

**AUDIT  
REPORT**

---

**GODDARD SPACE FLIGHT CENTER'S  
COMPLIANCE WITH EXPORT LAWS AND  
REGULATIONS**

**May 14, 2002**

---



National Aeronautics and  
Space Administration

**OFFICE OF INSPECTOR GENERAL**

## **Additional Copies**

To obtain additional copies of this report, contact the Assistant Inspector General for Audits at (202) 358-1232, or visit [www.hq.nasa.gov/office/oig/hq/issuedaudits.html](http://www.hq.nasa.gov/office/oig/hq/issuedaudits.html).

## **Suggestions for Future Audits**

To suggest ideas for or to request future audits, contact the Assistant Inspector General for Audits. Ideas and requests can also be mailed to:

Assistant Inspector General for Audits  
Code W  
NASA Headquarters  
Washington, DC 20546-0001

## **NASA Hotline**

To report fraud, waste, abuse, or mismanagement contact the NASA Hotline at (800) 424-9183, (800) 535-8134 (TDD), or at [www.hq.nasa.gov/office/oig/hq/hotline.html#form](http://www.hq.nasa.gov/office/oig/hq/hotline.html#form) or write to the NASA Inspector General, P.O. Box 23089, L'Enfant Plaza Station, Washington, DC 20026. The identity of each writer and caller can be kept confidential, upon request, to the extent permitted by law.

## **Reader Survey**

Please complete the reader survey at the end of this report or at [www.hq.nasa.gov/office/oig/hq/audits.html](http://www.hq.nasa.gov/office/oig/hq/audits.html).

---

## **Acronyms**

CTO	Center Transportation Officer
ECP	Export Control Program
GAO	General Accounting Office
NPD	NASA Policy Directive

May 14, 2002

W

TO: I/Assistant Administrator for External Relations  
100/Director, Goddard Space Flight Center  
SJ/Director, NASA Management Office, Jet Propulsion Laboratory

FROM: W/Assistant Inspector General for Audits

SUBJECT: Final Report on Goddard Space Flight Center's Compliance with Export  
Laws and Regulations  
Assignment Number A-01-048-00  
Report Number IG-02-016

Enclosed please find the subject final report. Our evaluation of your response has been incorporated into the body of the report. The corrective action completed on recommendation 5 is responsive, and the recommendation is considered closed for reporting purposes. The corrective actions planned for recommendations 1 through 4 and 6 were also responsive. Please provide estimated completion dates for the corrective actions, and notify us when actions have been completed on those recommendations, including the extent of testing performed to ensure corrective actions are effective. The final report distribution is in Appendix D.

We appreciate the courtesies extended to the audit staff. If you have questions concerning the report, please contact Ms. Sandy Massey, Program Director, Safety and Technology Audits, at (321) 867-4057, or Mr. Karl Allen, Program Manager, at (202) 358-2595.

**[original signed by]**

Alan J. Lamoreaux

Enclosure

cc:

AI/Associate Deputy Administrator

B/Acting Chief Financial Officer

B/Comptroller

BF/Director, Financial Management Division

G/General Counsel

S/Associate Administrator for Space Science

Y/Associate Administrator for Earth Science

ID/Director, Assessments and Technology Division

ID/NASA Export Administrator

JM/Director, Management Assessment Division

# NASA Office of Inspector General

IG-02-016  
A-01-048-00

May 14, 2002

## Goddard Space Flight Center's Compliance with Export Laws and Regulations

### Introduction

The NASA Office of Inspector General has completed an audit of NASA's compliance with export laws and regulations at Goddard Space Flight Center (Goddard) and the Jet Propulsion Laboratory. We performed the audit in response to language in Public Law 106-391, "NASA Authorization Act of 2000," October 30, 2000, which authorizes Agency appropriations for fiscal years 2000-2002. The Act requires the NASA Inspector General to conduct annual audits of the Agency's exports<sup>1</sup> of technologies and transfers of scientific and technical information and to assess the extent to which NASA is carrying out its activities in compliance with Federal export control laws.

We reviewed exports by Goddard and the Jet Propulsion Laboratory because NASA obtained the majority of its recent export licenses at those locations. Specifically, Goddard and the Jet Propulsion Laboratory had a total of 40 (72 percent) out of the 56 export licenses NASA obtained from January 1997 through June 2001.

Our office and the General Accounting Office (GAO) previously performed audits of the NASA Export Control Program (ECP). We issued three reports from 1999 through 2000, and the GAO issued one report in 1999. Each report is summarized in Appendix B.

The objective of this audit was to determine whether NASA exported controlled technology in accordance with applicable export laws and regulations and established Agency export guidance. Specifically, we determined whether NASA exports of items containing controlled technologies:

- were covered by applicable export licenses and
- were within the scope of export licenses.

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

---

<sup>1</sup> NASA's Office of External Affairs defines exports as transfers of anything to a foreign person anywhere or anytime or a transfer to a U.S. person that will be subsequently transferred to a foreign person.

## **Results in Brief**

The exports we reviewed for Goddard and the Jet Propulsion Laboratory were covered by applicable export licenses and were within the scope of the licenses as required by export control laws and regulations. In addition, NASA's Office of External Relations established an ECP policy to assist the Centers in managing the ECP and to preclude NASA officials and contractors from effecting exports that could conflict with U.S. export laws and regulations. NASA is in the process of finalizing Agency procedures and guidelines to implement ECP policy.

We did not identify any export violations. However, Goddard can improve its ECP management controls to ensure continued compliance with Federal export laws and regulations. In addition, Goddard was not in full compliance with NASA's internal policies. Noncompliance could result in potential export license violations, unauthorized exports, and statutory penalties for export violations imposed by the Department of State's Office of Defense Trade Controls or the Department of Commerce's Bureau of Export Administration. Our prior audits identified ECP management control weaknesses related to ECP personnel training and audit performance. The ECP control weaknesses we identified during this audit at Goddard indicate the need for increased attention by NASA management.

## **Background**

As a U.S. Government agency on the leading edge of space and aeronautics technological development and international cooperation, NASA must be a responsible exporter in its international activities. International activities often involve the transfer of commodities, software, or technologies to foreign partners by NASA and its contractors. The transfers are generally subject to export control laws and regulations, regardless of whether they occur in the United States, overseas, or in space.

Export controls are imposed on NASA's transfers and activities to protect the national security and to further U.S. foreign policy objectives. The majority of export licenses are governed and controlled by either the Office of Defense Trade Controls or the Bureau of Export Administration. The Office of Defense Trade Controls is responsible for controlling items identified on the U.S. Munitions List<sup>2</sup> pursuant to the International Traffic in Arms Regulations.<sup>3</sup> The Bureau of Export Administration controls items identified on the Commerce Control List<sup>4</sup> in accordance with the Export Administration

---

<sup>2</sup> The U.S. Munitions List identifies items designated by the President to be defense articles and services.

<sup>3</sup> The International Traffic in Arms Regulations provide for controlling the export and import of defense articles and services pursuant to the Arms Export Control Act.

<sup>4</sup> The Commerce Control List identifies "dual-use" items that have military/strategic and civil applications.

Regulations.<sup>5</sup> Since January 1997, NASA has obtained a total of 38 export licenses from the Office of Defense Trade Controls and a total of 18 export licenses from the Bureau of Export Administration.

The NASA Office of External Relations is the lead liaison with the Department of Defense and the intelligence community, Department of State, Department of Commerce, Office of Science and Technology Policy, Office of the Vice President, and National Science and Technology Council on international policy issues. The NASA Office of External Relations administers the NASA ECP, provides Agencywide policy on international activities, and coordinates day-to-day international interaction at the Headquarters level in support of NASA's Enterprises.<sup>6</sup>

Center Directors are responsible for ensuring that international projects under their purview comply with U.S. export control laws and regulations and NASA Policy Directive (NPD) 2190.1, "NASA Export Control Program," dated May 24, 2001. In accordance with the NPD, each Center Director must appoint a Center Export Administrator (Export Administrator) responsible for administering the ECP. Additionally, each Center Director must appoint a qualified individual as Center Export Auditor (Export Auditor) to annually review the operation of the ECP.

## **Management Controls Related to the Goddard ECP**

**Finding.** Goddard's management controls for its ECP can be improved. Specifically, Goddard had not:

- established sufficient controls over outgoing international mail to reduce the risk of unauthorized exports;
- established formal training plans for personnel having export control responsibilities;
- appointed key ECP officials in accordance with NPD 2190.1 and the NASA ECP Pamphlet (described on next page); or
- established adequate separation of duties for key personnel with export control responsibilities.

---

<sup>5</sup> The Export Administration Regulations implement the export and re-export requirements of the Export Administration Act of 1979.

<sup>6</sup> NASA's Enterprises are Space Science, Earth Science, Biological and Physical Research, Human Exploration and Development of Space, and Aerospace Technology.

Goddard's ineffective ECP audits and the lack of supplemental Agency ECP procedures and guidelines<sup>7</sup> contributed to the control weaknesses. By improving its ECP controls, Goddard could provide greater assurance that its controlled technologies were properly exported and that errors and unauthorized exports would be readily detected and prevented.

### ***NASA's ECP Policy***

NASA's ECP policy is addressed in NPD 2190.1 and the NASA Export Control Pamphlet, November 1995. The NPD states that it is NASA policy to ensure that exports and transfers of commodities, technical data, or software to foreign persons are in accordance with U.S. export control laws and regulations and NASA policy. The NPD also defines an export as the transfer (by physical, electronic, oral, visual, or other means including mail) of a commodity, software, or technical data to a foreign person or a foreign person's U.S. representative who is either abroad or in the United States.

The NASA ECP Pamphlet does the following:

- outlines the Agency's role and policy in exports to foreign partners;
- provides for the appointment of and summarizes the authorities and responsibilities of Headquarters and Field Center ECP officials;
- outlines general export control responsibilities for NASA personnel;
- establishes ECP documentation and recordkeeping requirements, training requirements, and annual ECP audits; and
- outlines the ECP audit process.

To facilitate NASA exports, NPD 2190.1 and the NASA ECP Pamphlet require NASA Center Directors to appoint an Export Administrator who is responsible to:

- ensure that Center activities comply with U.S. export control laws and regulations;
- initiate ECP awareness and training programs;

---

<sup>7</sup> As a result of our audit report, "NASA Oversight of Contractor Exports of Controlled Technologies," dated March 23, 2000, NASA agreed to establish procedures and guidelines for better management of the Agency's ECP. NASA has not yet issued the recommended procedures and guidelines in final form.

- consult with the Center’s Export Counsel<sup>8</sup> (Export Counsel), the Center Transportation Officer (CTO),<sup>9</sup> and Project Managers on export control matters; and
- serve as the Center point of contact for the NASA Headquarters Export Administrator.

NPD 2190.1 also requires that Center Directors appoint Export Auditors to perform annual reviews of the ECP at each Center. The annual audits include reviews of ECP communications, training information, and guidance; verification that ECP or other export control training is documented; verification that required screening and licensing procedures are regularly followed; and verification that required documents are maintained and in compliance with the requirements of the Export Administration Regulations and the International Traffic in Arms Regulations.

***Federal Government Management Control Requirements***

The Office of Management and Budget Circular A-123, “Management Accountability and Control,” which references GAO’s “Standards for Internal Control in the Federal Government,” requires that program operations comply with applicable laws and regulations; appropriate authority, responsibility, and accountability be defined and delegated to accomplish the agency’s mission; personnel be adequately trained and competent to perform assigned duties; and key duties and responsibilities in authorizing, processing, recording, and reviewing official agency transactions be separated among individuals.

***ECP Management Controls***

Goddard’s ECP management controls needed improvement in the areas of outgoing international mail, personnel training, appointment of key officials, and separation of duties among key officials.

**Controls Over Outgoing International Mail.** Goddard needed additional ECP controls for documents, software, or technical information that could be sent by international mail or parcel service to most foreign countries. The Export Administrator did not review international mail. The Center’s International Coordinator, who reports to the Associate Center Director, is not part of the ECP. The International Coordinator instructed mailroom employees to forward for her review, mail (letters and packages) addressed to or from countries on the International Traffic in Arms Regulations proscribed countries

---

<sup>8</sup> Each Center’s Chief Counsel must appoint an Export Counsel to provide the Center Export Administrator with legal guidance on export control matters.

<sup>9</sup> The NASA ECP Pamphlet requires that each CTO consult with the Center Export Administrator to ensure that exports and transfers of commodities, technologies, and software are accompanied by appropriate and accurate export control documentation.

list.<sup>10</sup> The Coordinator's review consisted of contacting the sender to determine whether the contents of the mail constituted an export. However, the Export Administrator and the International Coordinator neither reviewed nor provided guidance for processing mail addressed to countries other than those on the proscribed list.

The Export Administrator and International Coordinator acknowledged that the Center lacked the necessary controls to ensure that exports to countries not on the proscribed list by regular mail or parcel services complied with applicable laws and regulations. While those officials believed employee ECP awareness was an essential control in preventing unauthorized exports, the two Project Managers we interviewed<sup>11</sup> were unaware of ECP requirements, including those related to sending international mail. Consequently, Goddard management had little assurance that Center personnel properly used international mail or parcel service for sending controlled technologies to foreign countries.

The Jet Propulsion Laboratory recently developed procedures to address similar problems. Specifically, the procedures required Project Managers and other senders to attest to the contents of all outgoing international mail by completing and signing a self-certification form to accompany the item to be mailed. Additionally, the procedures required the Laboratory's Export Administrator to review the forms and approve each mailing. The Laboratory's Mail Services personnel are required to return foreign mail that does not have the required certification form to the sender. Although the procedures did not preclude employees from sending international mail through off-site mail and parcel facilities, the procedures reduced the likelihood that the Laboratory's mail center could be used to improperly send controlled technologies to foreign countries. Implementation of similar control procedures for Goddard's outgoing international mail would help to ensure the Center's compliance with the ECP policies and objectives and to prevent unauthorized exports.

**Training Plans for Personnel with ECP Responsibilities.** The NASA ECP Pamphlet requires the Headquarters Export Administrator and Center Export Administrators to conduct or arrange annual training for NASA officials, to include the Export Counsel, Program and Project Managers, CTO's, and other personnel involved in export issues. The Goddard Export Administrator had not developed a training plan for personnel with ECP responsibilities in accordance with the ECP Pamphlet. Some Project Managers and other responsible personnel were assigned to projects that had technology exports; however, they had not received required ECP training. Consequently, they were not knowledgeable of ECP requirements. Within the management control environment, establishing appropriate training is critical. Goddard could improve its ECP control

---

<sup>10</sup> Proscribed countries are those that have been banned from receiving U.S. exports of controlled technologies. If a country appears on the proscribed countries list, it is generally U.S. policy to deny licenses, or other approvals, associated with exports and imports of defense articles and defense services destined for or originating in that country.

<sup>11</sup> We interviewed Goddard's acting Project Managers for the Very Long Baseline Interferometer and Tropical Rainforest Measuring Mission projects regarding the Center's ECP. Both projects included licensed exports of technology and space hardware.

environment by initiating an awareness program, developing a training plan, and providing training for personnel involved in export processes.

**Appointment of ECP Key Personnel.** NPD 2190.1 requires the Center Director to appoint an Export Administrator and Export Auditor and requires the Center Chief Counsel to appoint an Export Counsel. Goddard, however, had not formally appointed personnel to any of those three key positions as discussed below:

- **Export Administrator.** A former employee of Goddard’s Management Operations Directorate appointed the Export Administrator.
- **Export Counsel.** The NASA Headquarters Export Administrator and the NASA ECP Web site identified the Goddard Chief Counsel as the Export Counsel. However, the Goddard Chief Counsel had never been formally appointed. Furthermore, the Goddard Chief Counsel had not received any ECP training in more than 2 years. Another employee of the Chief Counsel’s office received annual training,<sup>12</sup> consulted with Center personnel on export matters, and ultimately performed the majority of Goddard’s Export Counsel duties.
- **Export Auditor.** The Center Director did not formally appoint the Export Auditor. The Export Auditor assumed the duties after receiving an informal request from the Export Administrator.

The GAO Standards for Internal Control in the Federal Government state, “a good internal control environment requires that the agency’s organizational structure clearly define key areas of authority and responsibility and establish appropriate lines of reporting.” Further, the internal control environment is affected by delegation of authority and responsibility. Appointments that give appearances of potential conflicts of interest and a lack of a segregation of duties do not contribute to a positive ECP control environment. Proper appointments for the Goddard Export Administrator, Export Counsel, and Export Auditor would help ensure compliance with the NPD and GAO standards and improve the overall ECP control environment.

**Separation of Duties for Export Control Personnel.** Goddard did not adequately separate the duties of the Export Administrator, CTO, and Export Auditor to reduce the risk of errors and fraud in its ECP. For example, the Export Administrator also serves as CTO. NPD 2190.1 and the NASA ECP Pamphlet refer to the two positions as separate and distinct. Specifically, the NASA ECP Pamphlet states that Center Export Administrators will coordinate with Export Counsel, CTO’s, and Project Managers on export control matters affecting NASA programs. The ECP Pamphlet further requires CTO’s, in consultation with Export Administrators, to ensure that all exports are accompanied by appropriate ECP documentation. Having one individual act in both

---

<sup>12</sup> The employee attended the Bureau of Export Administration update conference, the International Traffic in Arms Regulations conference, and the NASA export conference annually.

capacities (Export Administrator and CTO) contravenes GAO standards and Agency policy on separation of duties and increases Goddard's risk of committing an undetected export violation.

The Export Auditor's responsibilities were also not adequately separated. The Export Auditor's primary duties were as Goddard's transportation specialist who reports to the Goddard Export Administrator/CTO. In addition, the Export Auditor served as the Headquarters Transportation Officer and could have been involved in export shipments made by NASA Headquarters through Goddard. The dual responsibilities were a concern because as the Export Auditor's supervisor, the Export Administrator/CTO could have improperly influenced the ECP audit results. In addition, the Export Auditor's dual responsibilities placed him in a position of evaluating his own work. The two conditions could have resulted in subjective audits.

The GAO internal control standards consider segregation of duties an important element of an effective control environment. GAO standards require that key duties and responsibilities be divided among different personnel to reduce the risk of error or fraud. Such a division of duties is necessary to ensure that no one individual controls all key aspects of transactions or events. Goddard's organizational structure for the Export Administrator, CTO, and Export Auditor conflict with management controls outlined in the GAO standards, NPD 2190.1, and the NASA ECP Pamphlet and contributed to the Center's weak ECP control environment.

### ***Goddard's Annual ECP Audit***

Goddard's 2000 ECP audit did not comply with NPD 2190.1 requirements or NASA's calendar year 2000 ECP audit guidance and did not identify some of the management control weaknesses identified in this report. Our review of Goddard's annual ECP audits for 1999 and 2000 showed the following:

- The Export Auditor was neither properly trained nor independent.
- The Export Auditor did not maintain documentation to support the audits.
- The audit reports did not include required data specified in the NASA ECP Pamphlet and Headquarters audit guidance.
- The audit reports did not contain a summary of the audit's results or an attestation of the status of the Center's ECP, recommendations for improvement, or evidence of the Export Administrator's review of the audit.

NPD 2190.1 requires that Center Directors appoint Export Auditors who are qualified for the position. NASA's calendar year 2000 guidance on performing ECP audits required

Export Auditors to have International Standards Organization 9000<sup>13</sup> audit/validation experience or other formal audit training or experience.

In addition, the NASA External Relation Office's calendar year 2000 guidance for performing ECP audits required Export Auditors to be independent of the export control function. Contrary to the guidance, the Goddard Export Auditor was not appointed or trained and was not independent to ensure an effective ECP audit. As previously discussed, the Export Auditor was not independent because he reported directly to the Export Administrator/CTO and served as the Headquarters Transportation Officer.

The ECP audits serve as a management tool to help ensure program integrity. An effective ECP audit should have identified some of the same management control weaknesses and noncompliance issues that we identified in our audit. The Goddard ECP audits consisted of merely completing the checklist included in the calendar year 2000 audit guidance. Further, the Export Auditor only answered the checklist questions and reported no conditions, recommendations, or follow-up activity. Also, there was no evidence of review, concurrence, or nonconcurrence with the ECP audit results by the Export Administrator. In addition, the Export Auditor could not provide any documentation to support his work. Finally, the Export Auditor did not consider the ECP control environment to include appointments of ECP key officials and ECP training. The auditor's lack of training and independence resulted in ineffective audits and contributed to the Center's weakened ECP control environment.

### ***Agency Implementation of ECP Guidance***

NASA strengthened its ECP policy by issuing NPD 2190.1 on May 24, 2001. However, the Agency intended for the NPD to be only a brief policy statement. Agency officials agreed about 2 years ago to establish ECP implementing procedures in NASA Procedures and Guidelines 2190. As of February 2002, the procedures and guidelines were still in draft form. ECP management controls at the NASA Centers should improve once the procedures are finalized and implemented.

### ***Benefits From Improved Controls***

Goddard can improve its overall ECP control environment. Strengthening the management controls that we identified will provide required checks and safeguards to better manage Goddard's ECP initiatives. Additionally, improving the ECP control environment will help to prevent export violations and statutory penalties that could result from exports that are contrary to or inconsistent with U.S. export laws and regulations.

---

<sup>13</sup> International Standards Organization 9000 is a series of standards and guidelines that define the minimum requirements for an effective quality system accepted internationally.

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

**The Director, Goddard Space Flight Center, should:**

- 1. Establish export controls over outgoing international mail. Goddard should consider implementing export controls over international mail similar to those at the Jet Propulsion Laboratory.**

**Management's Response.** Concur. Although Goddard concurred, management believes it can best ensure proper export control over international mail through enhanced educational efforts rather than routing each piece of international mail through a central office for export control screening. Goddard stated that the Jet Propulsion Laboratory Export Administrator reviews only those international mailings that do not include a self-certification. Goddard will undertake enhanced training through its recurring ECP training, use of the export control module on the NASA Site for On-line Learning and Resources, and other means, all of which will include instruction in the screening of international mail. In addition, the Goddard Export Administrator, in conjunction with the Goddard International Coordinator, will establish procedures to review all official foreign correspondence to proscribed countries prior to transmission to the NASA Office of External Relations for review and concurrence. The complete text of management's response is in Appendix C.

**Evaluation of Management's Response.** Goddard's planned action is responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until corrective actions are completed. Management's comment that the Jet Propulsion Laboratory's Export Administrator reviews only those international mailings that receive no self-certification does not conform to the Laboratory's approved draft procedures, which we relied upon in our audit. Specifically, the draft procedures require: (1) the requester to prepare an "International Mail Self-Certification" for all unclassified foreign mail, (2) the Legislative and International Affairs Office to review unpublished technical data and provide an export authorization or denial, and (3) the Mail Services Office to verify that all foreign mail includes the self-certification document and to provide copies of the completed documents each month to the Legislative and International Affairs Office.

- 2. Emphasize the ECP by formally appointing the Center Export Administrator and by directing the Center Chief Counsel to appoint a Center Export Counsel who is adequately trained to perform the ECP duties.**

**Management's Response.** Concur. The Goddard Director will issue a letter formally appointing a qualified senior official as Center Export Administrator. On April 1, 2002, the Goddard Chief Counsel issued a formal letter designating himself as the Center Export Counsel. Goddard also noted an error in the draft report. Specifically, the former employee that appointed the Center Export Administrator was the Goddard Patent

Counsel, an employee of the Goddard Management Operations Directorate, rather than the Chief Counsel's Office as was stated in the draft report. Goddard also noted that the Center Export Counsel had attended the ECP training provided by the Goddard Export Control Administrator (see Appendix C).

**Evaluation of Management's Response.** Goddard's planned action is responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until we receive a copy of the letter appointing the Center Export Administrator. We revised the final report relating to the Patent Counsel and the Management Operations Directorate. In addition, we clarified the report to state that the Center Chief Counsel had not received export training in more than 2 years. Although we did not obtain written evidence of the Chief Counsel's ECP training, the Goddard Export Control Administrator stated that the Chief Counsel attended export briefings in May 1999 and January 2000.

### **3. Direct the Center Export Administrator to emphasize the ECP by:**

- **identifying personnel involved in the export process,**
- **establishing and maintaining a formal training plan for personnel involved in the process, and**
- **providing appropriate training to employees with export control responsibilities.**

**Management's Response.** Concur. Goddard is reviewing its organizations that are currently or potentially associated with international activities to identify additional personnel performing or appropriate to perform export control responsibilities. Goddard will enhance its Export Control Office Web site to include links to the Logistics Management Division and to other export personnel, as Goddard management identifies them. The Center Export Administrator will provide and document the annual export control training required by NPD 2190.1 and will implement a more advanced annual training program for all identified export control personnel (see Appendix C).

**Evaluation of Management's Response.** Goddard'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.

### **4. Segregate the duties of the Center Export Administrator and the CTO.**

**Management's Response.** Concur. The Goddard Director will appoint a qualified senior official as CEA who does not also serve as the Center Transportation Officer (see Appendix C).

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

- 5. Appoint a qualified and independent Export Control Auditor, and require the Export Control Auditor to maintain supporting audit documentation and to comply with NASA Headquarters guidelines for performing audits and reporting audit results.**

**Management's Response.** Concur. The Goddard Director appointed a qualified and independent Export Control Auditor on March 7, 2002. The Export Control Auditor was provided with a comprehensive instruction and information package, originating from NASA Headquarters, regarding duties, responsibilities, and performance guidelines (see Appendix C).

**Evaluation of Management's Response.** Management's action is responsive to the recommendation. We consider the actions sufficient to disposition the recommendation, which will be closed for reporting purposes.

- 6. The Assistant Administrator for External Relations should expedite issuance of NASA Procedures and Guidelines 2190 in final form.**

**Management's Response.** Concur. The Office of External Relations is currently reviewing the draft NPG 2190, and entry into NASA's Online Directives System for Agencywide review is anticipated in early June 2002.

**Evaluation of Management's Response.** Management's planned action is responsive to the recommendation. The recommendation is resolved, but will remain undispositioned and open for reporting purposes until NPG 2190 is finalized.

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

---

### **Objectives**

The overall objective of the audit was to determine whether NASA exported controlled technology in accordance with applicable export laws and regulations and established NASA export guidance. Specifically, we determined whether NASA exports of controlled technologies:

- were covered by applicable export licenses and
- were within the scope of export licenses.

### **Scope and Methodology**

We performed a detailed review of NASA's Export Control Program (ECP) requirements and procedures. We examined export records and documents to include export licenses from the Departments of State and Commerce and Shipper's Export Declarations. We also interviewed export officials such as Export Administrators, Export Counsel, Export Auditors, and Project Managers. We reviewed exports by the Goddard Space Flight Center (Goddard) and the Jet Propulsion Laboratory because NASA obtained the majority of export licenses for those locations. The licenses we reviewed at Goddard and the Jet Propulsion Laboratory represented about 72 percent (40 licenses) of the 56 export licenses NASA obtained from January 1997 through June 2001. We did not assess the reliability of computer-processed data, because we did not rely on it to achieve our objectives.

### **Management Controls Reviewed**

Government auditing standards published by the General Accounting Office (GAO) require auditors to obtain a sufficient understanding of internal controls to plan and determine the nature, timing, and tests to be performed during the audit. Internal controls normally assessed in audits include the control environment, safeguard of assets, compliance with laws and regulations, and risk assessments. We assessed internal management controls for the ECP using Office of Management and Budget guidelines and GAO standards. The primary controls are in the U.S. Department of State's International Traffic in Arms Regulations; the U.S. Department of Commerce's Export Administration Regulations; NASA Policy Directive 2190.1, "NASA Export Control Program," and NASA's Export Control Pamphlet. We identified management control weaknesses as discussed in the finding section of this report.

### **Audit Field Work**

We conducted audit field work from September through December 2001 at Goddard, the Jet Propulsion Laboratory, and NASA Headquarters. We performed the audit in accordance with generally accepted Government auditing standards.

## Appendix B. Prior Audit Reports

---

The NASA Office of Inspector General and the General Accounting Office (GAO) have performed prior audits related to the export of controlled technologies. The reports are summarized below. (See <http://www.hq.nasa.gov/office/oig/hq/issuedaudits.html> for copies of the NASA Office of Inspector General reports.)

**“Contractor Exports of Controlled Technologies,” Report Number IG-00-048, September 19, 2000.** NASA contractors, TRW Space and Electronics Group (TRW) and Lockheed-Martin Michoud Space Systems (Lockheed-Martin) had adequate export control programs to ensure exports complied with applicable laws and regulations. TRW and Lockheed-Martin had developed effective export control policies, established export control training programs, and maintained required and readily available export records. Another contractor, Boeing Space and Communications Group (Boeing), needed to improve its Export Control Program (ECP) to prevent the potential for unauthorized or unlicensed transfers of NASA’s International Space Station Program controlled technologies. The auditors concluded that NASA lacked assurance that Boeing’s export activities on behalf of the Agency fully complied with applicable export laws and regulations.

We recommended that NASA require Boeing to establish an ECP and a detailed company-wide export policy that complied with Export Administration Regulations before authorizing Boeing’s use of NASA-obtained export licenses on behalf of the International Space Station Program. We also recommended that the Agency require the International Space Station Program Office, in coordination with the Center Export Administrator, to periodically review Boeing’s and its subcontractors’ ECP’s to ensure that exports effected against NASA-obtained licenses were in accordance with applicable U.S. export laws and regulations.

NASA concurred with the recommendations; however, management questioned whether some examples in the report were export violations. We reaffirmed that the reported examples could represent possible violations because of disparities in management’s explanations and inconsistencies in supporting documentation.

**“NASA Oversight of Contractor Exports of Controlled Technologies,” Report Number IG-00-018, March 23, 2000.** NASA contractors were exporting controlled technologies to foreign entities in support of the Agency’s international activities. However, NASA managers of major programs at Goddard Space Flight Center, Johnson Space Center, and Marshall Space Flight Center were unable to readily identify the types and amounts of NASA-funded controlled technologies that contractors export. We concluded that NASA lacked assurance that contractor export activities complied with applicable U.S. export laws and regulations. We also identified potential violations by two NASA contractors that

were exporting NASA-funded controlled technologies to foreign contractors in furtherance of the International Space Station and Space Shuttle External Tank Programs.

We recommended that NASA require contractors to provide the following:

- a plan for obtaining required export licenses to fulfill contract requirements,
- a listing of export licenses the contractor obtained, and
- a periodic report of the exports effected against those licenses.

We also recommended that NASA revise its draft NASA Policy Directive 2190, “NASA Export Control Program,” to incorporate the oversight responsibilities of Agency officials when NASA or its contractors obtain export licenses on behalf of a NASA program.

NASA concurred with the recommendations and agreed to provide additional guidance to assure that contracts contain export control requirements. Management also agreed to include responsibilities for Agency officials in its draft procedures and guidelines on export controls.

**“NASA Control of Export-Controlled Technologies,” Report Number IG-99-020, March 31, 1999.** NASA had not identified all export-controlled technologies of its major programs and did not maintain a catalog of classifications for transfers of export-controlled technologies. Also, Agency oversight of and training for personnel in the ECP needed improvement. Specifically, the Centers’ annual ECP audits were not adequately performed, and NASA personnel lacked training in controlling and documenting export-controlled technologies. NASA did not have adequate control over export-controlled technologies to preclude unauthorized or unlicensed transfers.

NASA concurred with the recommendations and stated it planned to develop a catalog of classifications for specific exports, improve training and guidance for ECP auditors, and enhance and strengthen training for NASA employees involved directly or indirectly with technology control.

The GAO performed one audit of the NASA ECP as it related to the International Space Station.

**“Export Controls – International Space Station Technology Transfers,” Report Number GAO/NSIAD-00-14, November 1999.** The GAO found that NASA authorized the export of radiation-hardened electronic parts to Russia in 1997 without first obtaining a license from the State Department’s Office of Defense Trade Controls. The report recommended improvements in the quality of NASA internal audits.

## Appendix C. Management's Response

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



APR 11 2002

Reply to Attn of: I

**TO:** W/Assistant Inspector General for Auditing

**FROM:** I/Assistant Administrator for External Relations  
100/Director, Goddard Space Flight Center

**SUBJECT:** NASA Response to Office of Inspector General (OIG) Draft Audit Report  
A-01-048-00, "Goddard Space Flight Center's Compliance  
with Export Laws and Regulations"

In response to your February 21, 2002, request, we have reviewed the above-referenced draft audit report and provide herein NASA's response. We appreciate the Inspector General's efforts in helping us review and improve this area of our business. We would also like to acknowledge the excellent working relationships between your audit personnel and the export control and program personnel that were interviewed during the conduct of the audit. We concur with the report's general observations and recommendations, subject to the clarifications that we discussed in our January 18, 2002, meeting, and which are related below.

We are pleased that the Draft Report makes clear that no export control violations were identified and that the exports reviewed by your staff were properly covered by applicable export licenses and were within the scope of those licenses, as required by U.S. export control laws and regulations. We believe NASA is unique among U.S. Government agencies in establishing and implementing a comprehensive Agency-wide Export Control Program (ECP), and we are committed to continuing our emphasis on export control awareness and compliance across the Agency, in all NASA programs. NASA will likewise continue to strengthen NASA's ECP management controls.

We are pleased to provide NASA's concurrence with the six Draft Report recommendations, as noted below:

Recommendation 1: The Director, Goddard Space Flight Center (GSFC), should establish export controls over outgoing international mail. Goddard should consider implementing export controls over international mail similar to those at the Jet Propulsion Laboratory.

Response: Concur. While GSFC concurs with this recommendation, we believe we can best ensure the proper export control review of international mail through enhanced educational

efforts of the GSFC workforce rather than each piece of international mail being routed through a central office for export control screening. With regard to the process at JPL, although the Draft Report findings and discussion on page 6 state “the procedures required the [JPL] Export Administrator to review the forms and approve each mailing,” the International Affairs office at JPL reviews only those international mailings that receive no self-certification by the sender, who has the responsibility to certify the contents of the outgoing mail. In our conversations with the International Affairs Office they indicated they only review a small amount of the international mailings from JPL, and that the majority is self-certified.

GSFC will undertake the enhanced training through its recurring ECP training, use of the export control module on the NASA Site for On-line Learning and Resources (SOLAR) and other means, all of which do or will include instruction in NASA export control policies and procedures, including the screening of international mail. We also note that NPG 1450.10C, NASA Correspondence Management and Communications Standards and Style, already provides, in Appendix D, for review and concurrence by the NASA Headquarters Office of External Relations of all official correspondence to Designated Areas. Consistent with the objectives of NPG 1450.10C, the GSFC Export Administrator, in conjunction with the GSFC International Coordinator, will establish specific procedures to ensure export review of all official foreign correspondence addressed to Designated Areas prior to transmission to NASA Headquarters for review and concurrence by the Office of External Relations.

In addition, we will emphasize in our export control training and processes that requests for technical information that is published and in the public domain and available through the NASA Center for AeroSpace Information in Hanover, Maryland, be directed to that source. This will reduce the processing of such requests through the NASA Centers.

Recommendation 2: The Director, GSFC, should emphasize the ECP by formally appointing the Center Export Administrator and by directing the Center Chief Counsel to appoint a Center Export Counsel who is adequately trained to perform the ECP duties.

Response: Concur. The GSFC Director will issue a letter formally appointing a qualified senior official as Center Export Administrator (CEA), and the GSFC Chief Counsel will issue a formal letter designating himself as GSFC Center Export Counsel (CEC).

Although one attorney in the Office of the Chief Counsel provides most of the export control advice for the office, several attorneys have been involved in providing export control guidance. It is important to note that multiple attorneys are experienced in the area to ensure continuous, effective coverage by the office. The Chief Counsel is responsible for assigning individual actions in this area to specific attorneys, which may not necessarily be the same attorney each time. Ultimately, however, the Chief Counsel is responsible for the legal services of his office.

We would like to note a correction. The OIG draft report’s reference on page 6 to a former employee of the GSFC Office of Chief Counsel having appointed the Center Export Administrator should be corrected to reflect that the former employee was the GSFC Patent

Counsel, who was an employee not of the Chief Counsel's office but of the Management Operations Directorate (the same organization, incidentally, as the CEA).

We additionally note that, although the Draft Report states on page 7 that the "Goddard Chief Counsel had not received any ECP training," the Chief Counsel has attended export control program training provided by the GSFC Center Export Administrator, as required by NPD 2190.1, NASA Export Control Program.

**Recommendation 3:** The Director, GSFC, should direct the Center Export Administrator to emphasize the ECP by: (a) identifying personnel involved in the export process; (b) establishing and maintaining a formal training plan for personnel involved in the process; and (c) providing appropriate training to employees with export control responsibilities.

**Response:** Concur.

*(a) Identifying Personnel Involved in the Export Process:* Although the GSFC Export Control Office Website, <http://lmd.gsfc.nasa.gov/export/home.htm>, currently identifies the key GSFC export control personnel located in the Logistics Management Division, GSFC is reviewing those GSFC organizations currently or potentially associated with international activities in order to identify additional personnel performing or appropriate to perform export control responsibilities. GSFC has an integrated logistics outreach and support program for all new projects, which includes identifying export control contacts and training opportunities. The GSFC Logistics Management Division additionally maintains a Project Support Matrix that identifies program and project managers involved in the export process at GSFC. The current matrix lists approximately 20 projects and includes such data as project managers' names and telephone numbers, support contractors, shipping and launch schedules, and current status. The matrix is updated on a regular basis. In response to this recommendation, the GSFC Export Control Office Website will be enhanced to include links to the matrix, as well as to those additional personnel identified as appropriate export control contacts.

*(b) Establishing and Maintaining a Formal Training Plan for Personnel Involved in the Process:* GSFC currently provides formal annual training, entitled "Export Control of Hardware and Technology," to address the needs of employees with export control responsibilities. This training includes the NASA ECP video, detailed multimedia instruction led by the GSFC CEA and supporting export control specialists about NASA and GSFC processes, policies, and guidelines involved in export control and technology transfer, as well as applicable laws and regulations. Notably, GSFC management is scheduled for training in the near future. In response to this recommendation, the GSFC CEA will provide and document continued essential annual export control training for all personnel identified in the export control process, pursuant to (a) above.

*(c) Providing Appropriate Training to Employees with Export Control Responsibilities:* As discussed in (b) above, the GSFC CEA will provide and document the annual export control training required by NPD 2190.1. Additionally, the CEA will implement a more advanced annual training program for GSFC export control personnel, specifically targeting the CEC, Program and Project Managers, Center Transportation Officer, and all other personnel

identified with significant export control responsibilities. This training will be completed by October 30, 2002. We note that the GSFC CEA provided formal training to four GSFC flight projects during 2001. In addition, approximately 17 flight projects with unique export issues were given specific export training.

Recommendation 4: The Director, GSFC, should segregate the duties of the Center Export Administrator and the Center Transportation Officer.

Response: Concur. The GSFC Director will appoint a qualified senior official as CEA who does not also serve as the Center Transportation Officer.

Recommendation 5: The Director, GSFC, should appoint a qualified and independent Export Control Auditor, and require the Export Auditor to maintain supporting audit documentation and to comply with NASA Headquarters guidelines for performing audits and reporting audit results.

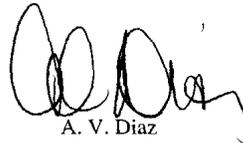
Response: Concur. By letter dated March 7, 2002, the GSFC Director appointed a qualified and independent GSFC Export Control Auditor. A copy of the letter will be forwarded to the OIG Program Director for Safety and Technology Audits under separate cover. The Export Control Auditor was provided with a comprehensive instruction and information package, originating from NASA Headquarters, regarding duties, responsibilities, and performance guidelines.

Recommendation 6: The Assistant Administrator for External Relations should expedite issuance of NASA Procedures and Guidelines 2190 in final form.

Response: Concur. A draft NPG 2190 is currently under review within the Office of External Relations. Entry into NASA's Online Directives System for Agency-wide review is anticipated in early June 2002.

We appreciate this opportunity to comment on your draft report and look forward to working with the Office of Inspector General as we continue our mutual efforts to improve this important Agency program. Please contact Mr. John Hall, Manager, International Technology Transfer Policy, and NASA Export Administrator, at 202-358-2070, or Ms. JoAnn Clark, GSFC Audit Liaison Officer, at 301-286-7977, if you have any questions or you need further information or coordination.

  
John D. Schumacher

  
A. V. Diaz

## **Appendix D. Report Distribution**

---

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

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

### **NASA Centers**

Director, Goddard Space Flight Center  
Chief Counsel, Goddard Space Flight Center  
Director, NASA Management Office, Jet Propulsion Laboratory  
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  
Managing Director, Acquisition and Sourcing Management Team, General Accounting Office  
Senior Professional Staff Member, 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 Efficiency, Financial Management and Intergovernmental Relations  
House Subcommittee on Technology and Procurement Policy  
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 Audits Reader Survey

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

**Report Title:** Final Report on Goddard Space Flight Center's Compliance with Export Control Laws and Regulations.

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

*Circle the appropriate rating for the following statements.*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	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)**

- |   |  |
|---|--|
| <input type="checkbox"/> Congressional Staff  | <input type="checkbox"/> Media           |
| <input type="checkbox"/> NASA Employee  | <input type="checkbox"/> Public Interest |
| <input type="checkbox"/> Private Citizen  | <input type="checkbox"/> Other: _____    |
| <input type="checkbox"/> Government: _____ Federal: _____ State: _____ Local: _____ |  |

**May we contact you about your comments?**

Yes: \_\_\_\_\_ No: \_\_\_\_\_

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

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

Thank you for your cooperation in completing this survey.

## **Major Contributors to the Report**

Ms. Sandy Massey, Program Director, Safety and Technology Audits

Mr. Karl Allen, Program Manager, Safety and Technology Audits

Mr. Oscar Lindley, Auditor-in-Charge

Mr. Lamar Brickhouse, Auditor

Ms. Nancy Cipolla, Report Process Manager

Ms. Edith Hoggard, Program Assistant