility used in testing spacecraft and payloads prior to launch. It contains many pieces of space hardware, pressure vessels, and heavy equipment such as cranes, thermal vacuum chambers, vibration chambers, shakers, clean rooms, and a multi-use area. Five organizations are responsible for safety in the Mechanical Systems Center. Those offices are the: Safety, Environmental and Security Office; Office of Systems Reliability and Safety; Office of Applied Engineering and Technology; the Building Operations Manager; and the Mechanical Systems Center support contractor–NSI Technologies.

[3] The Wallops Flight Facility is part of the Goddard Space Flight Center.

seniority as the Director of Suborbital Projects, critical decisions and subsequent corrective actions may more likely be implemented.

- **ASI Implementation and VPP Certification.** A lack of a clear safety organizational structure could hinder NASA's efforts to implement the ASI and to obtain OSHA VPP certification. Both initiatives rely on full employee commitment, which would be aided by a management structure with clear lines of authority.

- **Control of Funding.** A centralized safety management structure would also create a single, independent office for establishing a budget and controlling funds thereby ensuring that the safety function receives necessary resources.

Conclusion

When NASA reaches its goal of full implementation of the ASI, each employee will be trained in and responsible for safety. As a step toward that goal, Goddard must have a safety organization structure with clear lines of authority and reporting to help achieve its goal of improving safety and training Goddard personnel on safety awareness.

Recommendations, Management's Response, and Evaluation of Response

The Goddard Center Director should:

1. **Evaluate the effectiveness of the current safety initiative implementation activities, to include considering future organizational structures or changes.**

Management's Response. Concur. Goddard will periodically assess progress in achieving the safety initiative objectives. Center evaluations will be ongoing and will consider possible organizational changes that would improve achievement of the safety initiative's goals and objectives. Goddard will evaluate its progress at the end of each of the first three quarters of fiscal year 2000 and will provide status reports to the Office of Inspector General. The complete text of the comments is in Appendix H.

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

2. **Finalize the Goddard SHEC charter, and ensure that the membership includes the Director of each Directorate rather than appointees.**

Management's Response. Concur. The Goddard SHEC has been restructured. The Center Director is the SHEC chairman, and the Directors of each Goddard directorate will be permanent members. The complete text of the comments is in Appendix H.

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

Finding B. Mishap Reporting and Investigation

Goddard's mishap reporting process needs management attention: (1) close calls are not reported, (2) corrective actions were not always effective and timely, (3) some mishap reports were not filed and contained incomplete information, and (4) pertinent information was not entered into the mishap reporting system. These weaknesses were due to the lack of clear policy for mishap and close-call reporting, inadequate control over mishap report filing procedures, and the lack of commitment toward safety by some Goddard managers. As a result, the potential exists for repeat mishaps, and a baseline of mishap data for use in developing performance metrics cannot be established.

Mishap Reporting and Investigation is a Major Element of the Safety Program

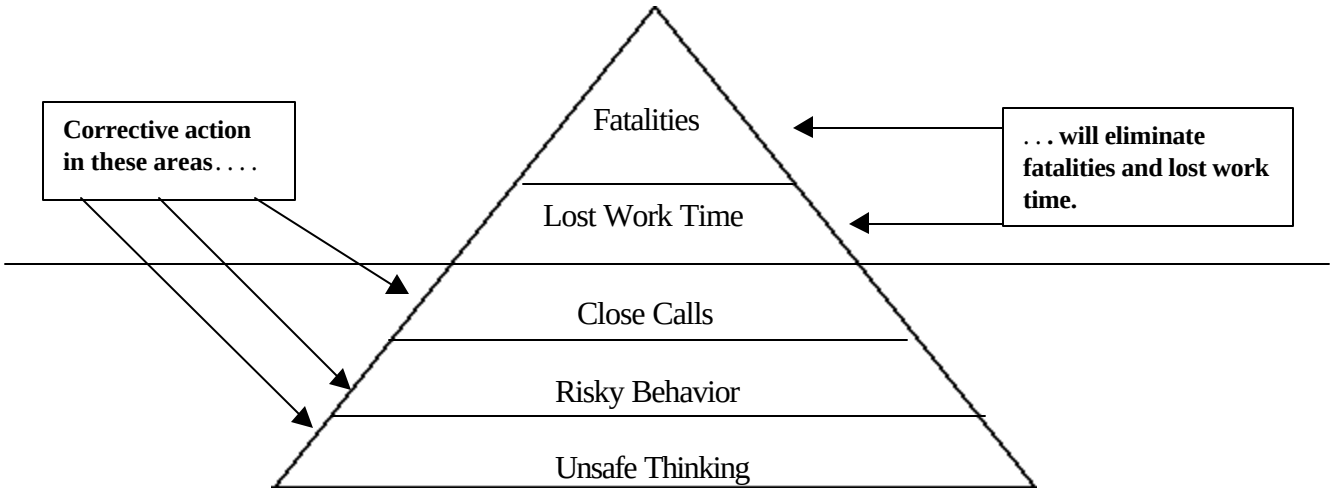
One of the OSHA VPP elements is accident reporting and investigation. Also, NASA Policy Directive 8621.1G,"NASA Mishap Reporting and Investigation Policy," states that mishaps must be reported, investigated, and documented. The Directive defines a mishap as: "Any unplanned occurrence or event resulting from any NASA operation or NASA equipment anomoly, 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.[4]

DuPont emphasizes the importance of reporting, investigating, and correcting all close calls. A recent article in the DuPont Executive Safety News stated that incident investigation should uncover the cause of an accident and prevent similar accidents from occurring. The goal is to concentrate on potential problems instead of consequences. By correcting close calls, risky behavior and unsafe thinking, management can prevent lost work time and serious injuries as depicted in the following figure:

[4] NASA Policy Directive 8621.1G, section 2 (b.)(1), defines the various mishaps, other than close calls, 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.

NASA Procedures and Guideline 8621, "Mishap Reporting, Investigating, and Recordkeeping," states that the primary purpose of a mishap investigation and subsequent pursuit of corrective action is to prevent similar occurances and thus improve the safety of NASA operations.



DuPont's Mishap Philosophy

Reporting Mishaps Categorized as Close Calls

Goddard does not report and treat close calls as mishaps. Some Goddard safety personnel told us that close calls occur often in a research and development environment such as that at Goddard. However, since close calls are not reported, we could not determine the number of close calls that occurred at Goddard. Our review of the 1998 first-aid-files showed six close calls that could have resulted in serious injury. However, for the six occurrences, management did not file mishap reports or perform necessary investigative work to identify the root cause in order to prevent a reoccurrence of the mishap. Details on the six close calls are in Appendix D.

Mishap Corrective Actions

Goddard management did not take adequate corrective action for 9 (7 percent) of 122 mishap reports examined. Management took no action for seven of the nine mishaps, and took corrective action for two but did not address the root cause of the problem. Details are in Appendix E.

Mishap Reporting and Filing

The Goddard Safety, Environmental and Security office needs to improve its mishap filing procedures. The Office did not enter incidents of first-aid treatment into the Incident Reporting

Information System[5] and did not file mishap reports for 22 of 36 mishaps that occurred during fiscal year 1997. Other mishap reports either were not processed in a timely manner or contained incomplete information. Details are in Appendix F.

Management Emphasis Regarding Mishaps

Goddard did not emphasize reporting of close-call mishaps. Goddard safety personnel told us that unless a mishap resulted in missed time or property damage, no report is filed. Also, Goddard has no special procedures, policy, or programs (such as training, rewards, awareness, and metrics) for ensuring that all close calls are reported, analyzed, and corrected. Langley and Johnson, both VPP certified, have established procedures for reporting close calls. Langley provides each employee with a safety handbook that contains specific procedures for reporting close calls. Johnson developed a Web-accessible database of all reported close calls to emphasize to employees the importance of reporting close calls.

Goddard management has been lax in taking corrective actions. Several managers blamed the individual who suffered the mishap. Other managers made light of mishaps. For example, when one employee was injured as a result of falling in an icy parking lot, the employee's manager wrote on the mishap report "recommended training in arctic maneuvering, crampon and ice axe usage, and self defense." (See Appendix E.)

Finally, Goddard's Safety, Environmental and Security Office did not have adequate management controls in place to monitor the mishap reporting process to ensure that mishap reports were completed and processed within a reasonable time and that first-aid cases were properly reported and entered into the Incident Reporting Information System. Only one person was made responsible for entering this information into the Incident Reporting Information System, and only that person had access to the system. The General Accounting Office's Standards for Internal Control in the Federal Government, dated May 1999, states: "Internal control should generally be designed to assure that ongoing monitoring occurs in the course of normal operations."

Effects of Goddard's Mishap Reporting Procedures

Goddard is not effectively implementing a key procedure for improving safety by eliminating potential problems before they result in injury and property losses. Close calls and other mishaps that are not adequately addressed and quickly corrected have the potential to lead to a major accident.

Also, by not accurately reporting all close calls, mishaps, and first-aid cases in the Incident Reporting Information System, Goddard management is not able to establish a baseline of data for use in

[5] The Incident Reporting Information System is an electronic system that enables real-time reporting of mishaps and injuries and facilitates detailed mishap investigation and follow-up documentation. The system has a field for reporting first-aid cases to assist in proper trend analysis as required by the ASI. Information from the system is a valuable management tool used to report mishap information to NASA management and outside sources.

analyzing trends and developing metrics to measure its performance. DuPont safety representatives have told NASA that "if it can be measured, it can be improved."

Finally, mishap investigation is a key element in both the ASI and the VPP; therefore, the supporting records should be available and accurate. By correcting these deficiencies now, Goddard management will be better prepared for VPP certification as planned and will improve Goddard's overall safety.

Recommendations, Management's Response, and Evaluation of Response

The Goddard Center Director should:

3. **Emphasize the requirements in NASA Policy Directive 8621.1G, section 2 (b.)(1), for reporting mishaps, especially close calls; emphasize the identification of the root causes of all mishaps; and establish metrics to measure Goddard's performance in this area.**

Management's Response. Concur. Goddard is developing a guideline that will emphasize NASA Policy Directive 8621.1G, section 2 (b.)(1). The guideline will place emphasis on reporting close calls and identifying the root causes of mishaps. Goddard will also implement new ways to measure its performance in mishap reporting. The complete text of the comments is in Appendix H.

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

4. **Require all first-aid data to be entered into the Incident Reporting and Information System, and establish a procedure to review first-aid cases for certain trends and to determine whether the first-aid cases warrant the filing of a mishap report; require a periodic, second-party review to ensure that all mishap reports are complete and accurate and filed and closed out in a timely manner.**

Management's Response. Concur. Goddard is developing procedures to require all first-aid data to be input into the Incident Reporting Information System, to review first-aid cases for trends, and to determine which cases warrant filing a mishap report. The complete text of the comments is in Appendix H.

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

Finding C. Contractor Safety

Goddard does not evaluate contractors' safety records prior to contract award, as required by the NASA Safety Manual. Evaluations do not occur because NASA policy is not clear on how to complete the evaluations and because Goddard has no policy to address contractor safety. As a result, NASA and contractor employees will continue to be at risk. Also, Goddard's progress in obtaining VPP certification could be affected.

NASA, DuPont, and VPP Emphasize Contractor Safety

NASA Handbook 1700, "NASA Safety Policy and Requirements Document," June 1, 1993, section 202(c) states that NASA safety officials are responsible for reviewing prospective contractor's safety performance history during bid evaluation and source selection. Section 203(e) of the handbook further states: "Contractors shall be required to submit appropriate safety documentation during the procurement process to assist the source selection official in evaluating the loss prevention program of the contract bidders."

DuPont's Executive Safety News states:

> Our commitment to safety doesn't stop with our own employees. Any contractor who wishes to work with DuPont is expected to share our philosophy and our goal of total safety. Therefore, we work only with contractors who have demonstrated their ability to work safely.

Contractor safety is also a major part of OSHA's VPP certification process. One of the VPP elements is contractor selection and contractor safety. As part of the VPP certification process, OSHA reviews contractor operations to ensure that: contractors have a good attitude toward safety, major on-site contractors have an established safety and health program, and the Government monitors contractor's safety compliance. The Langley Safety Director stated that OSHA performs a rigorous review of contractor safety operations during the VPP on-site review process and that contractor participation is essential for successful VPP certification.

Goddard Contracts Reviewed

We judgmentally selected for review seven Goddard contracts that involved potentially hazardous work (construction, logistics support, warehousing, etc.). Each contract contained the required safety clause, and NASA required each contractor to supply a detailed safety plan after contract award. However, Goddard did not evaluate the contractor's safety records prior to contract award, and some contractors had prior OSHA safety violations:

- For the seven contracts, there was no evidence of an evaluation of a contractor's safety plan and safety record during the contract evaluation process as required by the NASA safety manual and as suggested by DuPont in its safety philosophy.

- Three (43 percent) of the 7 contractors had a total of 40 OSHA violations during the last 5 years.

- One contractor had eight serious injuries and five fatalities since 1990. That same contractor was involved in two mishaps at Goddard during the last 2 years. One mishap resulted in an injury to a Goddard employee.

For more details see Appendix G.

Policy Regarding Contractor Safety

NASA Handbook 1700 does not specify how NASA should evaluate a contractor's safety record. Furthermore, Goddard has no procurement policies or procedures that address contractor safety. Until NASA's recent emphasis on safety and VPP certification, safety was not a major concern when evaluating contracts. Goddard Safety and Procurement personnel told us that Goddard performs no review during the contract evaluation process of a prospective contractor's safety records or documented safety procedures. Experience and past performance are the main criteria that Goddard uses when evaluating prospective contractors.

In focusing more attention on safety, the Administrator and the NASA Office of Safety and Mission Assurance have questioned contractor safety. The Office of Safety and Mission Assurance drafted NASA Policy Guideline 8715, "NASA Safety Manual Procedures and Guidelines." Chapter 2 of the draft policy addresses safety with contractors:

> Contractors shall be required to submit appropriate safety documentation during the procurement process, e.g. corporate safety policies, implementation procedures, and draft program-planning documents. The source evaluation board and source selection official will use these documents in evaluating how well the contractor's policies and implementation procedures meet the intent of Federal safety requirements.

NASA Headquarters is working to revise the NASA Federal Acquisition Regulation Supplement to require more detailed safety evaluations of prospective contractors. In addition, both Goddard and Headquarters safety personnel have suggested tailoring contracts based on a contractor's safety record to include increased contractor safety surveillance procedures by NASA and award fees tied to safety.

Conclusion

NASA contractors represent 72 percent of the Goddard workforce. Goddard management needs to focus more attention on contractor safety to ensure that all personnel (that is, the public, astronauts, and ground workers) identified in the ASI are protected. Furthermore, contractor safety is one of the elements of the OSHA VPP program. If Goddard intends to meet its objective of

achieving VPP certification in less than 2 years, it needs to focus on contractor safety and take the necessary steps to ensure that contractor safety receives management commitment.

Recommendations, Management's Response, and Evaluation of Response

5. The Goddard Center Director should establish policy and procedures for reviewing and evaluating contractor safety records and safety plans, prior to contract award, and allow for the tailoring of the contract (for example, increased surveillance procedures, award fees tied to safety) based on the results of that review.

Management's Response. Concur. Goddard will take appropriate action upon issuance of the revised NASA Federal Acquisition Regulation Supplement requirements involving risk management. The revised supplement establishes policies and procedures that emphasize risk management, including safety, within the acquisition process. The complete text of the comments is in Appendix H.

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

Appendix A. Objectives, Scope, and Methodology

Objectives

The objectives of the survey were to assess:

- the effectiveness of the various safety program reviews,
- measures taken to correct deficiencies identified in safety reviews and mishaps, and
- compliance with procedures for ensuring safety under NASA contracts.

Scope and Methodology

We obtained an overall understanding of the NASA safety program and how it is administered at the headquarters and Center levels. We performed a limited review of the safety procedures at Goddard. Based on that review, we identified several issues we believe will benefit Goddard management as it implements the Goddard Safety Initiative and prepares for VPP certification.

During the audit, we:

- Identified and reviewed both NASA's and Goddard's policies and procedures regarding safety.
- Interviewed NASA's Office of Safety and Mission Assurance personnel in order to identify procedures for monitoring the safety activities of the Center Safety Offices.
- Reviewed the most recent administrative operating agreements and process verification reports and procedures for Goddard.
- Reviewed Goddard mishap reports for 1995 through January 1999. Goddard did not provide the 1997 records in time for us to perform a thorough examination, and management could locate mishap reports for only 14 of the 36 mishaps that occurred in fiscal year 1997.
- Tested selected information in NASA's Incident Reporting Information System by tracing it to source records at Goddard.
- Reviewed Goddard first-aid records for 1998.
- Interviewed personnel from Goddard's Safety, Environmental and Security Office; Office of Flight Assurance; Systems Reliability and Safety Office; Mechanical Systems Center; and Office of Management Operations.

Management Controls Reviewed

We reviewed controls at Headquarters and Goddard. The NASA Headquarters' Office of Safety and Mission Assurance overall management controls regarding safety policy and oversight include:

- extensive documentation that is easily retrievable; and
- a safety insight mechanism that facilitates conformance with ISO 9000 certification,[6] Government Performance and Results Act, and full cost management.

We reviewed Goddard's safety management organizational structure to ensure that it provides Goddard management with the overall framework for planning, directing, and controlling its operations to achieve objectives and that it establishes appropriate lines of reporting. We also reviewed Goddard's management controls over the reporting and processing of mishaps. We identified weaknesses as discussed in Findings A and B.

Audit Field Work

We conducted field work from January through June 1999, at Goddard and NASA Headquarters. The audit was performed in accordance with generally accepted government auditing standards.

[6] ISO is the "International Organization for Standardization," which is headquartered in Geneva, Switzerland. There are a number of ISO standards. The "9000 Series" deals with quality system standards. On November 13, 1996, the NASA Administrator required that the Agency be certified to ISO 9000 standards no later than September 30, 1999.

Appendix B. The DuPont Safety Philosophy

The DuPont Corporation, with about 84,000 employees worldwide has the lowest lost work time rate of any business or Federal agency. The success of DuPont in managing safety is a reflection of its 10-point safety philosophy:

The first and most basic safety principle at DuPont is that all injuries are preventable.

Management, from the top of the corporation to first-line supervisors, is responsible for preventing injuries. One of management's fundamental responsibilities is to lead the safety effort in a sustained and consistent way, establishing safety goals, demanding accountability for safety performance, and providing the resources to make the safety program work.

All operating exposures that could result in injuries or occupational illnesses can be controlled**.** No mater what the exposure, an effective safeguard can be provided. It is preferable, of course, to eliminate sources of danger, but when this is not reasonable or practical, supervision and the work groups involved must specify measures such as special training, safety devices, and protective equipment.

Safety is a condition of employment. Safety starts on the first day someone begins working for DuPont, and each employee is expected to be conscientious in assuming personal safety responsibility from that first day on the job.

Employees must be trained to work safely. Awareness for safety does not come naturally; we all need to be trained to work safely. Training must include both skills and motivation. Effective training programs to teach, motivate, and sustain safety knowledge are a key element in preventing all injuries and illnesses.

Management must audit performance in the workplace to assess safety program success. Comprehensive inspections of both facilities and programs not only confirm their effectiveness in achieving the desired performance, but also detect specific problems and help to identify weaknesses in the safety effort.

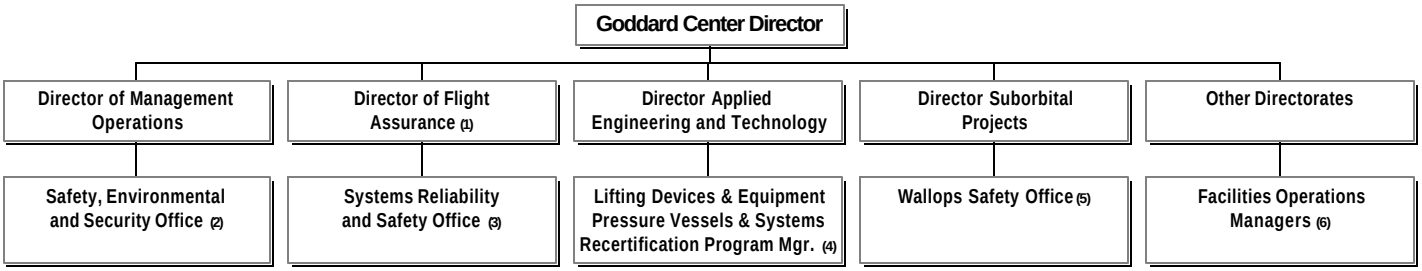
Deficiencies must be corrected promptly. Whenever a safety deficiency is found either by an audit or investigation or in the normal course of work - prompt action is required both to overcome the hazard and to reinforce the message that safety is a priority. DuPont believes that safety is part of every job.

Off-the-job safety is an important part of the overall safety effort. Employees should not "turn safety on" as they come to work and "turn it off" when they go home. Both the employee and the company become safer when the employee internalizes safety.

Recognize that safety is good business**.** Injury prevention is one part of creating competitive advantage. Injuries cost money, and their cost undermines competitiveness. Safety excellence is part of overall competitiveness and is, therefore, an integral part of all business activities.

People are the most critical element of the safety program. Intelligent, trained, and motivated employees are any company's greatest resource. They contribute to the overall success of DuPont by following procedures, participating actively in training, and identifying and alerting each other and management to potential hazards. By demonstrating a real concern for each employee, management helps establish a mutual respect, and the foundation is laid for a solid safety effort.

Appendix C. Goddard* Safety Management Organization Structure



*The Center consists of the primary facility in Greenbelt, Maryland, and the Wallops Flight Facility, near Chincoteague, Virginia. The Greenbelt facility has 50 buildings on 1,121 acres of land. The Wallops Facility has 84 major buildings, including aircraft hangars, and covers 6,200 acres. As of January 1999, Goddard employed more than 3,300 civil servants and 8,500 contractor employees. Goddard personnel encounter many potential hazards such as rocket launches, heavy lifting equipment, pressurized vessels, chemicals, and radioactive material and institutional safety hazards such as traffic and construction.

[1] NASA's Office of Safety and Mission Assurance designated the **Director of Flight Assurance** as the safety focal point for Goddard; however, there is no formal record of the designation.
[2] **The Safety, Environmental and Security Office** provides oversight for the safety of all buildings and grounds at Goddard Greenbelt.
[3] **The Systems Reliability and Safety Office** provides oversight for the safety of any payload developed at Goddard for a rocket or balloon or the Space Shuttle.
[4] **The Lifting Devices and Equipment and Pressure Vessel and System Program Manager** provides oversight for ensuring the safety of all lifting devices, cranes, forklifts, pressurized gas tanks, etc. at Goddard.
[5] **The Wallops Safety Office** provides oversight for all safety at Wallops including range and aviation safety and grounds and facilities.
[6] **Facilities Operations Managers** are appointed from each building at Goddard's Greenbelt facility and are responsible for monitoring the safety of his or her building.

Appendix D. Close Calls Not Reported as Mishaps

We reviewed the first-aid reports that were completed by the Goddard and Wallops medical units for 1998. The cases listed below were close calls and had the potential for major mishaps, but Goddard did not file a mishap report and implement corrective action.

Date	Injury/Circumstances	Audit Analysis
5/24/98	The valve popped off a nitrogen tank while it was being filled and liquid nitrogen splashed on the employee's arm. The employee felt a burning sensation, but no other injury was noted.	This incident could have resulted in serious burns and at least a Type C mishap.*
8/7/98	An employee was moving a 500-pound lift when the lift fell back on his chest and made him fall to his knees. The incident did not result in loss of work time or serious injury.	This incident could have resulted in a fatality - a Type A mishap.
10/7/98	Employee was working on a woodchopping machine when a piece of wood flew into his eyes, lacerating the man's eyelids.	The incident could have easily damaged the person's eyes causing permanent disability – a Type B mishap.
10/20/98	A truck lift gate holding two 55-gallon drums of liquid waste pinned down an employee's foot. The patient was diabetic and felt very weak after the incident.	The incident could have resulted in injury and hospitalization– a Type B mishap.
12/1/98	A hydraulic accumulator fell on an employee's hands and knocked him back injuring the employee's elbows.	This incident could have resulted in injury and hospitalization– a Type B mishap.

* NASA Policy Directive 8621.1G, section 2 (b.)(1), defines 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.

Appendix D

Date	Injury/Circumstances	Audit Analysis
12/21/98	While moving items on the moving dock, an employee caught his leg on a piece of metal protruding from a pallet and suffered a 3-inch laceration on his thigh.	Incident could have resulted in a more serious injury and hospitalization – a Type B mishap.

Appendix E. Inadequate Mishap Corrective Actions

Report No.	Mishap Date	Mishap	Auditor's Analysis
95-0156	9/7/95	Employee tripped over a lawn net and hurt his knee and ankle.	The employee's manager wrote on the mishap report that the mishap was the employee's fault and that his weight was a contributing factor to the severity of the injury. The mishap report was then changed to eliminate the part about the employee's weight.
NAGG-0006-96	2/16/96	Employee slipped on icy sidewalk and hurt his elbow.	The management action plan on the mishap report stated that the employee will be offered training in "Arctic maneuvering, crampon and ice axe usage, and self-defense."
96-0072	5/21/96	Employee sprained lower back while closing a rusty shut-off valve with a stick.	The mishap report action plan stated that the staff discussed safety of everyday tasks at a staff meeting. However, Goddard took no action to fix the rusty shut-off valve.
96-0108	9/3/96	A crane struck a freon valve and released 5,000 pounds of freon.	A mishap report was not filed or entered into the Incident Reporting Information System. Only an e-mail from the Goddard Safety, Environmental and Security office indicates that corrective action was taken. However, the lack of a report provides no assurance that the mishap was reviewed by an independent source or that the mishap was thoroughly investigated or corrective action taken.
GSFC-98-3	10/29/97	Employee reached up with his hand to stop a shed he was moving with a crane and suffered a hernia.	According to the mishap report, the employee was only told to be more careful next time. The corrective action plan did not address the fact that a storage shed almost rammed into the back of the building.

Appendix E

Report No.	Mishap Date	Mishap	Auditor's Analysis
98-8	2/2/98	Employee hurt her hand when a door swung back and hit her.	According to the mishap report, the employee's manager cautioned the employee on "proper door opening procedures." Corrective action did not consider the safety of the door and why it swung back so hard.
98-11	2/14/98	Fire in the elevator machine room in Building 13	No mishap report was filed. This serious mishap has the potential for disaster. The lack of a report provides no assurance that the mishap was reviewed by an independent source or that the mishap was thoroughly investigated or corrective action taken.
98-23	6/3/98	Employee got something in his eye while removing a hood from a fan.	The employee's supervisor stated in the mishap report that no action was taken because the mishap was accidental.
98-25	7/7/98	Three battery packs shifted during transit and cracked. Shifting took place because the driver made an abrupt stop to avoid a traffic accident. When the batteries were unloaded at Goddard they leaked sulfuric acid.	Management took no action to assess the driving procedures of the truck drivers who were subcontractors nor to determine why batteries were not properly stowed in the truck.

Appendix F. Mishap Report Filing Issues

We examined 105 mishap reports and identified 4 filing issues as follows:

1. **Missing Reports**. Mishap reports were not available for 22 of the 36 mishaps that occurred during fiscal year 1997. The mishaps were entered into the Incident Reporting Information System, but management could not locate the actual mishap reports that document the nature of the incidents and the corrective actions taken.

2. **Failure to Identify Mishap Potential**. The mishap report was incomplete in that the level of potential of the mishap (item number 7 of the NASA Mishap Report) was not indicated for 12 mishap reports. This information is important in that it allows management and other users of mishap information to assess the seriousness of the mishap.

3. **Late Filing.** The mishap report was not filed in a timely manner for seven mishaps. There was an unreasonable time lag between the date of the mishap and the date the mishap report was filed (from 1 to 5 months), or between the date of the mishap and the date when the final action taken in regard to the mishap was approved for closure by the Goddard Safety and Environmental Branch (from 7 to 15 months). Reporting offices are required to submit the mishap report within 24 hours of the actual mishap. Ensuring that mishaps are reported and corrected quickly is an essential safety procedure.

4. **Missing Data**. Various other information was missing from the mishap report. This attribute was identified in five mishap reports.

Appendix G. Detailed Review of Selected Contracts

We reviewed seven judgmentally selected Goddard contracts. Each contract contained the safety clause required by the NASA Federal Acquisition Regulation Supplement. For each contract shown below, the contractor was required to submit its company's detailed safety plan and policy, and most of those documents were available in the contract file. However, none of the contract files contained evidence of a proactive review of the contractor's safety information prior to contract award. Three (47 percent) of the seven contractors had prior OSHA violations. One of the contractors has had five fatalities in less than 10 years.

Contractor/Contract #	Details of Contract	Auditor Observation
Occu Health, Inc. NAS5 98158	Health services at NASA Headquarters and Goddard Contract value: $6.5 million	There was no safety plan in the contract file.
Cortez III Service Corp. NAS5 32889	Goddard Logistics Support Contract value: $98 million	N/A*
Grayhound Trash Removal NAS5 32781	Goddard Trash Removal Contract value: $905,782	N/A
Raytheon Service Company NAS5 32700	Logistic Support for the Goddard Mission Operations and Data Systems Directorate Contract value: $98.8 million	Raytheon was cited for five OSHA violations in 1996 (three were serious) for which it was fined more than $7,000 in total.
Camco Construction Co., Inc. NAS5 97148	Construction of an addition to Building 20 at Goddard – Greenbelt Contract value: $633,568	N/A

*Not Applicable.

Contractor/Contract #	Details of Contract	Auditor Observation
Superior Management Services Inc. NAS5 35038	Construction of an addition to Building 9 at Goddard – Greenbelt Contract value: $483,067	Contractor had 18 serious OSHA violations in 1998.
Brown & Root Services Corp NAS5 35157	Minor construction, modifications, and rehab services for Goddard Contract value: $100,005,955	In the last 5 years, the company has had 17 serious OSHA violations. In the last 10 years, the company has reported 11 accidents. Since September 1990, the company has had eight serious injuries and five fatalities. In 1998, the company was involved in two mishaps at Goddard: • A company employee was pulling cable through a raised computer floor in Building 23 and removed a floor tile to facilitate the procedure. The contractor employee then walked away from the work site, and a NASA employee stepped into the hole and twisted and sprained her ankle. • A generator caught on fire as a result of a short circuit that completely destroyed many components of the generator. The contractor tried to put the fire out (to no avail) instead of immediately calling the fire department, which eventually put out the fire.

Appendix H. Management's Response

National Aeronautics and
Space Administration
Goddard Space Flight Center
Greenbelt, MD 20771

Reply to Attn of: 201

AUG 27 1999

TO: NASA Headquarters
Attn: W/Assistant Inspector General for Auditing

FROM: 100/Director

SUBJECT: GSFC Response to Office of Inspector General (OIG) Draft Report on Audit of Safety Considerations at Goddard Space Flight Center, Assignment A9900300, July 14, 1999

Thank you for providing us an assessment of the Safety Program at GSFC. We appreciate the opportunity to respond to the subject draft report. We would also like to thank Dan Samoviski and Kevin Carson of your staff for their constructive efforts in resolving the issues we had with Recommendation 1 and in reaching the mutually acceptable wording.

Goddard's most important core value is safety – safety of the public, safety of the astronauts and pilots, safety of the NASA workforce, and safety of high-value equipment and property. Goddard management is deeply committed to implementing the Agency and Center Safety Initiative and recognizes the need for a central focus in order to achieve the Center's enhanced safety management goals and objectives. To that end, the newly-restructured Safety, Health, and Environmental Council consolidates and elevates leadership of safety at GSFC. The enclosure discusses the goals of this Council and the cultural change that we are committed to achieving through the Goddard Safety Initiative.

We concur with the five recommendations in the draft report. The enclosure details our planned actions and also addresses concerns we have with some statements in the report.

Please contact me or Ms. JoAnn Clark, GSFC Audit Liaison Officer, if you need further information.

A.V. Diaz

Enclosure

cc:
HQ/HK/Mr. J. Horvath
HQ/JM/Ms. M. Myles
HQ/Q/Mr. F. Gregory
HQ/Q/Mr. D. Moore
HQ/QS/Mr. J. Lemke
HQ/QS/Mr. J. Lloyd
HQ/Y/Dr. G. Asrar
HQ/Y/Mr. M. Luther
HQ/YB/Ms. D. Santa

Appendix H

GODDARD SPACE FLIGHT CENTER (GSFC)

RESPONSE TO

OFFICE OF INSPECTOR GENERAL (OIG)

DRAFT REPORT A9900300

DATED JULY 14, 1999

ON AUDIT OF

SAFETY CONSIDERATIONS AT GSFC

AUG 27 1999

DATE_____

ENCLOSURE

OIG Recommendation 1: (S0)

The Goddard Center Director should evaluate the effectiveness of the current Safety Initiative implementation activities, to include considering future organizational structures or changes.

GSFC Response to Recommendation 1: (S0) CONCUR

Goddard is deeply committed to implementing the Agency and Center Safety Initiative. Goddard management has recognized for some time the need for and value of a central focus in order to achieve the Center's enhanced safety management goals and objectives. To that end, the Center has taken specific actions to consolidate and elevate leadership of safety through the formation of a high-level Safety, Health, and Environmental Council (SHEC) and through complementing management processes. The Center has chosen this approach rather than an approach that reorganizes safety operations into a single organization. The Center believes that there continues to be considerable benefit and strengths derived from retaining safety specialists within their operational organizations and environments rather than losing these advantages by segregating safety specialists and staff into a separate, centralized organization. The functional and program directors in the four major safety entities (reference the OIG draft report Appendix C) have distinctly different safety issues and safety management requirements. While these entities are separate, the SHEC consolidates Goddard's management of safety and elevates the level of attention.

The Center Director chairs the SHEC and as such functions as the overall Director of Safety at Goddard. The SHEC includes all Directors-of as permanent members. All other managers and employees at Goddard have individual responsibility for safety in the workplace and in mission accomplishment. The SHEC's leadership is put into motion on a working level through each Director-of and is concentrated on particularly by the Directors of Codes 200, 300, 500, and 800, where the critical institutional, flight, engineering, and Wallops safety operations are. The SHEC provides executive oversight; establishes policy and guidance; directs safety program implementation; assures safety office coordination: assures balance, objectivity, and impartiality in cross-cutting safety issues; and is a forum for safety and risk management decisions. The SHEC Charter and ISO 9001 documentation delineate lines of authority and reporting between the various safety entities. The Center has also established other employee and contractor forums to support the Safety Initiative.

Goddard's successful implementation of the Safety Initiative depends upon achieving a major cultural transformation. This transformation is to incorporate the Dupont Corporation's safety philosophy (reference the OIG draft report Appendix B) as an inherent operating mode at Goddard. This means assuring that every employee at Goddard is committed to taking responsibility for personal safety, as well as safety in the workplace and in accomplishing missions. Center management is committed to achieving this objective.

Appendix H

At least until a cultural transformation of individual safety responsibility and shared management accountability is firmly implanted across the Center, the Center believes that a centralized organization structure is not the desired operational structure to achieve long-term safety program objectives. However, we will periodically assess progress in achieving the Safety Initiative objectives. Center evaluations will be ongoing activities, and we are committed to continuous improvement. These evaluations will consider possible organizational changes that would improve our achievement of Safety Initiative goals and objectives. We will evaluate our progress at the end of each of the first three quarters of Fiscal Year 2000 and will provide status reports to the OIG.

ACTION OFFICIAL:	Alda Simpson/GSFC/700
CLOSURE OFFICIAL:	Al Diaz/GSFC/100
STATUS REPORT DATES:	January 31, April 30, and July 31, 2000

OIG Recommendation 2: ($0)

The Goddard Center Director should finalize the Goddard SHEC charter and ensure that the membership includes the Director of each Directorate rather than appointees.

GSFC Response to Recommendation 2: ($0) CONCUR

The Goddard SHEC charter has been restructured, and a draft is currently being reviewed by the SHEC members. The Center Director is the SHEC chairman and all Directors-of are permanent members. Once all comments are received and incorporated as appropriate, the charter will be finalized.

ACTION OFFICIAL:	Alda Simpson/GSFC/700
CLOSURE OFFICIAL:	Al Diaz/GSFC/100
PROJECTED COMPLETION DATE:	October 31, 1999

OIG Recommendation 3: ($0)

The Goddard Center Director should emphasize the requirements in NASA Policy Directive (NPD) 8621.1G, section 2(b)(1), for reporting mishaps especially close calls, emphasize the identification of the root causes of all mishaps, and establish metrics to measure Goddard's performance in this area.

GSFC Response to Recommendation 3: ($0) CONCUR

GSFC is developing a Goddard Procedures and Guidelines (GPG) that will emphasize the requirements of NPD 8621.1G, especially identifying what roles employees, supervisors, and management have in reporting and preventing close calls and mishaps. It will place emphasis on determining the root causes of incidents and will emphasize the fact that everyone has a

Appendix H

responsibility in preventing mishaps. We will evaluate metrics that are presently in place and will implement new ways to measure our performance, including measuring close calls. We will also explore various ways to report this data and make it available to all employees, such as via the Web. This effort is part of the Goddard Safety Initiative.

ACTION OFFICIALS:	Lisa Cutler/GSFC/205.2
	Jay Garvin/GSFC/302
CLOSURE OFFICIAL:	Mike McNeill/GSFC/205.2
CONCURRING OFFICIAL:	Alda Simpson/GSFC/700
PROJECTED COMPLETION DATE:	February 29. 2000

OIG Recommendation 4: ($0)

The Goddard Center Director should require all first-aid data to be entered into the Incident Reporting and Information System (IRIS), and establish a procedure to review first-aid cases for certain trends and to determine whether the first-aid cases warrant the filing of a mishap report; require a periodic, second-party review to ensure that all mishap reports are complete and accurate and filed and closed out in a timely manner.

GSFC Response to Recommendation 4: ($0) CONCUR

GSFC is developing procedures to require all first-aid data be input into the IRIS and to review first-aid cases for trends and to determine which cases warrant the filing of a mishap report. We will define which incidents require further mishap reporting. A procedure will be implemented to review all mishap reports for completeness, timeliness, and accuracy. Periodically, we will review this data to determine trends and develop metrics. We are reviewing procedures and metrics at other NASA Centers for reporting and measuring first-aid and mishap data. Once defined, we will consider including these procedures and metrics in the GPG discussed in Recommendation 3 above.

ACTION OFFICIALS:	Lisa Cutler/GSFC/205.2
CLOSURE OFFICIAL:	Mike McNeill/GSFC/205.2
CONCURRING OFFICIAL:	Pradeep Sinha/GSFC/205
PROJECTED COMPLETION DATE:	February 29. 2000

OIG Recommendation 5: ($0)

The Goddard Center Director should establish policy and procedures for reviewing and evaluating contractor safety records and safety plans, prior to contract award, and allow for the tailoring of the contract (for example, increased surveillance procedures, award fees tied to safety) based on the results of that review.

GSFC Response to Recommendation 5: ($0) CONCUR

GSFC will take the appropriate action upon issuance of the revised NASA Federal Acquisition Regulation (FAR) Supplement (NFS) regulations involving Risk Management that have been developed by the NASA Headquarters Office of Procurement (Code H). The revised regulations establish policy and procedures that emphasize consideration of risk management, including safety, security, health, export control, and damage to the environment within the acquisition process. They also address acquisition planning, selecting sources, choosing contract types, structuring award fee incentives, administering contracts, and conducting contract surveillance. The NFS revisions have been submitted to the Federal Register as a proposed rule and were posted on the Office of Management and Budget (OMB) Federal Register Website for comments on July 20, 1999. The revised NFS regulations will apply NASA-wide.

ACTION OFFICIAL:	Kent Cockerham/GSFC/200
CLOSURE OFFICIAL:	Mike Ladomirak/GSFC/200
PROJECTED COMPLETION DATE:	October 31, 1999

We offer the following comments and clarifications to improve the accuracy and balance of the OIG draft report.

1. OIG draft page i, "Background," and page 1, "Introduction," 2nd paragraph

The OIG draft report states that "a key element of the Agency Safety Initiative (ASI) is for each NASA Center to be certified under the Department of Labor's Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP)." This statement is not accurate. The ASI strongly encourages the use of safety management systems such as OSHA's VPP; however, VPP certification is not a required part of the ASI. The NASA Centers are electing to become VPP certified by OSHA.

2. OIG draft page 2, "Finding A-Goddard Safety Organizational Structure"

The OIG draft report states that Goddard's current safety management structure may hinder our effort to become VPP certified. This statement is not accurate. The requirements of VPP are focused on organizational effectiveness and safety outcomes, not structure. If an organizational structure is effective and goals are met, there is no impediment to VPP certification.

3. OIG draft page 3, "Noncentralized Safety Organization Can Contribute to Mishaps"

This conclusion is not fully substantiated in the OIG draft report. The four deficiencies noted in this finding could have occurred whether or not the safety organizations were centralized. The OIG draft report does not explain how a centralized safety organization would have prevented these occurrences.

4. OIG draft page 5, "Control of Funding"

The OIG draft report states that a centralized safety management structure would create a single, independent office for establishing a budget and controlling funds thereby ensuring that the safety function receives necessary resources. This statement is not fully substantiated in the OIG draft report. In a decentralized safety structure, additional funds are actually available if needed, at the discretion of the managing Director-of.

5. OIG draft page 10, "Finding C-Contractor Safety"

The OIG draft report references the NASA Safety Manual's requirement that contractors' safety records be evaluated prior to contract award. We suggest adding the specific reference cite, which is "Section 202c2(b) of NASA Handbook (NHB) 1700.1(V1-B), NASA Safety Policy and Requirements Document, June 1, 1993."

6. OIG draft page 24, "Appendix F-Mishap Report Filing Issues"

To more clearly describe the deficiencies that were found, we suggest changing the title to "Mishap Report Documentation Deficiencies" and adding the following paragraph headings:

1. Missing Reports:
2. Failure to Identify Mishap Potential:
3. Late Filing:
4. Missing Data:

Appendix I. Report Distribution

National Aeronautics and Space Administration (NASA) Headquarters

A/Administrator
AI/Associate Deputy Administrator
AO/Chief Information Officer
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
R/Associate Administrator for Aero-Space 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
Director, Lyndon B. Johnson Space Center
Director, Langley Research Center
Director, George C. Marshall Space Flight Center
Chief Counsel, John F. Kennedy Space Center

Non-NASA Federal Organizations and Individuals

Assistant to the President for Science and Technology Policy
Deputy Associate Director, Energy and Science Division, Office of Management and Budget
Branch Chief, Science and Space Programs Branch, Energy and Science Division, Office of Management and Budget
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 and Oversight
House Subcommittee on National Security, Veterans Affairs, and International Relations House Committee on Science
House Subcommittee on Space and Aeronautics

Congressional Member

Honorable Pete Sessions, U.S. House of Representatives

Major Contributors to this Report

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