

GAO

Report to the Chairman, Subcommittee
on National Security, Veterans Affairs,
and International Relations, Committee
on Government Reform, House of
Representatives

September 2002

EXPORT CONTROLS

Department of Commerce Controls over Transfers of Technology to Foreign Nationals Need Improvement





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Highlights of [GAO-02-972](#), a report to the Chairman of the Subcommittee on National Security, Veterans Affairs, and International Relations; Committee on Government Reform; House of Representatives.

Why GAO Did This Study

Countries that pose national security concerns to the United States could upgrade their military forces with U.S. civilian technologies. The Department of Commerce deems certain domestic transfers of such technologies to foreign nationals to be exports. U.S. firms may be required to obtain a “deemed export” license before they may transfer technology to foreign national employees. GAO was asked to assess Commerce efforts to ensure that firms (1) apply for these licenses when required to do so and (2) comply with security conditions in the licenses.

What GAO Found

Vulnerabilities in the Department of Commerce’s deemed export control system could help China and other countries of concern improve their military capabilities. GAO found two key weaknesses.

- To detect foreign nationals potentially subject to deemed export licensing, Commerce annually screens tens of thousands of overseas visa applications selected by Department of State visa officials. However, GAO found that this screening process does not include thousands of immigration change-of-status applications from foreign nationals already in the United States who may seek work in U.S. high tech firms.
- Because it rejects very few deemed export license applications, Commerce relies on security conditions in the licenses to help ensure that foreign nationals do not obtain unauthorized access to controlled technologies. These conditions are jointly developed by Commerce, the Department of Defense, and other agencies involved in the licensing process. However, GAO found that Commerce does not have an effective monitoring program in place to determine whether firms comply with these conditions.

What GAO Recommends

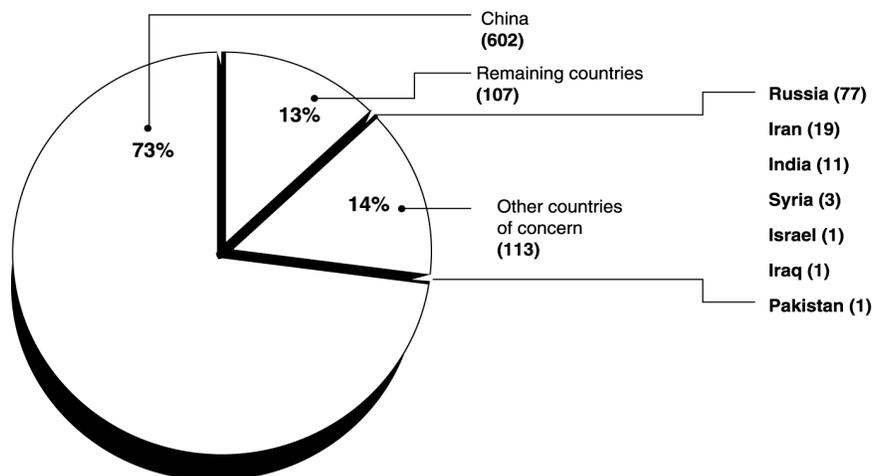
The Secretary of Commerce should

- use all existing U.S. immigration data to identify foreign nationals who could be subject to deemed export licensing requirements and
- work with the departments of Defense, State, and Energy to develop a risk-based program for monitoring compliance with deemed export licenses.

Although Commerce asserted that it has an effective monitoring system, it stated that it would explore the practicality of GAO’s recommendations. The Department of Defense concurred with GAO’s recommendations.

These weaknesses call for a reexamination of the current approach to controlling foreign national access to technology in the United States.

China and 7 Other Countries of Concern Accounted for Most of the 822 Deemed Export Licenses that the Department of Commerce Approved in Fiscal Year 2001.



Source: GAO analysis of Department of Commerce data.

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Abbreviations

DOD	Department of Defense
INS	Immigration and Naturalization Service



United States General Accounting Office
Washington, D.C. 20548

September 6, 2002

The Honorable Christopher Shays
Chairman
Subcommittee on National Security, Veterans Affairs,
and International Relations
Committee on Government Reform
House of Representatives

Dear Mr. Chairman:

To protect its national security and foreign policy interests, the United States controls exports of certain civilian technologies that have military uses. U.S. firms may be required to obtain a license from the Department of Commerce before exporting these “dual-use” technologies from the United States to many other countries, including countries of concern.¹ Commerce regulations also deem domestic transfers of controlled dual-use technologies to citizens of these countries to be exports. As a result, Commerce may require firms that employ foreign nationals working with these technologies in this country to obtain “deemed” export licenses. Foreign nationals in the United States must also conform to U.S. visa and immigration regulations.

In response to your request that we examine controls over deemed exports, we (1) identified the licensing and visa requirements that should be met for a foreign national to work with controlled technology in the United States, (2) determined the number and nature of licenses approved by Commerce in fiscal year 2001, (3) assessed Commerce’s efforts to ensure that firms are applying for deemed export licenses as required, and (4) evaluated Commerce’s efforts to ensure that firms comply with the deemed export licenses they receive. To address these objectives, we reviewed laws and procedures governing deemed export licensing and visa issuance, analyzed deemed export licensing records contained in Commerce’s export licensing database, and compared data obtained from the Immigration and Naturalization Service to that used by Commerce to detect unlicensed deemed exports. We also interviewed Commerce officials in Washington, D.C. and at its enforcement field offices; the Immigration and

¹For this report, we have relied on Department of State guidance for reviewing visa applications in defining China, Cuba, India, Iran, Iraq, Israel, Libya, North Korea, Pakistan, Russia, Sudan, and Syria as countries of concern.

Naturalization Service; the Department of State; the Department of Defense, including the Defense Intelligence Agency; and selected private firms that have received deemed export licenses or that employ foreign nationals. Our scope and methodology are described in greater detail in appendix I.

Results in Brief

To work with controlled dual-use technologies in the United States, foreign nationals and the firms that employ or sponsor them must comply with U.S. export control and visa regulations. The firms should, in many cases, hold a deemed export license and the foreign nationals should have an appropriate visa classification, such as an H-1B specialized employment classification. Commerce issues deemed export licenses to firms that employ or sponsor foreign nationals after consulting the departments of Defense, State, and Energy. Deemed export licenses are generally valid for 2 years and comprise almost 10 percent of all export licenses approved by Commerce. An H-1B classification allows a U.S. employer to fill a specialty occupation with a foreign worker. The Department of State issues H-1B visas to foreign nationals residing outside the United States, while the Immigration and Naturalization Service (INS) approves requests from foreign nationals in the United States to change their immigration status to H-1B.

In fiscal year 2001, Commerce approved 822 deemed export license applications and rejected 3. Most of the approved licenses allowed foreign nationals from countries of concern to work with advanced computer, electronic, or telecommunication and information security technologies in the United States. China accounted for 73 percent of licenses approved in fiscal year 2001. Russia, Iran, India, Syria, Israel, Iraq, and Pakistan accounted for another 14 percent, collectively. Not all domestic transfers of controlled technology to foreign nationals require a license. For example, certain types of dual-use technology and software may be provided to foreign nationals from India, Pakistan, and Israel without a license. Also, research that will be disseminated publicly is exempt from export controls.

To better direct its efforts to detect possible unlicensed deemed exports, in fiscal year 2001 Commerce screened thousands of applications for H-1B and other types of visas submitted by foreign nationals overseas. From these applications, it developed 160 potential cases for follow-up by enforcement staff in the field. However, we identified two shortcomings in these efforts. First, Commerce did not screen thousands of H-1B change-of-status applications submitted domestically to INS for foreign nationals

already in the United States. We found that in fiscal year 2001 about 15,000 individuals from countries of concern changed their immigration status to obtain jobs that could have involved controlled technology. Second, Commerce could not readily track the disposition of the 160 cases referred to field offices for follow-up because it lacks a system for doing so. As a result of these shortcomings, Commerce may be missing opportunities to detect firms that should have applied for deemed export licenses.

Commerce attaches security conditions to almost all licenses to mitigate the risk of providing foreign nationals with controlled dual-use technologies. However, according to senior Commerce officials, Commerce staff do not regularly visit firms to determine whether these conditions are being implemented because of competing priorities, resource constraints, and inherent difficulties in enforcing several conditions. For example, they asserted that their staff (1) does not have the technical expertise to determine if a foreign national has helped design semiconductors that exceed a certain technology threshold and (2) cannot monitor intangible technology transfers, such as those that may occur in a foreign national's conversations with fellow employees. Department of Defense (DOD) officials asserted that these conditions are critical to DOD's willingness to accept many deemed export license applications.

In this report, we recommend that the Secretary of Commerce use available INS data to identify foreign nationals potentially subject to deemed export licensing requirements. We also recommend that the Secretary of Commerce—in consultation with the Secretaries of Defense, State, and Energy—establish a risk-based program to monitor compliance with deemed export license conditions that draws upon the full range of technical expertise available to the Secretary. If the secretaries conclude that enforcement of certain security conditions is not practical, we recommend that they jointly develop conditions that are enforceable or devise alternative methods to ensure that deemed exports do not place U.S. national security interests at risk.

In commenting on a draft of this report, DOD stated that it concurred with our recommendations. Commerce stated that it would consult with other departments on the practicality of implementing the recommendations. Commerce stated that it would contact INS to explore ways of referring to Commerce H-1B change-of-status applications involving employment that might result in access to sensitive technology. In response to a recommendation in our draft report, Commerce also stated that it would

establish a new database by the end of calendar year 2002 that will allow its analysts to check on the status of their field office referrals.

Commerce also said that it is developing a more extensive monitoring program for firms that have been issued deemed export licenses, although it disagreed with our assessment that it currently lacks an effective monitoring process. It asserted that Commerce staff monitor the submission of required internal control plans by firms and contact firms who fail to submit these documents. It further asserted that it would continue to visit select firms to monitor compliance with license conditions. We do not agree with Commerce's assessment of the effectiveness of its monitoring process. Commerce's process is essentially limited to administrative checks by headquarters staff to determine whether firms have submitted required paperwork. We found no evidence that Commerce selects and visits certain firms for the purpose of verifying compliance with deemed export license conditions. As a result, we believe our recommendation that Commerce establish a risk-based program to monitor compliance is still appropriate.

Background

Under the Export Administration Act of 1979² as amended and the implementing Export Administration Regulations, Commerce is authorized to require firms to seek licenses for exports of dual-use technologies that pose national security or foreign policy concerns. Such technologies could be used by countries of concern to upgrade their military capabilities. The Commerce Control List identifies technologies that must be licensed before they can be exported to specific countries, including technologies associated with certain nuclear materials, facilities, and equipment; chemicals, "microorganisms" and toxins; materials processing; electronics; computers; telecommunications and information security; lasers and sensors; navigation and avionics; marine systems; and propulsion systems and space vehicles. Violators may face administrative or criminal

²Although the act has expired, export regulations have been extended through executive orders, of which Executive Order 13222 (August 17, 2001) is the most recent.

penalties, including fines, denial of export privileges, and imprisonment.³ The act defines exports to include transfers of technology within the United States to (1) affiliates of controlled countries or (2) persons with the knowledge or intent to transfer the technology to unauthorized parties.⁴ According to Commerce regulations, a transfer of technology within the United States to a foreign national who is not a permanent resident of the United States is deemed to be an export.⁵ Such a “deemed export” may occur when a foreign national visits or works in the United States and accesses controlled dual-use technology. Access can include opportunities to review written materials or discussions about controlled technologies.

In 2000, Commerce’s Inspector General concluded that compliance with deemed export licensing regulations appeared lax.⁶ The Inspector General pointed out that the number of foreign workers authorized to enter the United States using certain specialty employment visas was far larger than the number of deemed export license applications received by Commerce in fiscal year 1999.

³Export Administration Regulations, part 764.3.

⁴50 U.S.C. Appendix, section 2415 (5).

⁵Export Administration Regulations, part 734.2(b)(1). Part 772 of the Export Administration Regulations defines “technology” as specific information necessary for the “development,” “production,” or “use” of a product. Congress is currently considering legislation that would, among other things, (1) define an export to be the release of an item—i.e., any good, technology, or service—to a foreign national within or outside the United States and (2) require the Secretary of Commerce, in concurrence with the Secretaries of State and Defense to issue regulations governing such exports (H.R. 2581, section 2(9)(iii) and 601(c)(3)).

⁶U.S. Department of Commerce, Office of Inspector General, *Bureau of Export Administration: Improvements Are Needed in Programs Designed to Protect Against the Transfer of Sensitive Technologies to Countries of Concern*, IPE-12454-1, March 2000.

Export Licensing and Visa Regulations Impose Requirements on Foreign Nationals Working in the United States

To work with controlled dual-use technology in the United States, foreign nationals and the firms that employ or sponsor them must comply with U.S. export control and visa regulations. Commerce, in consultation with other departments, is responsible for issuing deemed export licenses to firms that employ or host foreign nationals. While the Department of State is responsible for issuing visas to foreign nationals outside the United States, INS is responsible for approving requests from foreign nationals in the United States seeking to change their immigration status.

Deemed Export Licensing Regulations Govern a Foreign National's Access to Controlled Technology

The review process for a deemed export license application parallels the review process for an application for a license to export commodities or technologies overseas. Under U.S. export control regulations, a firm is required to seek a deemed export license if the export of the technology to the foreign national's country of citizenship would require a license. If a license is required, the exporter must submit a license application to Commerce identifying the technology, the reason it is controlled, the proposed destination, and the intended end user. In the case of deemed export license applications, firms must also provide the foreign national's resume, visa type, and a list of his or her publications. An application for a deemed export license may list more than one foreign national.

Under Executive Order 12981, the departments of State, Defense, and Energy have the authority to review license applications (unless they decline) to help Commerce determine whether a license would be in the best interests of the United States. Based on their review, an application may be rejected, approved, approved with conditions, or returned without action. Commerce officials stated that they consider evidence of the foreign national's intent to remain in the United States in assessing deemed export license applications. For example, they asserted that they consider the presence of family members in the United States or a stated intention to apply for permanent residency in the United States as a factor in granting a license. Deemed export licenses are generally valid for 2 years. Almost 10 percent of all export licenses approved by Commerce authorize deemed exports.

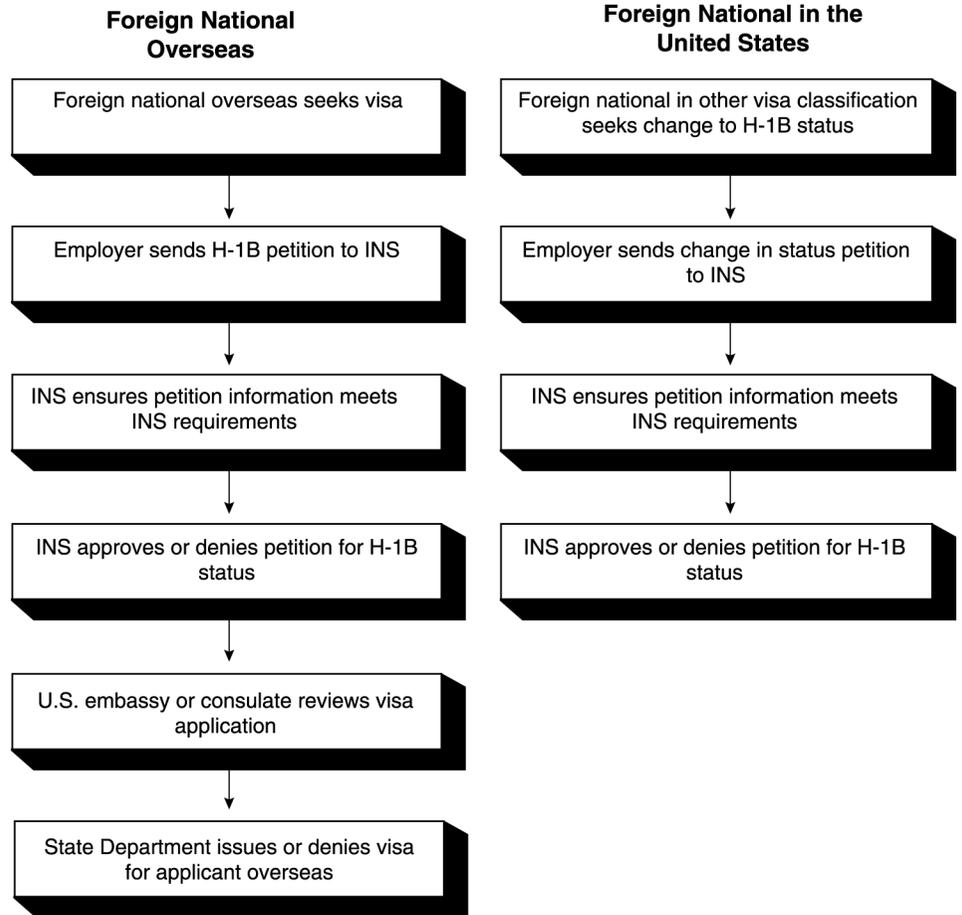
Visa and Immigration Process Managed by the Department of State and the Immigration and Naturalization Service

The U.S. government requires foreign nationals from most countries to obtain visas before entering the country. Requirements for obtaining a visa vary, depending on the purpose of the trip and the nationality of the person seeking the visa. Typically, a foreign national begins the process by submitting a visa application to the Department of State, generally through a U.S. overseas post. The application requires, among other items, information regarding his or her nationality, education, employment history, purpose of visit, and if seeking employment, the sponsor. The Department of State is responsible for determining the applicant's eligibility and issuing the visa. State personnel at U.S. embassies and consulates overseas may interview applicants to determine their eligibility to enter the United States. According to the Department of State, in fiscal year 2001, it adjudicated 10.6 million nonimmigrant visa applications at 196 posts and issued 7.6 million visas.

Many foreign nationals seeking to work in the United States apply for H-1B specialty employment visas. An H-1B visa allows a U.S. employer to temporarily fill specialty occupations (such as those requiring electrical or software engineers) with foreign workers.⁷ A foreign national overseas may obtain an H-1B visa from the Department of State, if INS determines that an employer may import the foreign national as a temporary worker (see fig. 1). A foreign national already in the United States may have his or her immigration status changed to H-1B by INS. For example, an employer seeking to hire a foreign student who has graduated from a U.S. college or university could petition INS to change the foreign national's immigration status from student to H-1B. INS is solely responsible for approving and issuing such changes in status.

⁷The H-1B process is described in greater detail in *H-1B Foreign Workers: Better Controls Needed to Help Employers and Protect Workers*, GAO/HEHS-00-157, September 7, 2000.

Figure 1: Processes for Obtaining an H-1B Visa Overseas and for Changing Immigration Status to H-1B in the United States



Source: GAO analysis of INS and Department of State information.

Commerce Approves Most Deemed Export License Applications

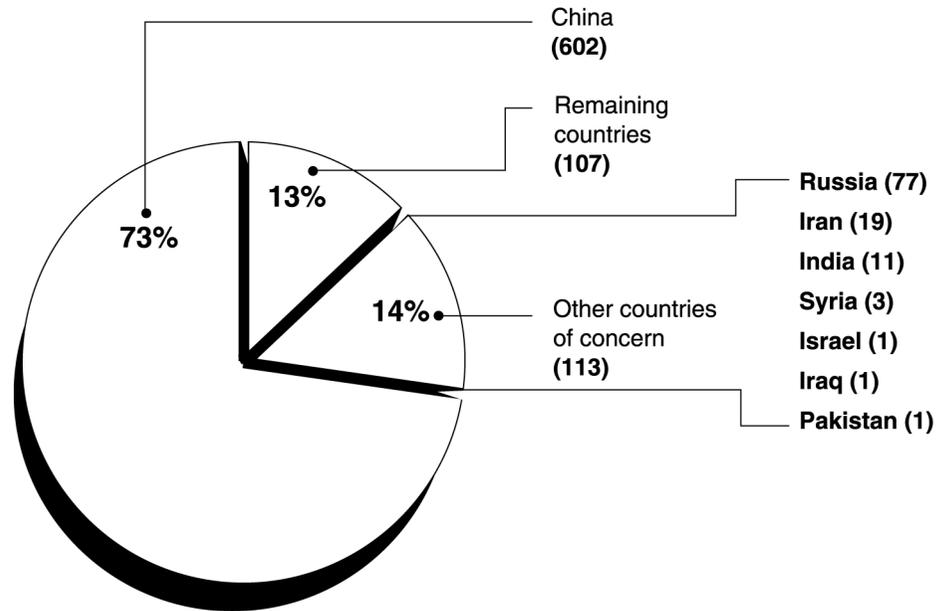
In fiscal year 2001, Commerce approved 822 deemed export license applications and rejected 3.⁸ Each license authorized one or more foreign nationals to access controlled dual-use technology.⁹ Our analysis of Commerce's licensing data found that most licenses approved in fiscal year 2001 involved countries of concern.¹⁰ As shown in figure 2, China accounted for 73 percent of licenses approved in fiscal year 2001. Seven other countries of concern—Russia, Iran, India, Syria, Israel, Iraq, and Pakistan—accounted for another 14 percent. The remaining 13 percent involved 29 other countries, including the United Kingdom, Germany, Bulgaria, Romania, and Ukraine.

⁸Commerce also returned 98 applications without action. In over 70 percent of these cases, Commerce informed the applicant that a license was not required or returned a duplicate application. In the remaining cases, the application was returned because it did not include all needed data or the applicant requested its return.

⁹Commerce officials estimated that a single deemed export license could include ten or more individuals. They asserted that they could not readily determine the exact number of foreign nationals named in the licenses because of limitations in the department's automated export-licensing database.

¹⁰Given that U.S. export controls are focused on countries of concern, the majority of licenses should involve such countries.

Figure 2: Deemed Export Licenses Approved by Country in Fiscal Year 2001

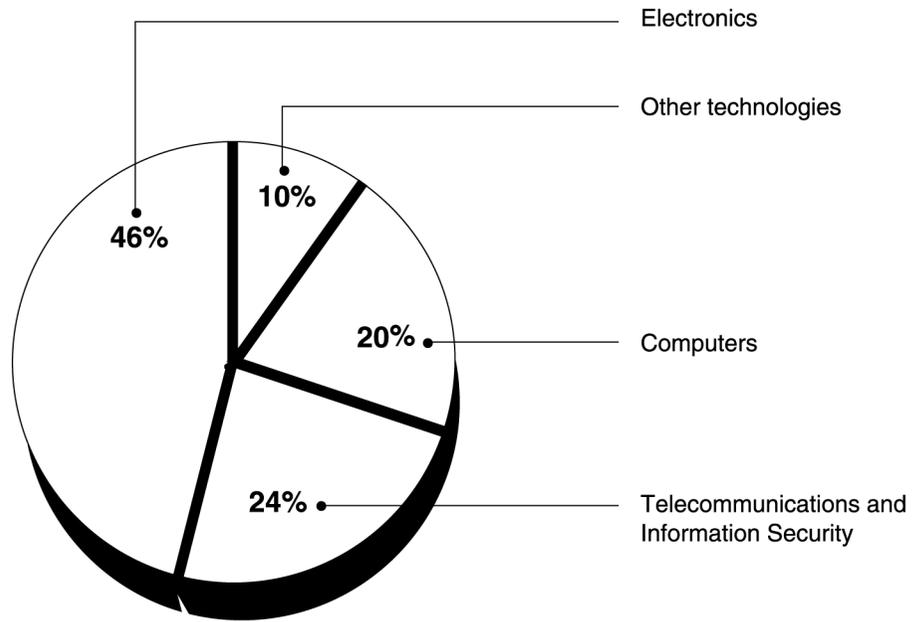


Source: GAO analysis of Commerce data.

About 90 percent of the licenses approved in fiscal year 2001 authorized foreign nationals to work with advanced electronics, computer, or telecommunications and information security technologies (see fig. 3).¹¹ Electronics technologies constituted the largest single share at 46 percent. Telecommunications and information security technologies accounted for another 24 percent. Computer technologies were included in 20 percent of the licenses approved.

¹¹A single license can include multiple technologies. As a result, the total number of technologies authorized exceeds the total number of approved licenses.

Figure 3: Technologies Listed in Deemed Export Licenses Approved in Fiscal Year 2001



Source: GAO analysis of Commerce data.

The most common country-technology combination for deemed export licenses involved China and electronics technologies. About 44 percent of all licenses approved in fiscal year 2001 authorized citizens of China to work with electronics technologies, including semiconductor technology.¹²

Not all domestic transfers of technology to foreign nationals require a deemed export license. For example, one exception allows technology and software controlled only for national security purposes to be accessed without a license by foreign nationals from countries of concern such as India, Pakistan, and Israel.¹³ Under this exception, a firm employing an Indian software engineer would not need a deemed export license to allow him or her access to controlled dual-use technology. The exception does

¹²Semiconductors include discrete items (such as transistors) and integrated circuits comprising millions of transistors and other conductors.

¹³Export Administration Regulations, part 740.6.

not apply to technology and software that are also controlled for other reasons, such as antiterrorism or nuclear nonproliferation. Also, foreign nationals who engage in research that is or will be publicly available are exempted from export controls. For example, a U.S. university would not need a deemed export license to allow a Chinese graduate student to engage in technological research if the results of that research are to be published in a professional journal. A U.S. firm that hired the same Chinese national to engage in proprietary research to develop a new commercial product would not qualify for this exception.

Commerce's Efforts to Detect Unlicensed Deemed Exports Do Not Use All Available Sources of Data

To better direct its efforts to detect possible unlicensed deemed exports, Commerce screens applications for H-1B and other types of visas submitted overseas and develops potential cases for enforcement staff in the field. However, it does not screen H-1B change-of-status applications submitted domestically to INS for foreign nationals already in the United States. Also, Commerce cannot readily track the disposition of potential cases referred to the field.

Commerce Screens Visa Data from the Department of State but Does Not Screen Potentially Useful INS Data

To identify potential unlicensed deemed exports and opportunities to educate firms about deemed export licensing requirements, Commerce screens visa applications it receives from U.S. posts overseas.¹⁴ In fiscal year 2001, Commerce analysts reviewed about 54,000 such applications for various visa types.¹⁵ According to Commerce guidance, the analysts consulted Commerce's enforcement database, DOD comments on rejected license applications, and other sources of information to detect linkages between foreign entities of concern and visa applicants.

Commerce does not screen data on foreign nationals already in the United States who change their immigration status to H-1B specialty employment. Commerce and INS officials stated that Commerce does not obtain information on foreign nationals who seek a change in immigration status.

¹⁴To help prevent high technology information from being transferred from the United States to countries of concern, embassy and consulate staff may refer a visa application to Commerce for review and input if they conclude the application meets certain criteria. Such criteria include the involvement of a country of concern or the applicant's background in engineering, physics, or other specific technical fields.

¹⁵State and Commerce officials asserted that their data retrieval systems do not allow them to readily determine how many of the 54,000 applications were for H-1B visas.

INS has data available on foreign nationals who change their status to H-1B. Our analysis of INS's H-1B data indicates that during fiscal year 2001 at least 15,000 foreign nationals from countries of concern potentially subject to deemed export licensing requirements changed their immigration status to H-1B specialty employment.¹⁶ Our estimation of 15,000 individuals only includes foreign nationals who sought H-1B status for employment related to science and technology. It does not include other nonsensitive H-1B fields, such as fashion modeling, architecture, and accounting.

Commerce Analysts Cannot Assess the Impact of Their Screening Efforts

In fiscal year 2001, Commerce analysts screened about 54,000 visa applications received from overseas posts. Their efforts resulted in the referral of 160 potential cases to Commerce's eight enforcement field offices. Commerce staff stated that field offices conduct some limited follow-up enforcement and outreach activities in response to such referrals. These activities include meetings with firms and individuals to determine if the firms should have applied for a deemed export license.¹⁷ Commerce enforcement officials could not provide us with complete information regarding the disposition of these 160 potential cases.¹⁸ Commerce does not have a mechanism for its field enforcement staff to report the results of their reviews of these cases back to headquarters. As a result, its analysts in headquarters cannot determine if their screening methods are effective in targeting potential deemed export cases. Commerce plans to install a new computerized database by the end of 2002 that would correct this problem by allowing headquarters staff to track the disposition of cases referred to field enforcement staff.

¹⁶These individuals may not have been screened by Commerce when they first entered the United States using another visa type. For example, U.S. embassy and consulate officials overseas are not required to identify undergraduate or master's level students for such screening.

¹⁷At some of the firms we visited, we observed that officials were not fully aware of the potential need to apply for a deemed export license.

¹⁸Commerce officials were able to develop limited information regarding some of these cases in response to our requests. For example, they identified three cases in which the screening process and subsequent enforcement actions resulted in warning letters to firms.

Commerce Does Not Ensure Compliance with License Conditions

Commerce does not determine whether firms comply with license conditions intended to limit transfers of controlled dual-use technology to foreign nationals. Commerce officials stated that ensuring such compliance is a low priority and that they cannot readily enforce conditions included in licenses.

Deemed Export Licenses Are Generally Approved with Security Conditions

Almost all deemed export licenses include security conditions. According to DOD officials, these conditions are needed to mitigate the risk to U.S. national security posed by providing controlled dual-use technology to a foreign national. These officials stated that the conditions are crucial to DOD's willingness to agree to many deemed export license applications. Without these conditions, DOD would recommend that Commerce reject many deemed export license applications.

Commerce uses several of these conditions to limit the level of technology to which foreign nationals may be exposed. For example, standard conditions bar foreign nationals from

- unmonitored use of high-performance computers,
- involvement in the design of computers that exceed a specified performance limit,
- accessing technical data on advanced microprocessors¹⁹ or certain types of lithography equipment,²⁰ or
- accessing classified data or munitions data licensed by the Department of State.

The licensing conditions were first formulated in 1997 by an interagency group that included representatives of the departments of Commerce,

¹⁹A microprocessor is a large-scale integrated circuit formed on a piece of material known as a semiconductor. The sophistication of a microprocessor is measured in terms of how small its key features are, as measured in microns. A micron is one millionth of a meter or one one-thousands of the width of a human hair.

²⁰Lithography is a manufacturing process used to imprint circuits on semiconductor materials.

Defense, State, and Energy. The departments of Commerce and Defense currently maintain updated lists of 12 standard conditions for deemed exports involving (1) semiconductors (electronics) and computers and (2) telecommunications. According to Commerce officials, the departments may add conditions or adjust the standard conditions to accommodate specific circumstances.

A firm may also be required to monitor the immigration status of the foreign employee and to document whether the foreign national leaves the firm before becoming a permanent resident of the United States. The firm is also required to develop security procedures for ensuring compliance with conditions in the approved license and to provide copies of these procedures to Commerce.

Other executive branch agencies rely on Commerce to ensure that firms comply with these conditions. DOD's copy of the standard license conditions specifies that Commerce "will monitor [these conditions] to ensure that the applicant's compliance is effective." Identical language is included in many deemed export licenses. Officials from the departments of Defense and State stated that they presumed that Commerce is acting to ensure compliance with the security conditions.

Commerce Does Not Monitor Compliance with License Conditions

Commerce does not have an effective monitoring system in place to ensure compliance with key deemed export license conditions, such as a program of regular visits to firms.²¹ Staff at the department's enforcement field offices stated that they rarely visit firms to ensure compliance with deemed export license conditions. In addition, officials at the private sector firms we visited confirmed that Commerce officials rarely conduct on-site verifications of their compliance with licensing conditions. Commerce officials agreed that they do not have an effective monitoring system in place and that their compliance efforts are limited to checking if firms have submitted their security procedures to the department.

Commerce officials stated that they consider ensuring compliance with deemed licensing conditions to be a relatively low priority for their

²¹In contrast, Commerce employs on-site visits overseas to verify that exported dual-use items are used in compliance with license conditions. During fiscal years 1997 through 2001, the department scheduled more than 3,500 post-shipment verification visits in more than 90 countries, including almost 900 in China.

resources compared to other demands, including activities to combat terrorism. They stated that the export licensing system is based on the assumption that firms are honest. These officials also asserted that almost all of the foreign nationals covered by deemed export licenses have indicated that they plan to remain in the United States, although they could not provide us with data on repatriations to support this assertion. Commerce officials also stated that prosecutors are reluctant to pursue criminal cases based on technical violations of license conditions. However, they acknowledged that Commerce could use the results of on-site visits as the basis for imposing administrative sanctions and denying future license applications.²²

Commerce officials also asserted that some conditions are not readily enforceable. They maintained that some involve highly technical matters that do not fall within the training provided to Commerce enforcement personnel. For example, Commerce officials stated that enforcement staff would be unable to determine whether the feature size of a semiconductor is smaller than the micron limit specified in one license condition. Similarly, Commerce officials asserted that enforcement personnel would be unable to verify compliance with conditions that proscribe intangible transfers of technology, such as conversations between foreign nationals and their coworkers.

Conclusions

Commerce's deemed export licensing system does not provide adequate assurance that U.S. national security interests are properly protected. Key vulnerabilities in the licensing process could help countries of concern advance their military capabilities by obtaining sensitive dual-use technology. Because Commerce does not review all relevant visa and immigration data, it may overlook foreign nationals potentially subject to deemed export licensing requirements. Because Commerce rejects very few deemed export license applications, executive branch agencies must therefore rely on security conditions to help ensure that the licenses approved—more than 90 percent of which involve China and other countries of concern—do not allow foreign nationals unauthorized access to controlled technologies. However, Commerce does not have a monitoring process in place to ensure compliance, thus undermining the value of the conditions. These weaknesses call for a reexamination of the

²²Such penalties are provided for in Export Administration Regulations, part 764.3(a).

current approach to limiting foreign national access to controlled technology in the United States.

Recommendations

We recommend that the Secretary of Commerce work with INS to use all existing U.S. government data in its efforts to identify all foreign nationals potentially subject to deemed export licensing requirements. We also recommend that the Secretary of Commerce—in consultation with the Secretaries of Defense, State, and Energy—establish a risk-based program to monitor compliance with deemed export license conditions. In doing so, the Secretary of Commerce should draw upon the full range of technical expertise available to him, including that within the department or elsewhere in the federal government. If the secretaries of these agencies conclude that certain security conditions are impractical to enforce, we recommend that they jointly develop enforceable conditions or alternative methods to ensure that deemed exports do not place U.S. national security interests at risk while promoting U.S. commercial interests.

Agency Comments

We provided a draft of this report to the Secretaries of Commerce, Defense, and State, and to the INS Commissioner for their review and comment. We received written comments from the departments of Commerce and Defense that are reprinted in appendixes II and III.²³

DOD concurred with our recommendations, and Commerce said it would consult with other relevant departments on the practicality of implementing our recommendations. More specifically, Commerce stated that it would contact INS to discuss the possibility of establishing a procedure for referring to Commerce H-1B change-of-status applications involving employment that might result in access to sensitive technology. It also stated that it is in the process of developing a more extensive monitoring program for firms that have been issued deemed export licenses. Commerce said it is currently impossible to fully monitor all of the conditions placed on these licenses and agreed that more realistic conditions need to be developed. It also said that it has initiated an interagency dialogue to develop a new set of standard conditions for deemed export licenses. In response to a recommendation in the draft

²³The Department of State declined to provide comments. INS provided us with certain technical suggestions, which we have incorporated into this report.

report, Commerce stated that its new Investigation Management System would establish a system for tracking referrals to its enforcement field offices once it becomes operational at the end of calendar year 2002. It subsequently provided us with documentation on the new tracking system.

However, Commerce disagreed with our assessment that it lacks an effective monitoring process. It stated that Commerce staff monitor the submission of required internal control plans by firms and contact firms who fail to submit these documents. Commerce also stated that it would continue to visit select firms to monitor compliance with license conditions. In addition, it stated that the vast majority of individuals applying for H-1B visas would not be employed in jobs that would give them access to technology controlled under U.S. export control laws. Commerce stated that INS regulations permit the issuance of H-1B visas to foreign nationals seeking employment in such fields as fashion modeling, architecture, and accounting. It said that the likelihood of foreign nationals working in such fields requiring deemed export licenses is remote. Given Commerce's limited resources, and the large number of H-1B applications filed annually, it questioned whether it was feasible for Commerce analysts to perform a second comprehensive review (in addition to INS's own review) of each such INS file.

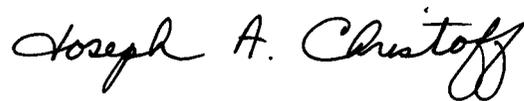
We disagree with Commerce's assertions regarding the effectiveness of its monitoring process. As noted in our report, Commerce's monitoring process is essentially limited to administrative checks by headquarters staff to determine whether firms have submitted required paperwork. We found no evidence that it selects and visits certain firms to verify compliance with deemed export license conditions. As a result, our recommendation that Commerce develop a risk-based program to monitor compliance is still appropriate.

We agree with Commerce's concern that it should not review immigration change-of-status applications of foreign nationals who are seeking employment in fields that are unlikely to involve controlled technology. Anticipating such concerns, we had specifically targeted technology-related occupations—and excluded nonsensitive fields, such as modeling, architecture, and accounting—in developing our estimate of 15,000 foreign nationals. We have included language in this report describing how we developed this estimate.

We are sending copies of this report to appropriate congressional committees and to the Secretary of Commerce, the Secretary of Defense, the Secretary of State, and the Commissioner of the Immigration and Naturalization Service. Copies will be made available to others upon request. In addition, this report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me on (202) 512-8979. Another GAO contact and staff acknowledgments are listed in appendix IV.

Sincerely,

A handwritten signature in black ink that reads "Joseph A. Christoff". The signature is written in a cursive style with a large, stylized 'C' at the end.

Joseph A. Christoff, Director
International Affairs and Trade

Scope and Methodology

To describe the deemed export license process, we reviewed laws and procedures governing export controls; attended Department of Commerce export licensing workshops in Boise, Idaho and Los Angeles, California; and interviewed Commerce officials. To learn about the process for reviewing and approving visa applications overseas, we reviewed Department of State documents that describe the process for issuing visas and provide guidance for referring applications. We also interviewed State officials. To understand the specialty employment (H-1B) and change-of-status processes, we met with officials from the Immigration and Naturalization Service (INS). They described the process and procedures for obtaining an H-1B petition and for changing immigration status while in the United States.

To determine the number and nature of deemed export license applications approved by Commerce, we obtained and analyzed information included in Commerce's licensing database for fiscal year 2001. The data were extracted based on the date of final action on each license. We analyzed the data to determine the number of applications that Commerce approved, rejected, or returned without action. We also determined which countries and technologies were included in the approved applications. All of our analyses were dependent on the reliability of Commerce's licensing database. We did not attempt to independently verify the accuracy of the database or the data that it contains.

To review Commerce's efforts to detect unlicensed deemed exports, we relied on INS data on H-1B applications granted in fiscal year 2001. We developed this data by asking INS to determine the number of changes-of-status to H-1B that involved (1) occupational codes related to science and technology and (2) countries of concern. We did not independently confirm the accuracy of INS data. Although we recognize that foreign nationals with immigration classifications other than H-1B may be subject to the deemed export licensing requirements, we did not attempt to incorporate other classifications into our analysis. We also identified and interviewed 15 firms that employed foreign nationals but did not have a deemed export license. To better understand the Commerce program for detecting unlicensed deemed exports, we reviewed Commerce program guidance. We also interviewed Commerce officials associated with the review effort.

To evaluate Commerce's efforts to ensure compliance with approved licenses, we obtained copies of the standard conditions from both Commerce and the Department of Defense (DOD) and reviewed license conditions as recorded in Commerce's licensing database. We also

interviewed officials of 11 firms that have received deemed export licenses and met with Commerce licensing and enforcement officials. To obtain detailed information on enforcement activities, we interviewed special agents of all eight Commerce enforcement field offices. To better understand the rationale for the conditions, we spoke with officials at DOD and the Department of State, including analysts at the Defense Intelligence Agency and policy officials from the Defense Technology Security Agency.

We conducted our review from November 2001 through August 2002 in accordance with generally accepted government auditing standards.

Comments from the Department of Commerce

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary for Export Enforcement
Washington, D.C. 20230

August 19, 2002

Mr. Joseph A. Christoff
Director, International Affairs and Trade
General Accounting Office
Washington, D.C. 20548

Dear Mr. Christoff:

This is in response to your request for comments on the General Accounting Office's (GAO's) report entitled "Export Controls: Commerce Department Controls Over Transfers of Technology to Foreign Nationals Need Improvement," GAO Code 320090. We appreciate the opportunity to review the draft report.

The Department of Commerce's comments on the draft report are enclosed, and we will consult with other relevant Departments on the practicality of implementing the recommendations of the GAO.

Sincerely,

A handwritten signature in black ink, appearing to read "MJG", written over a light blue horizontal line.

Michael J. Garcia

Enclosure

U.S. Department of Commerce
Comments on the General Accounting Office Draft Report
Export Controls: Commerce Department Controls Over
Transfers of Technology to Foreign Nationals Need Improvement
(GAO Code 320090)

The Department of Commerce requests that the report be revised to reflect the following points.

1. As noted in discussions with GAO representatives, the Department of Commerce has already initiated interagency discussions to develop a new set of standard conditions that would attach to deemed export licenses. As part of this effort, Commerce is reviewing conditions currently being imposed based on a number of criteria, including difficulties in enforcing such conditions.

See comment 1.

2. Deemed export licenses may include many foreign nationals on a single license, not “one to five” as stated in the footnote on page 10 of the draft report. In fact, a number of license applications submitted during the time period examined by GAO covered ten or more foreign nationals.

See comment 2.

3. The pie chart titled “Deemed Export Licenses Approved by Country in Fiscal Year 2001” is misleading. That chart groups under a single category – “Other countries of concern” – seven countries that together account for 14 percent of all deemed export licenses issued in Fiscal Year 2001. However, these countries raise vastly different levels of concern from a U.S. export control and national security perspective. Some (such as Iraq) are state sponsors of terrorism; others (such as Israel) are close U.S. allies. Two-thirds of the licenses issued to foreign nationals from countries in this group in fact relate to nationals from a single country – Russia – that is a U.S. partner in international export control regimes and an ally in the war against terrorism.¹ Taken together, approvals for Russia (77), Israel (1), Pakistan (1), and India (11) – countries with which the United States maintains good relations – account for 11 percent of the 822 deemed export approvals for FY 2001; approvals for Syria (3), Iraq (1), and Iran (19) only account for 3 percent.

More generally, the chart and report suggest that most deemed export licenses issued involved countries of concern. The report should acknowledge that this is not surprising because U.S. export controls are – appropriately – focused on countries of concern, and not suggest that the majority of technology transfers in the United States involve citizens from countries of concern. For citizens of countries in North America, Western Europe, and other close allies, such foreign citizens do not normally require deemed export licenses.

See comment 3.

4. The report states that “Commerce does not have a monitoring process in place to ensure compliance, thus undermining the value of the [deemed export license] conditions.” It is true that it is currently impossible to fully monitor all of the conditions placed on these licenses – by the various agencies involved in the licensing process – and that more realistic conditions need to be developed. As noted above, Commerce has initiated an interagency dialogue to develop a new set of standard conditions that would attach to deemed export licenses.

¹ Even this proportion is probably low because Russian nationals in particular have often been grouped by certain applicants as multiple consignees on single deemed export licenses.

**Appendix II
Comments from the Department of
Commerce**

However, we disagree with the suggestion that Commerce currently does not have an effective monitoring process in place. In fact, all approved licenses that require a company to submit internal control program plans or other reports are monitored by Commerce Department employees. These employees call the company when the condition has not been met. When necessary, a second request for compliance is made in writing. Companies that fail to respond are reported to the Office of Export Enforcement for further investigation.

Commerce is in the process of developing a more extensive monitoring program for firms that have been issued deemed export licenses. As the GAO report notes, more than 800 deemed export licenses were granted in fiscal year 2001. Given Commerce's limited enforcement and outreach resources, it would not be feasible to visit all the firms that were issued these licenses. Instead, Commerce will continue to visit select companies to monitor compliance with license conditions.

5. As noted in the report at page 3, Commerce currently screens information related to certain visa applications submitted by foreign nationals seeking entry to the United States. In fact, the Department screened approximately 54,000 such applications in fiscal year 2001. The group of applicants reviewed by the Department of Commerce was a small percentage of total visa applications; it consisted of applications believed to be of highest potential concern. However, Commerce has no role in approving visas. That responsibility rests with the State Department and Immigration and Naturalization Service (INS). Commerce's role in the visa review process is limited to reviewing such data as a source of investigative leads related to potential violations of the deemed export regulations.

The GAO report recommends that Commerce expand its visa review program to include more than 15,000 applications submitted to the INS each year by foreign nationals of countries of concern, in the United States, seeking an adjustment to H1B visa status.

As a preliminary matter, we believe that the GAO report should note that the vast majority of individuals applying for H1B visas would not be employed in jobs that would give them access to technology controlled under U.S. export control laws. INS regulations specify that H1B visas may be issued to foreign nationals seeking to work in such fields as fashion modeling, architecture, medicine and health, education, accounting, law, theology, and the arts. The likelihood of foreign nationals working in such fields requiring deemed export licenses is remote.

Given Commerce's limited resources, and the large number of H1B applications filed annually, it is not feasible for Commerce analysts to perform a second comprehensive review (i.e., in addition to INS's own review) of each such INS file. Moreover, reviewing applications of foreign nationals seeking employment in non-sensitive fields would be a less-than-optimal use of already scarce Commerce enforcement resources. Nonetheless, Commerce will contact the INS to discuss the possibility of a procedure for INS referring to Commerce those targeted applications involving employment that might result in access to sensitive technology.

6. The draft GAO report recommends that Commerce establish a tracking system that will allow it to identify for follow-up the disposition of visa cases referred to field offices. In fact, such an electronic "Investigation Management System" has been developed and will be operational by the end of calendar year 2002.

Now on pp. 3 and 4.

See comment 4.

See comment 4.

See comment 5.

Appendix II
Comments from the Department of
Commerce

The new system will enable visa review analysts to check on the status of field office investigations using the case number assigned when the analyst opened the case. This new system will include access to any reports of interviews generated as a result of the initial lead. Moreover, the system will contain a reporting feature that will allow the users to generate reports on the dispositions of visa review leads.

The GAO report suggests that its personnel required additional documentation concerning the new system. If GAO is uncomfortable with the representations made concerning the capabilities of the new system, we invite it to follow up with the designer and the coordinator for enforcement prior to issuing a final GAO report.

The following are GAO's comments on the Department of Commerce's letter dated August 19, 2002.

GAO Comments

1. We have modified our report to reflect Commerce's comment. Our draft report's statement that a deemed export license typically covers one to five individuals was based on an estimate provided to us by the head of Commerce's deemed export licensing unit. As noted in our draft report, Commerce could not readily determine the total number of individuals included in all deemed export licenses due to limitations in its automated database.

2. We agree that the countries depicted in the chart may represent different levels of concern from a foreign policy and national security standpoint. However, we used the Department of State's guidance for screening technology-related visa applications to develop a list of countries of concern. According to guidance sent to all diplomatic and consular posts, particular attention is given to cases involving nationals of countries designated as state sponsors of terrorism—Cuba, Libya, Iran, Iraq, North Korea, Sudan, and Syria—or a region subject to the Nonproliferation Export Control regulations—China, India, Israel, Pakistan, and Russia.

We have added information in this report to note Commerce's observation that most deemed export licenses involve countries of concern, given that U.S. export controls focus on such countries.

3. We do not agree that Commerce has an effective process in place to monitor compliance with license conditions. We found Commerce's current process to be inadequate for two reasons: (1) it is essentially limited to administrative checks by headquarters staff to determine whether firms have submitted the required paperwork; and (2) it does not include a program for conducting on-site visits to confirm that firms are complying with license conditions. Accordingly, we have maintained our draft recommendation that Commerce develop a risk-based monitoring program.

4. Our estimate of 15,000 H-1B change-of-status applications only represents individuals seeking employment in technology-related occupations. It does not include nonsensitive fields, such as modeling, architecture, and accounting, as Commerce notes in its comments. We therefore targeted our analysis to applications involving employment that might result in access to sensitive technology that Commerce should

control through its deemed export process. We have modified the language of our report to clarify how we developed this estimate.

5. In response to our recommendation in the draft report that Commerce establish a system for tracking visa cases referred to the field offices, Commerce provided us with documentation of the new case management system's capabilities. Based on our review of documents describing the case-tracking capability of the new system, we have not included this recommendation in our final report.

Comments from the Department of Defense



POLICY

OFFICE OF THE UNDER SECRETARY OF DEFENSE
2000 DEFENSE PENTAGON
WASHINGTON, DC 20301-2000

AUG 13 2002

I-02/011336

Mr. Joseph A. Christoff
Director, International Affairs and Trade
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Christoff:

This responds to the GAO draft report, "EXPORT CONTROLS: Commerce Department Controls Over Transfers of Technology to Foreign Nationals Need Improvement," dated August 1, 2002 (GAO Code 320090/GAO-02-972).

The Department of Defense (DoD) concurs with both GAO's recommendations.

Consistent with the second recommendation, DoD reviews deemed exports based on the technology involved, its military utility, the likelihood of diversion, and assessment of the home country of the foreign nationals involved. Based on such assessments, we manage the risk by recommending denial or approval with appropriate conditions to the license to restrict access. We use Advisory Committee on Export Policy (ACEP) agreed baseline deemed export conditions, and in consultation with the interagency, we conduct periodic reviews of case-specific revisions to conditions for deemed export licenses. If license officers cannot agree to conditions tailored within the framework of the baseline deemed export conditions, the interagency dispute resolution process is triggered to reach agreement.

Thank you for the opportunity to comment on this draft report.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Lisa Bronson", with a horizontal line extending to the right.

Lisa Bronson
Deputy Under Secretary of Defense,
Technology Security Policy and
Counterproliferation

GAO Contact and Staff Acknowledgments

GAO Contact

Steve Lord (202) 512-4379

**GAO
Acknowledgments**

In addition to the individual named above, Pierre Toureille, Lynn Cothorn, Julie Hirshen, Richard Slade, and Jennifer Li Wong made key contributions to this report.

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