

Office of Inspector General

October 31, 2000

The Honorable Ted Stevens
Chairman, Appropriations Committee
United States Senate
522 Senate Hart Office Building
Washington, DC 20510-0201

Dear Mr. Chairman:

The Senate Report (S.R. 106-161) that accompanied the Fiscal Year 2000 Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act (Public Law 106-74) included language directing NASA, in conjunction with the NASA Inspector General, to conduct an annual assessment and report to the Congress on all procedures, protocols, and policies governing the export or transfer of NASA-related technologies and to determine the extent to which NASA and its contractors are carrying out activities in compliance with Federal export control laws. We conducted two export-related audits covering NASA and contractor export activities during fiscal year (FY) 2000 and are forwarding a summary of the issues identified in those audits as the Office of Inspector General response to S.R. 106-161. I share the Committee's concerns with regard to NASA's export activities and plan to devote resources to additional export-related audits and reviews during FY 2001.

Should you or your staff like to discuss the report issues further, please feel free to call me at (202) 358-1220 or Alan Lamoreaux, Assistant Inspector General for Management and External Relations, at (202) 358-2061.

Sincerely,

[original signed by]
Roberta L. Gross
Inspector General

Enclosure:
IG-01-001, Response to Senate Report 106-161 - Fiscal Year 2000 Assessment of NASA's
Export Activities

cc:

The Honorable Robert Byrd
Ranking Minority Member
Senate Committee on Appropriations

The Honorable Christopher Bond
Chairman, Subcommittee on VA, HUD, and Independent Agencies

The Honorable Barbara A. Mikulski
Ranking Minority Member
Subcommittee on VA, HUD, and Independent Agencies

The Honorable John McCain, Chairman
Senate Committee on Commerce, Science and Transportation

The Honorable Ernest Hollings
Ranking Minority Member, Senate Committee on
Commerce, Science, and Transportation

The Honorable Bill Frist, Chairman
Senate Subcommittee on Science, Technology and Space

The Honorable John Breaux
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Senate Subcommittee on Science, Technology, and Space

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The Honorable Alan B. Mollohan
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The Honorable Ralph Moody Hall
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The Honorable Dana Rohrabacher
Chairman, House Subcommittee on Space and Aeronautics

The Honorable Bart Gordon
Ranking Minority Member
House Subcommittee on Space and Aeronautics

The Honorable Pete Sessions

IG-01-001

**ANNUAL
REPORT**

**RESPONSE TO SENATE REPORT 106-161
FISCAL YEAR 2000 ASSESSMENT OF
NASA'S EXPORT ACTIVITIES**

October 31, 2000



National Aeronautics and
Space Administration

**OFFICE OF INSPECTOR
GENERAL**

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Acronyms

EAR	Export Administration Regulations
ECP	Export Control Program
FAR	Federal Acquisition Regulation
FY	Fiscal Year
GAO	General Accounting Office
ISS	International Space Station
ITAR	International Traffic in Arms Regulations
NPD	NASA Policy Directive
NPG	NASA Procedures and Guidelines
OIG	Office of Inspector General

NASA Office of Inspector General

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October 31, 2000

Response to Senate Report 106-161 Fiscal Year 2000 Assessment of NASA's Export Activities

Introduction

On October 20, 1999, the President signed House of Representatives Bill 2684, the Fiscal Year (FY) 2000 Departments of Veteran Affairs and Housing and Urban Development, Independent Agencies Appropriations Act (Public Law 106-74). Senate Report 106-161, which accompanied the Act, included language directing NASA, in conjunction with the Office of Inspector General (OIG), to conduct an annual assessment and report to the Congress on all procedures, protocols, and policies governing the export or transfer of NASA-related technologies and to determine the extent to which NASA and its contractors are carrying out activities in compliance with Federal export control laws.

This report provides a summary of the OIG's activities during FY 2000 with respect to NASA's export¹ activities, and in particular, those related to contractors. The NASA OIG completed two audits² during FY 2000 pertaining to contractor export activities. The audits addressed issues pertaining to contractor exports of controlled technologies and NASA's oversight of contractors' export activities. The objectives of the two audits were to (1) assess NASA oversight of contractor processes for exporting NASA-funded controlled technologies and (2) determine whether major contractors have established adequate controls over NASA's controlled technologies to preclude unauthorized or unlicensed exports.

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. NASA's international activities often involve the transfer of commodities, software, or technologies to foreign partners not only by NASA, but also by its contractors.³ The transfers are generally subject to export control laws and regulations,

¹ Exports are transfers of any commodities, software, or technologies to foreign entities and include items such as flight hardware and software, propulsion systems, and spacecraft systems and associated equipment.

² The results of these audits are detailed in NASA OIG Reports IG-00-018, "NASA Oversight of Contractor Exports of Controlled Technologies," March 23, 2000; and IG-00-048, "Contractor Exports of Controlled Technologies," September 19, 2000.

³ See Appendix A for situations in which controlled technologies are exported in support of NASA programs.

regardless of whether they occur in the United States, overseas, or in space. Export controls are imposed on such transfers and activities in order 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 at the Department of State or the Bureau of Export Administration at the Department of Commerce. The Office of Defense Trade Controls is responsible for controlling items identified on the U.S. Munitions List⁴ pursuant to the International Traffic in Arms Regulations (ITAR).⁵ The Bureau of Export Administration controls items that are identified on the Commerce Control List⁶ pursuant to the Export Administration Regulations (EAR).⁷ The EAR state that when an export license is issued to a particular person or entity, that person or entity becomes the licensee. The licensee is accountable for the use of the license, whether as a principal (exporting for own account) or as an agent. The licensee assumes responsibility for effecting the export and appropriately using the license and for due performance of all of the license's terms and conditions. Appendix B contains further details on the U.S. Munitions List and Commerce Control List.

In 1995, NASA established an Export Control Program (ECP). The “NASA Export Control Program” pamphlet, dated November 1995 (revised October 1998), establishes policies and procedures on an Agencywide basis to ensure that NASA’s exports and transfers to foreign parties and international activities are consistent with the requirements of the Department of State's ITAR and the Department of Commerce's EAR. NASA contractors are responsible for following the same U.S. export laws and regulations. An essential part of NASA's ECP is the establishment of mechanisms within the Agency (including the Centers) that provide checks and safeguards at key steps in program development and implementation, helping to better manage international program initiatives. Such oversight helps to ensure that NASA export personnel ask the right questions to preclude NASA officials and contractors from effecting transfers that may be contrary to U.S. export controls or that may be inconsistent with requirements of the ITAR and EAR. Absent an effective ECP, NASA and its employees risk violating requirements of the ITAR and EAR which may result in suspension of current or future licensing privileges and criminal, civil, or administrative enforcement action against both Government officials and private contractors.

NASA's Office of External Relations has overall Agency responsibility for ensuring the compliance of all NASA program activities and exports with U.S. export control laws and

⁴ The U.S. Munitions List, April 1999, identifies items designated by the President to be defense articles and services.

⁵ The ITAR provide guidance for controlling the export and import of defense articles and services.

⁶ The Commerce Control List, October 1999, identifies “dual-use” items that have military/strategic and civil applications.

⁷ The EAR implement the export and re-export requirements of the Export Administration Act of 1979.

regulations. NASA Center Directors are responsible for appointing a Center Export Administrator to ensure full compliance of all Center program activities with applicable export laws and regulations.

Current NASA Export Control Guidance

NASA Procedures and Guidelines (NPG) 7120.5A, “Program and Project Management Processes and Requirements,” April 3, 1998, requires program teams to ensure that the Agency’s planned technology exchange and partnership agreements comply with all laws and regulations regarding the transfer of export-controlled and proprietary technologies.

The “NASA Export Control Program,” pamphlet, describes the authorities and responsibilities of applicable NASA Headquarters and Center personnel with regard to export control. The pamphlet requires NASA Program and Project Managers to establish and maintain a list of contractors, approved by the Commerce Department’s Bureau of Export Administration, that have authority to effect exports on NASA’s behalf for specific projects under the EAR, pursuant to specific NASA direction with adequate safeguards against unauthorized transfers or disclosures. In addition, the Center Export Administrator is responsible for assessing and ensuring compliance of all Center program activities with U.S. export control laws and regulations. However, the ECP pamphlet does not clearly define oversight responsibilities of export, program, or contracting personnel with respect to contractors who export controlled technologies in support of NASA programs.

The Director of the Assessments and Technology Division, NASA Office of External Relations, informed us that each time NASA obtains an export license for one of the Centers, the Center receives a cover letter with the license. The letter contains guidance on the use of the license and directs the recipient organization to keep the Assessments and Technology Division apprised of exports effected against the license.

NASA Oversight of Contractor Exports

The NASA OIG conducted an audit to assess Government oversight of contractor processes for exporting controlled technologies. The audit showed that NASA export, program, and contracting personnel at the Goddard Space Flight Center (Goddard), Johnson Space Center (Johnson), and Marshall Space Flight Center (Marshall) could not readily identify the types and amounts of NASA-funded controlled technologies that contractors export in support of NASA programs.⁸ This occurred because NASA’s current export policies do not clearly define the

⁸ We judgmentally selected three NASA programs for review that potentially had exports because of international involvement. Overall management of the individual programs selected was the responsibility of Goddard, Marshall, and Johnson. The programs and the respective contractors were the (1) Earth Observing System (EOS) Common Spacecraft/TRW Space and Electronics Group, (2) Space Shuttle External Tank/Lockheed-Martin Michoud Space Systems, and (3) International Space Station (ISS)/Boeing Space and Communications Group.

Agency's oversight responsibilities regarding its contractors who export controlled technologies. In addition, NASA has not established contract requirements for contractors to notify NASA when they deem it necessary to obtain an export license in furtherance of a NASA program or when exports are effected against those licenses. Consequently, NASA does not have assurance that contractors are exporting controlled technologies in accordance with applicable U.S. export laws and regulations. The lack of oversight may have also resulted in potential export violations by major NASA contractors.⁹

Recommendations and NASA Management's Response

We recommended that management include guidance in either a NASA Federal Acquisition Regulation (FAR) Supplement amendment, Procurement Information Circular, or NPG that all appropriate NASA contracts require the contractors to deliver (1) a plan for obtaining required export licenses to fulfill contract requirements, (2) a listing of the contractor licenses obtained, and (3) a periodic report of the exports effected against those licenses. The guidance should state that contractors should provide these deliverables to at least the Center Export Administrator and other appropriate NASA officials as determined by project management. We also recommended revision of the draft NASA Policy Directive (NPD) 2190¹⁰ to incorporate the oversight responsibilities of appropriate NASA officials for those cases in which NASA or its contractors obtain export licenses in behalf of a NASA program.

Management concurred with both recommendations. The Agency agreed to provide additional guidance through one or more of the recommended means to assure that appropriate contracts contain requirements related to export controls. Management will also ensure that the forthcoming Agency guidance on export control will include the responsibilities of NASA officials as they relate to the use of NASA obtained export licenses.

Contractor Exports of Controlled Technologies

We conducted the audit to determine whether major contractors have established adequate controls over NASA's controlled technologies to preclude unauthorized or unlicensed exports. We found that two of the three major NASA contractors¹¹ we reviewed, TRW Space and Electronics Group (TRW) and Lockheed-Martin Michoud Space Systems (Lockheed-Martin),

⁹ NASA OIG auditors determined that Boeing inadvertently shipped berthing mechanisms for ISS components to foreign entities. Boeing made a voluntary disclosure of the potential export violations to the Commerce Department's Office of Export Enforcement. OIG auditors also determined that Lockheed-Martin may have shipped to a foreign contractor aluminum alloy material that exceeded amounts authorized on its export license by 73,971 pounds and \$292,311. This shipment was made in support of NASA's Space Shuttle External Tank Contract. The Department of State will make the determination as to whether Lockheed-Martin violated the provisions of ITAR with regard to exporting controlled technologies in excess of the amounts authorized by the export license.

¹⁰ The draft directive, "NASA Export Control Program," assigns overall responsibility for the Agency's export control program to various NASA officials.

¹¹ See Appendix C for details on the specific contracts selected for review.

have adequate export control programs in place to ensure that exports of controlled technologies are effected in compliance with applicable laws and regulations. TRW and Lockheed-Martin have (1) developed effective export control policies, (2) established export control training programs, and (3) maintained required export records that were readily available for review. We also found that the third contractor, Boeing Space and Communications Group (Boeing) may not have complied with applicable export laws and regulations when exporting controlled items on behalf of the International Space Station (ISS) Program.¹² Specifically, Boeing was unable to readily produce records related to exports of controlled technologies.¹³ Further, on two of the six¹⁴ NASA-obtained export licenses related to the ISS, Boeing potentially effected exports of controlled technologies beyond the scope of the licenses.¹⁵ Boeing's lack of effective company policies with regard to exports primarily contributed to these areas of potential noncompliance. In addition, NASA does not provide oversight of Boeing's export control program, even though NASA is the licensee for several ISS-related export licenses. NASA, therefore, lacks assurance that Boeing's export activities on behalf of the Agency for the ISS Program are being performed in full compliance with applicable export laws and regulations.

Recommendations and NASA Management's Response

We recommended that management require Boeing to establish an appropriate export control program and a detailed company-wide export policy that comply with all EAR requirements prior to authorizing Boeing to utilize NASA-obtained export licenses on behalf of the ISS program. We also recommended that management direct the ISS Program Office, in coordination with the Center Export Administrator, to periodically review Boeing's and its subcontractors' export control programs to ensure that exports effected against NASA-obtained licenses in support of the ISS Program are being accomplished in accordance with applicable U.S. export laws and regulations.

¹² NASA's ISS contract (NAS15-10000) with Boeing contains a clause that requires Boeing to comply with applicable export laws and regulations. Although Boeing is responsible for complying with applicable export laws and regulations, NASA is responsible for the proper use of any export license that the Agency has obtained and is the identified licensee.

¹³ The EAR, Part 762, "Recordkeeping," requires the retention of records related to individual export licenses and the exports effected against those licenses. Part 762 also states that persons located in the United States may be asked to produce records that are required to be kept by any provision of the EAR, or any license, order, or authorization issued thereunder and to make them available for inspection and copying by any authorized agent, official, or employee of the Bureau of Export Administration, the U.S. Customs Service, or any other agency of the U.S. Government. Because Boeing did not readily provide for our review the records and supporting documentation related to exports effected on NASA licenses in support of the ISS program, the OIG issued a subpoena to Boeing for the records on October 8, 1999.

¹⁴ For the ISS Program, Boeing has effected exports against a total of five NASA-obtained export licenses and one special comprehensive license. NASA and approved, related entities use the special comprehensive license, which eliminates the need for obtaining individual export licenses for every item expected to be exported.

¹⁵ The Department of Commerce's Bureau of Export Administration is the final determinant as to whether a noncompliance with the EAR has occurred.

Management concurred with the recommendations but questioned whether some of the examples detailed in the report were, in fact, export violations. We reaffirmed our position in the final report and stated that the examples of export shipments described in the report could represent possible export violations because of the disparities in explanations provided by management and the inconsistencies in the available supporting documentation.

NASA Management Actions

During the audit, the NASA Contracting Officer for the Boeing ISS Contract notified Boeing that its records related to exports effected on NASA's behalf must be produced for applicable Government agencies to review in accordance with the EAR. The Contracting Officer issued a November 15, 1999, letter to Boeing stating:

With regard to records of exports you effect on NASA's behalf, we require that you ensure that you can produce these records as required by U.S. export regulations. It has come to our attention that your Huntington Beach site was unable to produce records of NASA exports recently in the course of an audit.

After we notified NASA management (during the audit) that several exports effected by Boeing against two NASA-obtained export licenses were in potential noncompliance with the EAR, the Agency took some corrective actions. For example, in March 2000, the Johnson Export Services Team initiated a system to track licensed hardware, software, and data against actual shipping information. This system provides a database for tracking all items on a particular license including authorized quantities and dollar amounts. Upon receipt of shipping documents such as the Shippers Export Declaration, the Export Services Team enters into the database information on dollar amounts and quantities shipped. The database alerts Johnson export officials who use it when the quantities or dollar amounts on the shipping documents exceed the scope of the export license.

Initiatives such as the Johnson database system should help ensure that exports effected against NASA-obtained licenses are in compliance with applicable export laws and regulations. In addition, NASA management has actions planned as a result of the previously discussed OIG audit to improve Agency oversight with respect to contractor exports of controlled technologies. NASA should take further steps¹⁶ to ensure that Boeing and its subcontractors have effective controls in place to make certain that exports effected on NASA-obtained licenses in support of the ISS Program are accomplished in accordance with applicable U.S. export laws and regulations.

¹⁶ We recommended that NASA management ensure that Boeing establishes an appropriate export control program and a detailed company-wide export policy that complies with all EAR requirements. We further recommended that NASA management periodically review Boeing's and its subcontractors' export control programs to ensure export activities in support of NASA programs and on NASA-obtained licenses are carried out in accordance with applicable U.S. export laws and regulations.

Other Audits Related to NASA Export Activities

In a 1999 report, “NASA Control of Export Controlled Technologies,” IG-99-020, March 31, 1999, we noted that NASA had not identified all export-controlled technologies related to its major programs and did not maintain a catalog of classifications for transfers of export-controlled technologies. We also showed that Agency oversight of and training for personnel in the Export Control Program need improvement. Specifically, annual audits of each NASA Center’s export control systems were not adequately performed, and NASA personnel lack training in controlling and documenting export-controlled technologies. The report contains six recommendations to assist NASA in addressing export-controlled technologies. Management concurred with all the recommendations and agreed to develop a catalog of classifications for specific exports, improve training and guidance for Export Control Program auditors, and enhance and strengthen training for NASA employees involved directly or indirectly with technology control.

The General Accounting Office (GAO) report, “Export Controls – International Space Station Technology Transfers,” GAO/NSIAD-00-14, November 1999, also identified concerns with NASA’s export activities. The House of Representatives Committee on Science requested that GAO review NASA’s implementation of Federal export regulations. Since April 1995, the Department of Commerce has issued nine validated licenses to NASA to export specific items and one special comprehensive license. The special comprehensive license allows NASA to export certain preapproved items without seeking Commerce’s approval each time the Agency needs to export them for the ISS program. The Agency used the special comprehensive license only once, even though its purpose was to preclude the need for individual licenses.

The GAO also determined that NASA erroneously authorized the export of radiation-hardened electronic parts to a Russian firm in 1997 without obtaining a license from the Department of State. Further, internal and external reviews of Agency export control activities have identified weaknesses, including a need for greater management involvement in export-related decisions and additional training to educate employees involved with technology control about export laws, regulations, and procedures. The GAO found that NASA has taken steps to correct these weaknesses but that additional actions are required. The GAO made one recommendation aimed at improving the quality of NASA’s internal audits.

Ongoing NASA Actions

NASA management has recognized the importance of having an effective export control program and has been responsive to the recommendations made by the OIG. For example, the Agency has recently updated the NASA FAR Supplement to include a standard contract clause in all NASA contracts requiring contractors to comply with all U.S. export control laws and regulations, including the EAR and ITAR in the performance of their contracts. The clause makes contractors responsible for all regulatory recordkeeping requirements associated with the use of export licenses and for ensuring that associated subcontractors conduct any

export-related activities in accordance with applicable laws and regulations. The updated NASA FAR Supplement also emphasizes considerations of risk management, including export control, as part of the acquisition process.

The Agency has also drafted guidance, an NPD, for the NASA Export Control Program. The NPD assigns responsibility to various Agency officials for ensuring that export activities are carried out in accordance with applicable laws and regulations. The Agency is also preparing other draft guidance, an NPG, that will provide detailed procedures on accomplishing the NASA Export Control Program.

Conclusion

Because of the importance of the export control area, the OIG plans to conduct audit work in FY 2001 in the area of NASA's compliance with export laws and regulations and of deemed exports.¹⁷

¹⁷ Any release to a foreign national of technology or software that is subject to the Export Administration Regulations is "deemed to be an export" to the home country of the foreign national. These exports are commonly referred to as "deemed exports."

Appendix A. Situations in Which NASA's Controlled Technologies are Exported

Situation 1: NASA exports controlled technologies for its behalf. NASA exports controlled technologies on its behalf, usually for in-house programs and projects. In this situation, NASA is the authority of export. NASA is responsible for administration and oversight of the export licenses obtained from either the Department of State or Department of Commerce.

Situation 2: NASA granted license exemptions (Department of State only). In some cases, NASA can grant contractors authorization to export controlled technologies without the contractor having to obtain licenses from the Department of State. As a Government agency, NASA is entitled to certain license exemptions not available to industry. NASA, in turn, utilizes its exemptions to authorize contractors to export controlled technologies for NASA programs. In this situation, the contractor is the authority of export and does not have to obtain approval from the Department of State.

Situation 3: NASA obtains export license and the exporting authority is consigned to contractors. NASA obtains export licenses and consigns the authority to effect the export to contractors. For certain programs, such as the International Space Station (ISS), NASA can obtain a single or special comprehensive export license from the Department of Commerce. This process enables the contractor to export controlled technologies to NASA's international partners pursuant to NASA contract direction. In this situation, NASA typically will obtain the export licenses for those programs with heavy international involvement. NASA is the authority of export and is responsible for administration and oversight of the license.

Situation 4: Contractor obtains export license from the Departments of State or Commerce for NASA-funded programs. Contractors directly obtain the export licenses for controlled technologies to be transferred to foreign entities. In this situation, the contractor is the authority of export. The contractor is also responsible for administration of the export license.

Situation 5: Contractor obtains export license from the Departments of State or Commerce for NASA-funded technologies exported commercially. For certain programs such as the ISS, the contractor has authority to commercially market ISS hardware and software containing NASA-funded controlled technologies. In this situation, the contractor obtains the export license, is the authority of export, and is responsible for administration of the export license.

Appendix B. Laws, Regulations, and Guidance Relating to Controlled Technologies

Arms Export Control Act, 22 U.S.C. § 2778. The Arms Export Control Act authorizes the President to control the export of defense articles and services. This authority has been delegated to the Department of State, which implements the Act through the ITAR. Defense articles and services subject to the Act are identified in broad categories on the United States Munitions List. Violations of the Act are punishable by debarment; fines of up to \$500,000; and imprisonment for up to 10 years.

Export Administration Act of 1979, as amended, 50 U.S.C., Appendix 2401-2420. The Export Administration Act is a legal authority underlying the Export Administration Regulations.

U.S. Export Administration Regulations (EAR), 15 Code of Federal Regulation (CFR), Part 730. The Commerce Department's Bureau of Export Administration issues the EAR under laws relating to the control of exports and re-exports. The EAR were designed to implement the Export Administration Act of 1979. The term "dual-use" distinguishes the types of items covered by the EAR from those covered by regulations of certain other U.S. Government departments and agencies with export licensing responsibilities. The term dual-use also distinguishes EAR-controlled items that can be used both in military and other strategic uses and in civil applications from those that are weapons and for military-related use or designs and are subject to the controls of the Department of State. The export items are classified in at least 1 of the 10 categories of the Commerce Control List:

- Category 0 - Nuclear Materials, Facilities and Equipment, and Miscellaneous
- Category 1 - Materials, Chemicals, Microorganisms, and Toxins
- Category 2 - Materials Processing
- Category 3 - Electronics
- Category 4 - Computers
- Category 5 - Telecommunications and Information Security
- Category 6 - Lasers and Sensors
- Category 7 - Navigation and Avionics
- Category 8 – Marine
- Category 9 – Propulsion Systems, Space Vehicles, and Related Equipment

International Traffic in Arms Regulations (ITAR), 22 CFR, Parts 120-130. The Bureau of Political-Military Affairs, Office of Defense Trade Controls, Department of State, issues the ITAR to control the export and import of defense articles and defense services. The President shall designate the articles and services deemed to be defense articles and services. These defense articles and services constitute the U.S. Munitions List, a subpart of the ITAR. The intended use of the article or service after its export is

not relevant in determining whether the article or service is subject to the controls of the ITAR. The defense articles or services fall into 1 of the 21 categories of the U.S. Munitions List:

- Category 1 - Firearms
- Category 2 - Artillery Projectors
- Category 3 - Ammunition
- Category 4 - Launch Vehicles, etc.
- Category 5 - Explosives, Propellants, Incendiary Agents, and Their Constituents
- Category 6 - Vessels of War and Special Naval Equipment
- Category 7 - Tanks and Military Vehicles
- Category 8 - Aircraft and Associated Equipment
- Category 9 - Military Training Equipment
- Category 10 - Protective Personnel Equipment
- Category 11 - Military Electronics
- Category 12 - Fire Control, Range Finder, Optical and Guidance and Control Equipment
- Category 13 - Auxiliary Military Equipment
- Category 14 - Toxicological Agents and Equipment and Radiological Equipment
- Category 15 - Spacecraft Systems and Associated Equipment
- Category 16 - Nuclear Weapons Design and Related Equipment
- Category 17 - Classified Articles, Technical Data, and Defense Services Not Otherwise Enumerated
- Category 18 - Reserved
- Category 19 - Reserved
- Category 20 - Submersible Vessels, Oceanographic, and Associated Equipment Category
- Category 21 - Miscellaneous Articles

Appendix C. Contracts Selected for Review

We reviewed the following contracts as part of the audit to determine whether major contractors have established adequate controls over NASA's controlled technologies to preclude unauthorized or unlicensed exports.

Contractor/Contract Number	Description/Value	Location of Performance	Cognizant NASA Center
Boeing Missiles and Space Division, NAS5-10000	International Space Station Alpha Program \$7.1 billion	Houston, TX Huntington Beach, CA Huntsville, AL Canoga Park, CA	Johnson
TRW, NAS5-32954	Earth Observing System Common Spacecraft \$396 Million	Redondo Beach, CA	Goddard
Lockheed-Martin Michoud Space Systems, NAS8-36200	Space Shuttle External Tanks \$3.7 billion	New Orleans, LA	Marshall

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