
2017 REPORT ON FOREIGN POLICY-BASED EXPORT CONTROLS

U.S. Department of Commerce Bureau of Industry and Security

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CHAPTER 1

Introduction

Export controls maintained for foreign policy purposes require annual extension according to the provisions of Section 6 of the Export Administration Act of 1979, as amended¹ (the EAA). Section 6(f) of the EAA requires the President to submit a report to Congress to extend the controls. Authority to submit the report has been delegated to the Secretary of Commerce.² Section 6(f) of the EAA requires the report to specify the determinations or considerations of the Secretary (as delegated by the President) with respect to the criteria set forth in Section 6(b) of the EAA established for imposing, extending, or expanding foreign policy controls. This report complies with all of the requirements set out in the EAA for extending, amending, or imposing foreign policy-based export controls.

The EAA has been in lapse since August 20, 2001. The Department of Commerce is acting under the authority conferred by Executive Order 13222 of August 17, 2001 (Executive Order), as extended most recently by a Presidential Notice of August 4, 2016, 81 Fed. Reg. 52585 (August 8, 2016). In Executive Order 13222, the President invoked his authority, including authority under the International Emergency Economic Powers Act (IEEPA), to continue in effect the system of controls that had been maintained under the EAA. Under a policy of conforming actions under the Executive Order to those under the EAA, the Department of Commerce is following the provisions of Section 6 of the EAA with regard to extending foreign policy-based export controls.

The Department of Commerce extends with this report all foreign policy export controls described in this report for the period from January 21, 2017, through January 20, 2018. The Department takes this action pursuant to the recommendation of the Secretary of State. As further authorized by the EAA, foreign policy export controls remain in effect for replacement parts and for parts contained in goods subject to such controls. The controls administered in accordance with procedures established pursuant to Section 309(c) of the Nuclear Nonproliferation Act of 1978 similarly remain in effect.

Each chapter of this report describes a particular category of foreign policy controls and delineates modifications that have taken place over the past year. Although this report covers the 2016 calendar year, the statistical data presented in the report is based on fiscal year 2016 export licensing statistics, unless otherwise noted. The Department's Bureau of Industry and Security (BIS) generates this data from the computer system it uses to process and track export license activity. The data included may over count a small number of licenses because the computer system has some limitations in tabulating the occasional license application listing more than one Export Control Classification Number (ECCN) or country of destination. In addition, BIS bases the data in this report on values contained in issued export licenses. Such values may not

¹ 50 U.S.C. §§ 4601-4623 (Supp. III 2015).

² Executive Order 12002 (July 7, 1977) (as amended).

represent the values of actual shipments made against those licenses because an exporter ultimately might not export all the items described in an application during the typical four year validity period of the license.

Some goods, technology, and software described in this report require licenses to export for national security purposes in accordance with Section 5 of the EAA.

Part I: Highlights from 2016

Embargoes, Sanctions, and Other Special Controls

On December 17, 2014, the President announced that the United States is taking steps to chart a new course in bilateral relations with Cuba and to further engage and empower the Cuban people. The President explained that these steps build upon actions taken since 2009 that have been aimed at supporting the ability of the Cuban people to gain greater control over their own lives and determine their country's future. BIS published three rules in 2016 to further implement the President's new approach to Cuba policy. On January 27, 2016, BIS revised the licensing policy for exports and re-exports to Cuba. BIS published a second rule on March 16, 2016, that made additional revisions to the licensing policy and certain license exceptions for Cuba. On October 17, 2016, BIS published a third rule that expanded the scope of certain license exceptions that are available for Cuba. These amendments are described in further detail in Chapter 5.

On December 27, 2016, BIS amended the EAR to move Burma from Country Group D:1 to Country Group B, as well as removing the licensing requirement for Burmese nationals, formerly listed among the Office of Foreign Assets Control's Specially Designated Nationals and Blocked Persons. The amendment permits Burma to be an eligible destination for an increased number of license exceptions. The amendment implements revocation of three prior Executive Orders and is in response to the elections held in Burma in November 2015, which resulted in the election of a majority of representatives from the National League of Democracy, thus ensuring the formation of a democratically elected, civilian-led government.

Toxic Chemicals, Chemical Precursors, Biological Agents and Associated Equipment, Technology, and Software

On June 7, 2016, the Department of Commerce published a final rule amending the Commerce Control List (CCL) to implement decisions made by the Australia Group. The rule is described in further detail in Chapters 6 and 7.

Missile Technology Controls

In 2016, the Missile Technology Control Regime adopted new control language in the regime's Equipment, Software, and Technology Annex, which will necessitate amendments to the EAR. The proposed modifications are discussed in Chapter 8.

Nuclear Nonproliferation Controls

Presentations by the Nuclear Suppliers Group in June 2016 addressed concerns regarding nonproliferation, Iran and North Korea's nuclear programs and export control. Additional topics of discussion are described in Chapter 11.

Entity List

BIS added entities to and removed entities from the Entity List, which is located in Supplement No. 4 to Part 744 of the EAR. These entities are described in further detail in Chapter 13.

Effective Enforcement of Controls

The Export Enforcement arm of BIS protects and promotes U.S. national security, foreign policy and economic interests by educating parties to export transactions on how to improve export compliance practices and identify suspicious inquiries, supporting the export licensing process by evaluating the bona fides of transaction parties, conducting end-use checks, interdicting illegal exports, investigating violations, and referring violators of export control laws for administrative penalties or criminal prosecution. Export Enforcement at BIS has evolved over the past 30-plus years into a sophisticated law enforcement agency, with criminal investigators and enforcement analysts who are singularly focused on export enforcement and work closely with licensing officers within a single bureau of the government. Using its subject matter expertise in the area of export controls, coupled with its unique administrative enforcement tools, Export Enforcement leverages its relationships with partner law enforcement agencies and industry to maximize its impact.

BIS conducted a number of enforcement actions regarding noncompliance with foreign-policy based export controls. The following three cases are among the most significant.

Arc Electronics Inc. / Apex System L.L.C

Controlled Microelectronics to Russian Military and Intelligence Agencies

On October 26, 2015, after a month-long trial, Alexander Posobilov, Shavkat Abdullaev, and Anastasia Diatlova were convicted of conspiring to export, and illegally exporting, controlled microelectronics to Russia. Posobilov was also convicted of money laundering conspiracy. The defendants, all of whom worked at Arc Electronics Inc., a Houston, Texas-based corporation, and eight other individuals were originally charged in October 2012 related to a scheme to illegally export sophisticated technology to Russia, much of which was destined for Russian

military and intelligence agencies. Between approximately October 2008 and October 2012, these defendants and their co-conspirators obtained advanced microelectronics valued at over \$30 million from manufacturers and suppliers located within the United States and exported those goods to Russia. These commodities have applications, and are frequently used, in a wide range of military systems, including radar and surveillance systems, missile guidance systems and detonation triggers. On October 9, 2012, BIS added 164 persons and companies to its Entity List for allegedly engaging in this illegal export scheme. The case resulted from a joint investigation involving OEE's Dallas Field Office, the Federal Bureau of Investigation (FBI), Naval Criminal Investigative Service (NCIS), and the Internal Revenue Service (IRS). More detailed information on this case is located in Chapter 13.

Sihai Cheng

Pressure Transducers to Iran via China

On January 27, 2016, Sihai Cheng, a Chinese national, was sentenced in U.S. District Court for the District of Massachusetts to nine years in prison in connection with the export of pressure transducers to Iran. From February 2009 through at least 2011, Cheng, and his co-defendants conspired with each other and others in the People's Republic of China and Iran to illegally obtain hundreds of U.S.-manufactured pressure transducers controlled for nuclear nonproliferation and anti-terrorism reasons and export them to Iran. Initially, the parts were exported to China using fraudulently obtained U.S. Department of Commerce export licenses. When they arrived in the China, Cheng inspected them in the Shanghai Free Trade Zone and removed their U.S. manufacturer serial numbers to conceal the fact that he was violating U.S. law. Cheng then caused the pressure transducers to be exported to Iran knowing that the parts were being supplied to the Government of Iran. Pressure transducers can be used in gas centrifuges to enrich uranium and produce weapons-grade uranium. This was a joint investigation with OEE's Boston Field Office, the FBI, and ICE. More detailed information on this case is located in Chapter 11.

Fokker Services B.V.

Aircraft Parts, Technology and Services to Iran and Sudan

This case resulted in June 2016 in a settlement agreement under which Netherlands-based aerospace provider Fokker Services B.V. (FSBV) agreed to pay a civil penalty of \$10,500,000. FSBV also accepted responsibility for its criminal conduct in violating the International Emergency Economic Powers Act and entered into a deferred prosecution agreement with the Department of Justice. As part of that agreement, FSBV also paid \$10,500,000 to satisfy a forfeiture obligation. Between July 2005 and September 2010, FSBV repeatedly engaged in illegal transactions involving the export and re-export of aircraft parts, technology, and services controlled for national security, missile technology and anti-terrorism reasons to Iran and Sudan, while fully aware, including the company's senior management and its legal and compliance departments, of the applicability of U.S. export control laws, including the EAR. The knowing and willful violations included FSBV's sale and transfer to and servicing for end users in Iran, including Iranian military end users, of parts and components used in aircraft avionics and

navigation systems and in engine, communications, and other aircraft systems, as well as other parts and components. This was a joint investigation with OEE's Boston Field Office, the FBI, U.S. Immigration and Customs Enforcement (ICE), Defense Criminal Investigative Service (DCIS), and the Office of Foreign Assets Control (OFAC). More detailed information on this case is located in Chapter 5.

Part II: Format of Analysis Used in Chapters 2-13 of this Report

Chapters 2-13 of this report describe the various export control programs maintained by the Department of Commerce for foreign policy reasons. Each of these programs is extended for another year. The analysis required for such an extension is provided in each chapter in the format described below.

Export Control Program Description and Licensing Policy

This section defines the export controls maintained for a particular foreign policy purpose that were imposed or extended for the year 2016. Each of the following chapters describes the licensing requirements and policy applicable to a particular control.

Analysis of Controls as Required by Section 6(f) of the Act

Section 6(f)(2) of the EAA requires that the Secretary of Commerce describe the purpose of the controls and consider or determine whether to impose, expand, or extend foreign policy controls based on specified criteria, including consultation efforts, economic impact, alternative means, and foreign availability. For each control program, the Department of Commerce's conclusions are based on the following required criteria:

A. The Purpose of the Controls

This section provides the foreign policy purpose and rationale for each particular control.

B. Considerations and Determinations of the Secretary of Commerce

This section describes the Secretary's determinations and considerations regarding the following criteria:

- 1. Probability of Achieving the Intended Foreign Policy Purpose.*** Whether such controls are likely to achieve the intended foreign policy purpose in light of other factors, including the availability from other countries of the goods or technology subject to control, and whether the foreign policy purpose can be achieved through negotiations or other alternative means.
- 2. Compatibility with Foreign Policy Objectives.*** Whether the controls are compatible with the foreign policy objectives of the United States and with the overall U.S. policy towards the country or regarding the proscribed end use that is subject to the controls.

3. ***Reaction of Other Countries.*** Whether the reaction of other countries to the extension of such export controls by the United States is likely to render the controls ineffective in achieving the intended foreign policy purpose or to be counterproductive to other U.S. foreign policy interests.

4. ***Economic Impact on United States Industry.*** Whether the effect of the controls on the export performance of the United States, its competitive position in the international economy, the international reputation of the United States as a reliable supplier of goods and technology, or the economic well-being of individual U.S. companies exceeds the benefit to U.S. foreign policy objectives.³

5. ***Effective Enforcement of Controls.*** Whether the United States has the ability to enforce the controls. Some enforcement issues are common to all foreign policy controls. Other enforcement issues are associated with only one or a few controls.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

This section reflects consultations on the controls with countries that cooperate with the United States on multilateral controls and with other countries as appropriate.

E. Alternative Means

This section specifies the nature and results of any alternative means attempted to accomplish the foreign policy purpose, or the reasons for extending the controls without attempting any such alternative means.

F. Foreign Availability

This section considers the availability from other countries of goods or technology comparable to those subject to the proposed export control. It also describes the nature and results of the efforts made pursuant to Section 6(h) of the EAA to secure the cooperation of foreign governments in controlling the foreign availability of such comparable goods or technology. In accordance with

³ Limitations exist when assessing the economic impact of certain controls because of the unavailability of data or because of the influence of other factors, e.g., currency values, foreign economic activity, or foreign governments, that may restrict imports of U.S. products more stringently than the United States restricts exports.

the EAA, foreign availability considerations do not apply to export controls in effect prior to June 12, 1985, to export controls maintained for internationally recognized human rights and antiterrorism reasons, or to export controls maintained in support of the international obligations of the United States.

CHAPTER 2

Crime Controls/Human Rights Controls (Sections 742.7, 742.11, 742.17)⁴

Export Control Program Description and Licensing Policy

As required by Section 6(n) of the Export Administration Act of 1979, as amended (EAA), the United States, in support of human rights, controls the exports and re-exports of crime control and detection items throughout the world. As set forth in the EAR, the U.S. Government requires a license to export most crime control and detection instruments, equipment, related technology, and software to all destinations other than Australia, India, Japan, New Zealand, and members of the North Atlantic Treaty Organization (NATO). Additionally, a license is required to export certain crime control items, including restraint type devices (such as handcuffs) and discharge type arms (such as stun guns), to all destinations except Canada. Specially designed implements of torture (such as thumbscrews) and equipment designed for the execution of human beings, which are included in the crime control category, require a license for export to all destinations. In addition, the U.S. Government maintains concurrent export license requirements for certain crime control items in furtherance of the Inter-American Convention Against the Illicit Manufacturing of and Trafficking in Firearms, Ammunition, Explosives, and Other Related Materials.

Licensing Policy

The U.S. Government considers applications for most crime control items favorably, on a case-by-case basis, unless there is civil disorder in the country or region of concern, or there is evidence that the government may have violated human rights. The judicious use of these controls is intended to deter the development of a consistent pattern of human rights abuses, distance the United States from such abuses, and avoid contributing to civil disorder in a country or region. The U.S. Government maintains a general policy of denial for specially designed implements of torture, regardless of the intended destination.

People's Republic of China (PRC)

Following the 1989 military assault on demonstrators by the PRC government in Tiananmen Square, the U.S. Government imposed constraints on the export to the PRC of certain items on the CCL. Section 902(a)(4) of the Foreign Relations Authorization Act for Fiscal Year 1990-1991, Public Law 101-246, suspends the issuance of licenses under Section 6(n) of the EAA for the export of any crime control or detection instruments or equipment to the PRC. The President may terminate the suspension by reporting to Congress that the PRC has made progress on

⁴ Citations following each of the foreign policy control programs refer to sections of the Export Administration Regulations (EAR), 15 CFR Parts 730-774, that describe the control program.

political reform or that it is in the national interest of the United States to terminate the suspension. The President has not exercised his authority to terminate this suspension.

NATO

Certain crime control and detection instruments, equipment, related technology, and software may be exported to Australia, India, Japan, New Zealand, and members of NATO without a specific license, consistent with Section 6(n) of the EAA. In addition, most crime control items are eligible for export to 36 destination countries, including NATO members, under License Exception Strategic Trade Authorization (STA), pursuant to a waiver of the EAA's license requirements, under Section 6(n) of the EAA.

Organization of American States Member Countries

In April 1999, the Department of Commerce published a rule implementing the provisions of the Organization of American States (OAS) Model Regulations for the Control of the International Movement of Firearms. The Department of Commerce designed these regulations to harmonize import and export controls on the legal international movement of firearms among OAS member states and to establish procedures to prevent the illegal trafficking of firearms among these countries.

Under these provisions, the Department of Commerce maintains foreign policy controls on exports of Commerce-controlled firearms, including shotguns with a barrel length of 18 inches or over and certain parts, shotgun shells and parts, and optical sighting devices to all OAS member countries, including Canada. Items subject to these controls are identified by "FC Column 1" in the "License Requirements" section of the corresponding ECCN. In support of the OAS Model Regulations for the Control of the International Movement of Firearms, the U.S. Government requires an Import Certificate (IC) for the export to OAS member countries of those items affected by the regulations. In general, the Department approves license applications for the export of firearms to OAS member countries if the applications are supported by ICs or an equivalent document. The Department denies applications that involve end uses linked to drug trafficking, terrorism, international organized crime, and other criminal activities.

Other Licensing Considerations

The Department of State annually compiles for submission to Congress the Country Reports on Human Rights Practices. The Department of State prepares these reports in accordance with Sections 116(d) and 502B(b) of the Foreign Assistance Act of 1961. The factual information presented in these reports is a significant element in dual use export licensing recommendations made by the Department of State. In accordance with the Foreign Assistance Act, the Department of Commerce denies license applications to export crime control items to any country whose government engages in a consistent pattern of violations of internationally recognized human rights.

Applications to export crime control items to countries that are not otherwise subject to economic sanctions or comprehensive embargoes, but that are identified by the Department of State as human rights violators, receive additional scrutiny in the license review process. The Department of State reviews all license applications for these countries on a case-by-case basis and makes recommendations to Commerce. Additionally, targeted sanctions maintained by the Department of the Treasury's Office of Foreign Assets Control (OFAC) are currently imposed against certain countries and individuals.

The International Religious Freedom Act of 1998 (IRFA) calls upon the President to take diplomatic or other appropriate action with respect to any country that engages in or tolerates violations of religious freedom. IRFA provides for the imposition of economic measures or commensurate actions when a country has engaged in systematic, ongoing, egregious violations of religious freedom accompanied by flagrant denials of the rights to life, liberty, or the security of persons, such as torture, enforced and arbitrary disappearances, or arbitrary prolonged detention. For such countries, IRFA provides that the Department of Commerce, with the Department of State's concurrence, shall restrict exports of items on the CCL for reasons of crime control or detection, and require export licenses for items that are being used, or are intended for use, directly and in significant measure, to carry out particularly severe violations of religious freedom. In addition, IRFA requires that countries engaging in particularly severe violations of religious freedom be designated as Countries of Particular Concern.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

These controls seek to ensure that U.S.-origin crime control and detection items are not exported to countries where governments fail to respect internationally recognized human rights or where civil disorder is prevalent. Denial of export license applications for crime-controlled items to such countries helps to prevent human rights violations and clearly signals U.S. concerns about human rights in these countries. The license requirements for most destinations allow close monitoring of exports of crime control items that could be misused to commit human rights violations. Controls on implements of torture similarly help to ensure that such items are not exported from the United States.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose and that the foreign policy purpose cannot fully be achieved through negotiations or other alternative means. The lack of complementary controls over all of these crime control items by other producer nations limits the effectiveness of these controls in preventing human rights violations, although some countries – notably those of the European Union (EU) – control exports of implements of torture and of lethal items. However, U.S. unilateral controls restrict human rights violators' access to U.S.-origin crime control items and provide important evidence of U.S.

support for the principles of human rights. In addition, stringent licensing requirements for crime control items enable the U.S. Government to closely monitor items that could be used to violate internationally-recognized human rights.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that crime controls are compatible with U.S. foreign policy objectives and that the extension of this control program will not have significant adverse foreign policy consequences. This control program is fully consistent with U.S. policy in support of internationally recognized human rights, as expressed by successive Administrations and by Congress.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. These controls are unique, serve a distinct foreign policy purpose, and arise out of deeply-held convictions of the United States. Currently, other countries do not have completely equivalent controls, but many have restrictions on exports of lethal products to destinations of civil unrest.

4. *Economic Impact on U.S. Industry.* The Secretary has determined that any detrimental effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives.

In fiscal year 2016, the Department of Commerce approved 2,994 export license applications for crime control items, which were valued at \$1.5 billion. Another 275 applications for crime control items were returned without action, valued at nearly \$58.8 million, and an additional 51 applications were denied, with a total value of \$98.5 million. These controls have a limited economic impact that is outweighed by the foreign policy objectives they advance.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. Crime control items and implements of torture are easily recognizable and do not present special enforcement problems related to detecting violations or verifying use. However, enforcement cooperation with other countries generally is difficult in cases involving unilaterally controlled items such as these, and often depends on the type and quantity of goods in question. BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

BIS conducted a number of recent enforcement actions regarding noncompliance with these export controls, including:

Shehzad John

Rifle scopes to Pakistan

In September 2013, Shehzad John attempted to export assault rifles, 9mm pistols, scopes, and laser sights to Pakistan aboard a commercial airliner without the required export licenses. The rifle scopes, classified under ECCN 0A987, were controlled for crime control reasons. John was arrested at JFK airport in November 2014 and indicted in April 2015. On January 11, 2016, John pled guilty in connection with the illegal export of optical rifle sights. On August 1, 2016, John was sentenced in U.S. District Court for the Southern District of New York to 71 months in prison, three years of supervised release, a \$10,000 criminal fine, and a \$100 special assessment. This case resulted from a joint investigation conducted by OEE's New York Field Office, ICE, and the Bureau of Alcohol, Tobacco, Firearms and Explosives.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

Most other countries that supply crime control and detection items have not imposed similar export controls. The United Kingdom and Canada maintain controls similar to U.S. controls on certain crime control commodities. Certain European Union member states prohibit or impose a license requirement on the export of dual-use items not covered by the multilateral export control regimes for reasons of public security or human rights considerations.

E. Alternative Means

Section 6(n) of the EAA requires the Department of Commerce to maintain export controls on crime control and detection items. Attempting to achieve the purposes of the crime control restrictions through negotiations or other alternative means would not meet this requirement. The U.S. Government does, however, use diplomatic efforts, sanctions, and other means to convey its concerns about the human rights situation in various countries.

F. Foreign Availability

The foreign availability provision does not apply to Section 6(n) of the EAA.⁵ Congress has

⁵ Provisions pertaining to foreign availability do not apply to export controls in effect before July 12, 1985, under Sections 6(i) (International Obligations), 6(j) (Countries Supporting International Terrorism), and 6(n) (Crime

recognized the usefulness and symbolic value of these controls in supporting U.S. Government policy on human rights issues, foreign availability notwithstanding.

Control Instruments). See the Export Administration Amendments Act of 1985, Public Law No. 99-64, Section 108(g)(2), 99 Stat. 120, 134-35. Moreover, Sections 6(i), 6(j), and 6(n) require that controls be implemented under certain conditions without consideration of foreign availability.

CHAPTER 3

Regional Stability Controls (Section 742.6)

Export Control Program Description and Licensing Policy

Regional Stability (RS) controls ensure that exports and re-exports of controlled items support U.S. foreign policy objectives and do not contribute to the destabilization of the region to which the items are destined. These controls traditionally cover items “specially designed” or modified for military purposes and certain dual-use items that can be used to manufacture military equipment.

License Requirements and Licensing Policy

RS Column 1

Section 742.6 of the Export Administration Regulations (EAR) requires a license for RS reasons (RS Column 1 on the CCL) to export, among other things, certain image-intensifier tubes, infrared focal plane arrays, certain imaging cameras incorporating image-intensifier tubes and infrared focal plane arrays, certain software and technology for inertial navigation systems, gyroscopes, accelerometers, micro and millimeter wave electronic components, protection equipment, detection and identification equipment, medical countermeasures, tear gases, riot control agents, materials for the detection and decontamination of chemical warfare agents, certain tooling, production and test equipment related to directed energy weapons, and certain software and technology related to directed energy weapons, as well as items not listed elsewhere on the CCL, to all destinations except Canada.

The U.S. Government reviews all license applications for these items on a case-by-case basis to determine whether the export could contribute, directly or indirectly, to a country’s military capabilities in a manner that would destabilize or alter a region’s military balance contrary to U.S. foreign policy interests. See the discussion below for special RS control provisions for thermal imaging cameras (ECCNs 6A003 and 0A919) and items not listed elsewhere on the CCL (0Y521).

RS Column 2

In addition, Section 742.6 of the EAR imposes a license requirement for RS reasons (RS Column 2 on the CCL) to export explosives detection equipment and related software and technology, military-related items (e.g., searchlights, bayonets, certain vehicles and trainer aircraft), concealed object detection equipment, and certain commodities used to manufacture military equipment to all destinations except member nations of the North Atlantic Treaty Organization (NATO), Australia, Japan, and New Zealand. The U.S. Government will generally consider applications for such licenses favorably, on a case-by-case basis, unless the export would

significantly affect regional stability. In addition, license applications for explosives detection equipment and related technology classified under ECCNs 2A984, 2D984, and 2E984, are reviewed with a presumption of approval when destined for a government end user in Austria, Cyprus, Finland, Ireland, Israel, Malta, Mexico, Singapore, or Sweden.

RS Controls for Certain Exports to Iraq

In addition, there are RS controls in place for certain items when exported or re-exported to Iraq (or transferred within Iraq). These items are covered under the following ECCNs: 0B999 (specific processing equipment such as hot cells and glove boxes suitable for use with radioactive materials); 0D999 (specific software for neutronic calculations, radiation transport calculations, and hydrodynamic calculations/modeling); 1B999 (specific processing equipment, such as electrolytic cells for fluorine production and particle accelerators); 1C992 (commercial charges containing energetic materials, not elsewhere specified); 1C995 (certain mixtures and testing kits); 1C997 (ammonium nitrate); 1C999 (specific materials, not elsewhere specified); and 6A992 (optical sensors not controlled under ECCN 6A002). The licensing policy for these items is set forth in Section 746.3 of the EAR, and is consistent with the broader controls maintained on Iraq. These controls are discussed in more detail in Chapter 5 of this report.

RS Controls for Certain Thermal Imaging Cameras

Special RS Column 1 requirements apply to certain thermal imaging cameras classified under ECCN 6A003.b.4.b. Export and re-export license requirements and license review policies for these products vary depending on certain technical specifications of the cameras as well as the proposed end uses. Almost all cameras controlled by ECCN 6A003.b.4.b are controlled under Regional Stability Column 1 (RS1) and require an export or re-export license for all destinations other than Canada. Cameras classified under ECCN 6A003.b.4.b are subject to a more favorable licensing policy, however, if they are packaged for civil end use and destined only for Argentina, Australia, Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, or the United Kingdom. A license is required to export or re-export to Hong Kong any item classified under ECCN 6A003.b.4.b.

Cameras controlled by ECCN 6A003.b.4.b that fall below certain technical thresholds are controlled at the lower Regional Stability control level (RS2) when fully packaged for use as a consumer-ready civil product. Applications to export or re-export these cameras will be considered favorably unless there is evidence the export or re-export would contribute significantly to the destabilization of the region to which the camera is destined or is otherwise not authorized by U.S. law.

There is also a license requirement on re-exports of military commodities produced outside the United States that incorporate one or more cameras controlled under ECCN 6A002, 6A003,

6A990, or 6A993.a (having a maximum frame rate equal to or less than 9 Hz and thus meeting the criterion of Note 3.a to ECCN 6A003.b.4) These products are controlled in ECCN 0A919 and are subject to RS Column 1 controls. Re-exports of these military commodities require a license to all destinations except Canada, unless the items are being re-exported as part of a military deployment by a unit of the government of Argentina, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, the United Kingdom, or the United States. Applications for re-exports of these military commodities will be reviewed applying policies for similar commodities that are subject to the International Traffic in Arms Regulations (22 CFR parts 120-130).

RS Controls for ECCN 0Y521 Items

ECCNs 0A521, 0B521, 0C521, 0D521 and 0E521 (referred to collectively as “ECCN 0Y521 items”) cover items subject to the EAR that are not listed elsewhere in the CCL but that the Department of Commerce, with the concurrence of the Departments of Defense and State, has determined should be controlled for export because the items provide a significant military or intelligence advantage to the United States or other foreign policy reasons justify such a control. While an item is temporarily classified under ECCN 0Y521, the U.S. Government will work to adopt a control through the relevant multilateral regime(s) and to determine an appropriate longer-term control over the item. Items classified under an ECCN 0Y521 must be reclassified under another ECCN within one year (with the possibility for extension while multilateral controls are being sought); any item that is not so reclassified or whose 0Y521 classification is not extended will be designated EAR99. Items classified under ECCN 0Y521 are subject to Regional Stability Column 1 (RS1) controls.

Summary of 2016 Changes

As a part of Export Control Reform, less sensitive items such as parts and components are being transferred from the U.S. Munitions List (USML) to the CCL. Once on the CCL, these items are controlled within the “600 Series” for Regional Stability reasons (RS Column 1 or 2). Applications for exports and re-exports of 600 series items will be reviewed to determine whether the transactions are contrary to the national security or foreign policy interests of the United States. The majority of these items were transferred from the USML to the CCL on a rolling basis throughout FY2014, beginning with controls relating to certain aircraft and gas turbine engines, which were officially moved to the CCL on October 15, 2013. Other items were transferred from the USML to the CCL during FY2015, including military electronics, technology, software and related items in the new ECCNs 3x611 on December 30, 2014. Additional items were transferred from the USML to the CCL during FY2016 including protection equipment, detection and identification equipment, medical countermeasures, tear gases, riot control agents, materials for the detection and decontamination of chemical warfare agents, certain tooling, production and test equipment related to direct energy weapons, and

certain software and technology related to directed energy weapons in new ECCNs 1A607, 1B607, 1C607, 1D607, 1E607, 6B619, 6D619, 6E619, effective December 31, 2016. Items in the remaining USML categories will continue to be transferred to the CCL during FY2017 and will also be subject to RS controls. Transfers from the USML to the CCL generally become effective 180 days after publication of the final rule in the Federal Register.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

Regional Stability controls provide a mechanism for the U.S. Government to monitor the export of controlled items, to restrict their use in instances that would adversely affect regional stability or the military balance within a region, and to protect the national security and foreign policy interests of the United States.

B. Considerations and Determinations of the Secretary of Commerce

1. *Probability of Achieving the Intended Foreign Policy Purpose.* The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose, although most of these items are increasingly available from abroad. The Secretary has also determined that the foreign policy purpose cannot fully be achieved through negotiations or other alternative means, and that some of the items subject to these controls are also controlled, as a result of international negotiations, by U.S. partners in the Wassenaar Arrangement and the Missile Technology Control Regime (MTCR). Regional stability controls contribute to U.S. foreign policy objectives by enabling the United States to restrict the use or availability of certain sensitive U.S.-origin goods and technologies that would adversely affect regional stability or the military balance in certain areas.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that these controls are compatible with U.S. foreign policy objectives and that the extension of these controls will not have any significant adverse foreign policy consequences. Regional stability controls are consistent with U.S. foreign policy goals to promote peace and stability and prevent U.S. exports that might contribute to weapons production, destabilizing military capabilities, or acts of terrorism.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. A number of other countries limit exports of items and technologies with military applications to areas of concern, recognizing that such items and technologies could adversely affect regional stability and military balances. For example, each member country of the Wassenaar Arrangement has its own national controls on the export of certain night vision devices. All members of the MTCR maintain controls on software and technology related to missile guidance and control devices. Although other countries may object to new unilateral RS controls, allies and partners of the

United States support U.S. efforts against regional conflict and terrorism and appreciate the need to keep certain equipment and technologies from persons who could misuse the items to destabilize countries or regions.

4. *Economic Impact on U.S. Industry.* The controls on cameras controlled by ECCN 6A003, which exceed the controls on similar products imposed by other producing countries, have significantly and adversely affected the competitiveness of this industry sector. The Secretary nevertheless has determined that the detrimental effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives. Cameras controlled by ECCN 6A003 account for a large percentage of RS-controlled exports. Items controlled for RS reasons generally require licenses for export to all destinations except NATO countries, Australia, Japan, and New Zealand. However, certain RS-controlled items, including those controlled concurrently for Missile Technology reasons as well as cameras controlled under ECCN 6A003, require licenses for export to all destinations except Canada.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. Image intensifier tubes, infrared focal plane arrays, certain software and technology for inertial navigation systems, gyroscopes, accelerometers, and other items controlled for RS purposes are almost all subject to multilateral controls for either National Security (NS) or Missile Technology (MT) reasons.

Other RS controls cover items of lower level technologies that have been de-controlled by the multilateral regimes and are widely available from other exporting countries. The Department of Commerce effectively enforces RS controls by focusing on preventive enforcement, using regular outreach efforts to keep businesses informed of U.S. concerns, and gathering leads on activities of concern. Additionally, exporters are required to report to BIS on exports of thermal imaging cameras decontrolled by a May 2009 regulatory change described below, thereby enabling BIS to verify that the cameras continue to be sold to appropriate end users and that the changes in controls are not jeopardizing U.S. national security or foreign policy interests. Given the enhanced anti-terrorism and national security efforts of the U.S. Government, it is expected that industry will continue to support enforcement efforts.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

BIS conducted a number of enforcement actions regarding noncompliance with these export controls, including:

Unisol International*Thermal Imaging Cameras to Ecuador and Venezuela*

On May 24, 2016, Unisol International of Miami, Florida, agreed to pay \$250,000 in civil penalties, of which \$100,000 is suspended during a two-year probationary period. From December 31, 2012 through March 25, 2013, Unisol International knowingly exported thermal imaging cameras, items classified under ECCN 6A003, controlled for national security and regional stability reasons, and valued at approximately \$67,080, to Ecuador and Venezuela without the required export license. This was an OEE-only case, investigated by OEE's Miami Field Office.

Daofu Zhang / Jian Guanghou Yan / Xianfeng Zuo / HK Potential Electronics Co.*Computer Chips to China*

On July 8, 2016, Daofu Zhang was sentenced in U.S. District Court for the District of Connecticut to 15 months in prison and a \$63,000 forfeiture. On April 15, 2016, Zhang pled guilty to charges related to the sale of counterfeit parts intended for the U.S. military in connection with the attempted export of computer chips to China without the required export license. On March 7 and March 16, 2016 respectively, Jiang Guanghou Yan and Xianfeng Zuo pled guilty in U.S. District Court for the District of Connecticut in connection with the conspiracy. Zhang, Yan, and Zuo, all Chinese nationals, each operated businesses in China that bought and sold electronic components, including integrated circuits. In 2015, Zuo requested that Yan locate and purchase several advanced integrated circuits which had military applications, including radiation tolerance for uses in space. Yan then asked a U.S. individual to locate the items and sell them to Yan. The U.S. individual explained that the items cannot be shipped outside the U.S. without an export license, but Yan still wished to make the purchase. When the U.S. individual expressed concern that the desired integrated circuits would have to be stolen from military inventory, Yan proposed to supply the U.S. individual with fake integrated circuits to replace the ones to be stolen from the military. In November 2015, Zhang shipped from China to the U.S. individual two packages containing counterfeit integrated circuits, each bearing a counterfeit brand label. After further discussions between Yan and the U.S. individual, Yan, Zhang, and Zuo flew together from China to the United States in early December 2015 to complete the purchase of the integrated circuits. On December 10, 2015, Yan, Zhang, and Zuo drove to a location in Milford, Connecticut, where they planned to meet the U.S. individual, make payment, and take custody of the items. Yan, Zhang, and Zuo were arrested at the meeting location. This was a joint investigation with OEE's Boston Field Office, ICE, DCIS, the FBI, and the U.S. Air Force Office of Special Investigations (AFOSI).

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website.

The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

Wassenaar Arrangement member countries hold extensive consultations, and certain member countries hold bilateral discussions regarding items on the Wassenaar control list. During 2016, the U.S. Government engaged in extensive consultations with its Wassenaar partners.

Wassenaar participating states incorporate the Wassenaar Dual-Use Control List into their own national export controls to prevent exports that could contribute to destabilizing buildups of conventional arms.

E. Alternative Means

The United States has undertaken a wide range of actions to support and encourage regional stability and has specifically encouraged efforts to limit the flow of arms and militarily useful goods and other special equipment to regions of conflict and tension. U.S. regional stability export controls remain an important element in U.S. efforts to enhance regional stability. The United States opposes the use of U.S.-origin items to destabilize legitimate political regimes or fuel regional conflicts, notwithstanding the availability of such items from other sources. Accordingly, there are no alternative means to achieve this policy objective.

F. Foreign Availability

Some military vehicles and other military-type equipment that are controlled for RS purposes can be obtained from foreign sources. Software, technology, chemicals, low capability sensors, and other items controlled for RS purposes are widely available. However, in some cases there are overlapping multilateral national security-based (NS) controls on many RS-controlled items. Some of the commodities, related software, and technology controlled for RS purposes are also subject to multilateral controls for either NS or missile technology (MT) reasons under multilateral regimes. Therefore, controls imposed by multilateral regime members restrict foreign availability of these items.

Manufacturers of imaging cameras controlled under ECCN 6A003 have voiced concern to the Department of Commerce that there is considerable foreign availability of these items from Europe, Japan, and China. This foreign availability and differences in licensing practices were major factors that led the Department of Commerce to revise RS controls on certain thermal imaging cameras in a regulation published on May 22, 2009 (74 FR 23941). This regulation eliminated licensing requirements for certain cameras when exported to 37 countries, reduced licensing volume significantly, and mitigated industry's concerns about foreign availability.

CHAPTER 4

Anti-Terrorism Controls (Sections 742.8, 742.9, 742.10)

Export Control Program Description and Licensing Policy

The U.S. Government controls exports of items subject to the Export Administration Regulations (EAR) for Anti-Terrorism reasons under Sections 6(a) and 6(j) of the Export Administration Act of 1979, as amended (EAA). Pursuant to Section 6(j) of the EAA, the Secretary of State has designated three countries—Iran, Sudan, and Syria—as nations with governments that have repeatedly provided support for acts of international terrorism and has designated these countries as state sponsors of terrorism.⁶ Controls imposed for Anti-Terrorism reasons are identified in the EAR as Anti-Terrorism (AT) controls. Additionally, the United States maintains broad controls, and in some cases comprehensive sanctions, on exports and re-exports to Cuba, Iran, Sudan, the Democratic People’s Republic of Korea (North Korea), and Syria. The broader controls applicable to such countries are discussed in Chapter 5 of this report.

Since December 1993, the U.S. Government has reviewed license applications involving the export or re-export of the following five categories of dual-use items to military, police, intelligence, and other sensitive end users within countries designated as terrorist-supporting countries in accordance with the criteria set forth in Section 6(j)(1)(B) of the EAA:

- all items on the CCL subject to national security controls;
- all items on the CCL subject to chemical and biological weapons proliferation controls;
- all items on the CCL subject to missile proliferation controls;
- all items on the CCL subject to nuclear weapons proliferation controls; and
- all military-related items on the CCL (items controlled by CCL entries ending with the number 18 and 600 series items).

Specifically, on December 28, 1993, the Acting Secretary of State determined that items in these categories, if exported or re-exported to military, police, intelligence organizations, or to other sensitive end users in a designated terrorist-supporting country, could make a significant contribution to that country’s military potential or could enhance its ability to support acts of international terrorism. As a result, any export or re-export of an item in these categories is subject to a 30-day congressional notification period prior to approval.

⁶Although the designation of North Korea as a state sponsor of terrorism was rescinded on October 11, 2008, BIS continues to maintain AT controls on the country. Moreover, additional export control requirements under the EAR apply to exports and re-exports to North Korea on the basis of other laws and regulations, and in accordance with United Nations Security Council Resolution 1718 (UNSCR 1718 of October 14, 2006).

The United States controls exports and re-exports of such items to other, non-sensitive end users, as well as exports and re-exports of certain other CCL items to all end users, located in designated state sponsors of terrorism for foreign policy purposes under Section 6(a) of the EAA, which provides the general authority for foreign policy controls. Such transactions are also reviewed against the Section 6(j) standard to determine the applicability of Section 6(j) controls.

License Requirements and Licensing Policy

Pursuant to the 1993 determination of the Acting Secretary of State and subsequent action consistent with it, exports and re-exports of items in the five categories described above to certain sensitive end users in terrorist-supporting countries are controlled for AT reasons pursuant to Section 6(j) of the EAA. In accordance with Section 6(a) of the EAA, the Department of Commerce requires a license for the export and/or re-export of items in these five categories to non-sensitive end users and certain items on the CCL to all end users in designated terrorist-supporting countries for AT reasons. The applicable controls are contained in the relevant EAR sections pertinent to each country.

The Department of Commerce refers all license applications for items controlled for AT reasons to the Department of State for review. With respect to items controlled pursuant to Section 6(a) (including exports or re-exports of items on the CCL to non-sensitive end users), an initial determination is made whether the requirements of Section 6(j) apply. If the Secretary of State determines that the particular export or re-export to a state sponsor of terrorism “could make a significant contribution to the military potential of the destination country, including its military logistics capability, or could enhance the ability of such country to support acts of international terrorism” pursuant to Section 6(j)(1)(B), a license will be required and the Departments of Commerce and State must notify the appropriate congressional committees 30 days before issuing one, consistent with the provisions of Section 6(j)(2) of the EAA. Transactions that do not rise to the Section 6(j)(1)(B) standard are generally reviewed on a case-by-case basis.

Pursuant to Section 6(a) of the EAA, the Department of Commerce requires a license for the export and/or re-export of certain items on the CCL to all end users in all designated terrorist-supporting countries for AT reasons. The applicable controls are contained in the relevant EAR sections pertinent to each country. All applicable controls currently maintained for AT reasons pursuant to either Section 6(j) or Section 6(a) of the EAA continue in force.

Moreover, as described further in Chapter 5, the United States maintains additional controls on exports and re-exports to Cuba, Iran, North Korea, Sudan, and Syria. As a result, the U.S. Government reviews license applications for exports and re-exports of most AT-controlled items to these countries under a general policy of denial, with limited exceptions.

Summary of 2016 Changes

On November 25, 2016, BIS published a final rule to amend the EAR to remove nuclear nonproliferation (NP) Column 2 license requirements from certain pressure tubes, pipes, fittings,

pipe valves, pumps, numerically controlled machine tools, oscilloscopes, and transient recorders on the Commerce Control List (CCL). These changes are intended to revise the EAR controls on these items by making them more consistent with the export controls of other countries that manufacture these items and that, together with the United States, are participating countries in the Nuclear Suppliers Group (NSG). As a result of the changes made by this rule, some of these items are no longer listed under an Export Control Classification Number (ECCN) on the CCL. However, such items remain subject to the EAR under the designation EAR99. This rule also created four new ECCNs to maintain anti-terrorism (AT) controls on certain affected commodities and related “software” and “technology.” In addition, note that “software” “specially designed” for the “development,” “production,” or “use” of items controlled under ECCN 3A292 prior to the publication of this final rule continue to be classified and licensed by BIS under the designation EAR99 through January 31, 2017. Beginning on February 1, 2017, such “software” will be classified and licensed by BIS under ECCN 3D991. All items subject to the EAR, regardless of whether they are listed on the CCL, may require a license for reasons described elsewhere in the EAR (e.g., license requirements based on end-user/end-use controls, embargoes, or other special controls).

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

Anti-Terrorism controls are intended to prevent acts of terrorism and to distance the United States from nations that have repeatedly supported acts of international terrorism and from individuals and organizations that commit terrorist acts. The controls demonstrate U.S. resolve not to trade with nations, entities, or individuals that fail to adhere to acceptable norms of international behavior. The policy provides the United States with the means to control U.S. goods or services that might contribute to the military potential of designated countries and to limit the availability of such goods or services for use in support of international terrorism. U.S. foreign policy objectives are also furthered by ensuring that items removed from multilateral regime lists continue to be controlled to designated terrorist-supporting countries on an alternative basis. With respect to exports and re-exports to Iran, Sudan, and Syria, AT controls are maintained as part of broader U.S. sanctions discussed in Chapter 5.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose, namely, deterring acts of international terrorism and distancing the U.S. from designated terrorist-supporting countries. The Secretary has also determined that the foreign policy purpose cannot be achieved through negotiations or other alternative means. Although widespread availability of comparable goods from foreign sources limits the effectiveness of these controls, the controls restrict access to U.S.-origin commodities, technology, and software, and demonstrate U.S. determination to oppose and distance the United States from international terrorism.

2. ***Compatibility with Foreign Policy Objectives.*** The Secretary has determined that these controls are generally compatible with U.S. foreign policy objectives and specifically with U.S. policy toward the designated terrorist-supporting countries. The Secretary has also determined that the extension of these controls will not have any significant adverse foreign policy consequences. These controls effect the U.S. commitment to restrict the flow of items intended for material support to countries, individuals, or entities for terrorist purposes.

3. ***Reaction of Other Countries.*** The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective; nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. Most countries are generally supportive of U.S. efforts to fight terrorism and to stop the proliferation of weapons of mass destruction and the export and re-export of sensitive items to governments that have repeatedly provided support for acts of international terrorism, as well as to individuals and entities that commit terrorist acts.

4. ***Economic Impact on United States Industry.*** The Secretary has determined that the detrimental effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to United States foreign policy objectives. Although U.S. industry has reported that AT controls have had a detrimental effect, the Secretary has determined that the effect has been modest, especially when viewed in relation to U.S. foreign policy and national security objectives.

5. ***Effective Enforcement of Controls.*** The Secretary has determined the United States has the ability to enforce these controls effectively. Because of the well-publicized involvement of these countries in acts of international terrorism, there is public knowledge of and support for U.S. controls, which facilitates enforcement. However, the large number of items exported in normal trade to other countries, including some aircraft items and consumer goods that have many producers and end users around the world, creates procurement opportunities for brokers, agents, and front companies working in and behalf of end users in the designated terrorist-supporting countries. In addition, differences in export laws and standards of evidence for violations complicate law enforcement cooperation among countries.

Notwithstanding these challenges, the Department of Commerce has developed effective mechanisms to enforce these controls, which serve vital U.S. foreign policy objectives. The Department of Commerce views these controls as a key enforcement priority, and uses outreach efforts and other programs to keep businesses informed of concerns and their obligations. BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups. The Department addresses procurement by or destined for designated terrorist-supporting countries through a variety of means, including enhanced agent training, a targeted outreach program to

familiarize U.S. businesses with concerns, and close cooperation with other agencies working on terrorism issues.

BIS conducted a number of enforcement actions regarding noncompliance with these export controls, including:

Kenneth Chua / Owen Chen

Computer Hardware and Software to Iran via Malaysia and the UAE

On November 10, 2015, Kenneth Wei Xian Chua, a Malaysian national, was sentenced in U.S. District Court for the Middle District of Florida to two months in prison, three years of probation, a \$3,500 criminal fine, DNA collection, and surrender for deportation upon release with no re-entry to the United States. On November 9, 2015, a second Malaysian national, Chen Chee Onn, also known as Owen Chen, was sentenced in U.S. District Court for the Middle District of Florida to one year and one day in prison, three years of supervised release, a \$10,000 criminal fine, and a \$100 special assessment. On August 6, 2015, Chua pled guilty (18 USC §554) to smuggling in connection with the export of U.S.-origin computer storage hardware and related software controlled for anti-terrorism reasons to Iran via Malaysia and the UAE. On July 30, 2015, Chen pled guilty to charges related to the same transactions. This was a joint investigation with the OEE's Miami Field Office and ICE.

EGYPTAIR Airlines Co.

Aircraft to Sudan

On November 17, 2015, EGYPTAIR Airlines Company, the flag carrier airline of Egypt, agreed to pay a civil penalty of \$140,000 to settle charges that the company re-exported to Sudan Airways in Sudan two Boeing 737 commercial aircraft classified under ECCN 9A991 and controlled for anti-terrorism reasons. Pursuant to the term of the lease arrangement with Sudan Airways, the aircraft were placed under the operational control of Sudan Airways; consequently, the operating conditions did not satisfy the criteria for "temporary sojourn" under section 740.15 (License Exception Aircraft and Vessels (AVS)) of the EAR. EGYPTAIR was informed by a third party during the course of the transactions that a license was required for the lease. EGYPTAIR voluntarily disclosed the violations to BIS. This was an OEE-only case, investigated by OEE's Washington Field Office.

Ali Reza Parsa

Electronic Components to Iran via Canada and the UAE

On May 20, 2016, Ali Reza Parsa, a Canadian-Iranian dual citizen and resident of Canada, was sentenced in U.S. District Court for the Southern District of New York to 36 months in prison and a \$300 special assessment in connection with the export of oscilloscopes to Iran without the required export license from OFAC. Parsa was arrested in October 2014 and on January 20, 2016, pled guilty to conspiracy to violate the International Emergency Economic Powers Act. Between 2009 and 2015, Parsa conspired to obtain high-tech electronic components from

American companies for transshipment to Iran and other countries for clients of Parsa's procurement company in Iran, Tavan Payesh Mad. Parsa used his Canadian company, Metal PM, to place orders with U.S. suppliers and had the parts shipped to him in Canada or to a freight forwarder located in the United Arab Emirates. He then transshipped from these locations to Iran or to the location of his company's client in Iran. Parsa provided the U.S. companies with false destination and end-user information for the components in order to conceal the illegality of these transactions. Following his arrest and while incarcerated, Parsa continued to violate the International Emergency Economic Powers Act by conducting business for Metal PM and Tavan Payesh Mad, including by ordering parts from German and Brazilian companies for Iranian customers. Parsa also directed a relative to delete email evidence of his ongoing business transactions while in jail, emphasizing the need for secrecy in their dealings. This was a joint investigation with OEE's New York Field Office and the FBI.

Amin al-Baroudi

Tactical Equipment to Syria

On June 10, 2016, Amin al-Baroudi, a Syrian-born naturalized U.S. citizen, was sentenced in U.S. District Court for the Eastern District of Virginia to 32 months in prison (with credit for approximately six months of time served), two years of supervised release, and a \$100 special assessment. Mr. al-Baroudi was also required to forfeit a variety of firearms and other items seized by the U.S. Government during a search warrant executed in connection with this investigation. On January 15, 2016, Mr. al-Baroudi pled guilty to conspiracy to violate the International Emergency Economic Powers Act and U.S. sanctions against Syria. The charges relate to the export of U.S.-origin military and tactical items and other U.S.-origin equipment to supply and arm Ahrar al-Sham and other rebel groups in Syria. Through this conspiracy, Mr. al-Baroudi illegally exported a variety of items for use on the battlefield, including rifle scopes, night vision rifle scopes and sighting devices, body armor, voltage power meters, range finders, communications equipment, and laser boresighters. This was a joint investigation with OEE's Washington Field Office and the FBI.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

The United States continues to consult with a number of countries, both on a bilateral and a multilateral basis, regarding activities of designated terrorist-supporting countries. In general, most countries are supportive of U.S. anti-terrorism efforts but do not implement export control

programs comparable to that of the United States. However, the continued maintenance of sanctions by certain countries limits foreign availability for some destinations.

E. Alternative Means

The United States has taken a wide range of diplomatic, political, and security-related steps, in addition to economic measures such as export controls, to persuade certain countries to discontinue their support for terrorist activities. The methods that the United States uses against a country, terrorist organization, or individual vary and are dictated by the circumstances prevailing at any given time. In general, the United States believes that maintenance of AT controls is an appropriate method to deter acts of state-sponsored terrorism by the designated terrorism-supporting countries and encourage those designated terrorism-supporting countries to act against terrorist-supporting entities and individuals within their jurisdiction or control. See also Chapter 13 for a discussion of the Entity List, a list set forth in the EAR of foreign persons to which license requirements apply based on criteria that include support for terrorism.

F. Foreign Availability

The foreign availability provision does not apply to items determined by the Secretary of State to require control under Section 6(j) of the EAA.⁷ Congress specifically excluded AT controls from foreign availability assessments otherwise required by the EAA, due to the value of such controls in emphasizing the U.S. position on countries whose governments support international terrorism. However, the Department of Commerce considers the foreign availability of items controlled to designated terrorist-supporting countries under Section 6(a) of the EAA. Although there are numerous foreign sources for items similar to those subject to control, the maintenance of sanctions by certain countries limits foreign availability for some destinations. In addition, the U.S. Government's AT controls serve important foreign policy interests.

⁷ Provisions pertaining to foreign availability do not apply to export controls in effect before July 12, 1985, under sections 6(i) (International Obligations), 6(j) (Countries Supporting International Terrorism), and 6(n) (Crime Control Instruments). See the Export Administration Amendments Act of 1985, Public Law 99-64, section 108(g)(2), Stat. 120, 134-35. Moreover, Sections 6(i), 6(j), and 6(n) of the EAA require that controls be implemented under certain conditions without consideration of foreign availability.

Chapter 5

Embargoes, Sanctions, and Other Special Controls (Sections 744.8, 744.12, 744.13, 744.14, 744.18, 744.20, 744.21, 746.2, 746.3, 746.4, 746.7, 746.9, and General Order No. 2 (Supplement No. 1 to Part 736))

Export Control Program Description and Licensing Policy

This Chapter discusses the Department of Commerce's implementation of comprehensive and partial embargoes and sanctions programs, and other special controls maintained by the U.S. Government pursuant to the Export Administration Regulations (EAR), either unilaterally or to implement United Nations (UN) Security Council Resolutions. Specifically, the U.S. Government maintains either partial or comprehensive economic and trade sanctions on Cuba, North Korea, Iran, Iraq, Russia, Sudan, Syria, as well as sanctions on certain designated persons. Certain of these sanctions include sanctions programs relating to Iraq, North Korea, and other countries, consistent with international obligations. Finally, the U.S. Government maintains special controls on certain end uses and end users, including controls intended to curtail the proliferation of weapons of mass destruction. See also Chapter 13 for a discussion of the Entity List.

License Requirements and Licensing Policy

Certain Designated Persons

The Department of Commerce requires a license for the export or re-export of all items subject to the EAR to Specially Designated Global Terrorists (SDGTs), Specially Designated Terrorists (SDTs), and Foreign Terrorist Organizations (FTOs), and a general policy of denial applies to all applications for such exports or re-exports. SDGTs, SDTs, and FTOs are identified with the bracketed suffixes [SDGT], [SDT], and [FTO], respectively, on the list of specially designated nationals and blocked persons (SDN List) maintained by the Office of Foreign Assets Control (OFAC), U.S. Department of the Treasury, in Appendix A to 31 CFR Chapter V. Exports and re-exports made by U.S. persons to SDGTs and SDTs that are authorized by OFAC generally do not require separate Bureau of Industry and Security (BIS) authorization but this treatment does not apply to FTOs.

Furthermore, the Department of Commerce requires a license for exports and re-exports of all items subject to the EAR to persons designated in or pursuant to Executive Order 13382 of June 28, 2005 (Weapons of Mass Destruction Proliferators and their Supporters), and a general policy of denial applies to all license applications for such transactions. The persons whose property or interests in property are blocked pursuant to Executive Order 13382 are identified by OFAC in Appendix A to 31 CFR Chapter V with the bracketed suffix [NPWMD]. Exports and re-exports

made by U.S. Persons to NPWMDs that are authorized by OFAC generally do not require separate BIS authorization.

By Executive Order 13742 of October 7, 2016, the President terminated the national emergency with respect to Burma and revoked six Burma-related Executive Orders, including Executive Order 13310 of July 28, 2003, Executive Order 13448 of October 18, 2007, and Executive Order 13464 of April 30, 2008. The President cited several areas of democratic reform, including historic elections held in November 2015 that resulted in the formation of a democratically-elected, civilian-led government. Consistent with the President's action, the Department of Commerce removed the EAR's provision (Section 744.22) that imposed licensing requirements, with a general policy of denial for exports, re-exports, and in-country transfers of items subject to the EAR (apart from agricultural commodities, medicine, or medical devices designated as EAR99) destined to persons listed in or designated pursuant to Executive Orders 13310, 13448, or 13464. In addition, Burma will be moved from Country Group D:1 in the EAR to Country Group B, a more favorable country group placement.

Certain Military End Uses and Military End Users

The Department of Commerce requires a license for the export, re-export, or transfer (in-country) of certain items⁸ when the exporter, re-exporter, or transferor knows or is informed that the items are intended for a defined "military end use" in the People's Republic of China (PRC) or a military end use or defined military end user in Russia or Venezuela. Applications subject to this license requirement are denied if the contemplated transactions would make a material contribution to the military capabilities of the PRC, Russia, or Venezuela and would result in advancing the country's military activities contrary to the national security interests of the United States.

The Department of Commerce also requires a license for the export, re-export, or in-country transfer of any item subject to the EAR to Iraq if the exporter, re-exporter, or transferor knows or is informed that the item is intended for a "military end use" or "military end user" as those terms are defined in the relevant EAR provision (Section 746.3). A general policy of denial applies, and exports of such items to military end users in Iraq who are not recognized as legitimate military end users by the U.S. Government are generally denied.

⁸ Supplement No. 2 to Part 744 of the EAR lists the items that are subject to this license requirement.

Cuba

The Department of Commerce requires a license for export or re-export to Cuba of virtually all commodities, technology, and software subject to the EAR, with License Exceptions available for transactions including:

- food and certain items to meet basic human needs;
- certain types of personal baggage;
- certain foreign-origin items in transit from Canada through the United States;
- items for U.S. Government personnel and agencies, and agencies of cooperating governments;
- items intended to improve the living conditions of the Cuban people;
- items to support independent economic activity and strengthen civil society;
- items to improve the free flow of information to, from, and among the Cuban people;
- certain vessels and aircraft on temporary sojourn for authorized travel;
- certain consumer communications devices; and
- gift parcels containing items normally exchanged as gifts between individuals (and in quantities normally exchanged between individuals), including food, medicine, clothing, and certain consumer communications devices, provided that the value of non-food items does not exceed \$800.

Items requiring a license to export or re-export to Cuba are subject to a general policy of denial. There are, however, a number of types of transaction that are subject to case-by-case review or a favorable licensing policy.

Applications for exports of donated and commercially supplied medicine or medical devices to Cuba on a case-by-case basis, pursuant to the provisions of Section 1705 of the Cuban Democracy Act of 1992, 22 U.S.C. 6001 *et seq.* The United States will generally approve such exports, except in the following cases:

- to the extent Section 5(m) of the Export Administration Act of 1979, as amended (EAA) or Section 203(b)(2) of the International Emergency Economic Powers Act (IEEPA) permit such restrictions;
- when there is a reasonable likelihood the item to be exported will be used for purposes of torture or other human rights abuses;
- when there is a reasonable likelihood the item to be exported will be re-exported;
- when the item to be exported could be used in the production of any biotechnological product; or
- if it is determined that the U.S. Government is unable to verify, by on-site inspection and other appropriate means, that the item to be exported will be used only for its intended purpose and only for the use and benefit of the Cuban people. This exception does not apply to donations of medicine for humanitarian purposes to non-governmental organizations in Cuba.

The Department authorizes exports and certain re-exports of agricultural commodities to Cuba under License Exception AGR, pursuant to section 906(a)(1) of the Trade Sanctions Reform and Export Enhancement Act of 2000 (TSRA). Under License Exception AGR, an exporter must submit prior notification of a proposed transaction to the Department of Commerce. The exporter may proceed with the shipment when the Department confirms that no reviewing agency has raised an objection (generally within 12 business days), provided the transaction meets all of the other requirements of the License Exception. This expedited review includes the screening of the ultimate recipient of the commodities to ensure that it is not involved in promoting international terrorism.

The Department considers applications for certain categories of exports and re-exports, including the following, on a case-by-case basis when the exports or re-exports are intended to provide support for the Cuban people or the transactions would be consistent with the foreign policy interests of the United States:

- exports and re-exports of items to state-owned enterprises, agencies, and other organizations of the Cuban government, provided that the items are intended for the use and benefit of the Cuban people, to include:
 - agricultural production, artistic endeavors, education, food processing, disaster preparedness, relief and response, public health and sanitation, residential construction and renovation, and public transportation;
 - wholesale and retail distribution for domestic consumption by the Cuban people;
 - construction of facilities for treating public water supplies, facilitates for supplying electric or other energy to the Cuban people, sports and recreation facilities, and other infrastructure that directly benefits the Cuban people;
- exports of certain vessels and aircraft on temporary sojourn to Cuba.

The Department considers applications for a few categories of exports and re-exports, including the following, on a general policy of approval when the exports or re-exports are intended to provide support for the Cuban people or the transactions would be consistent with the foreign policy interests of the United States:

- exports and re-exports of items necessary to provide efficient and adequate telecommunications links between the United States and Cuba, including links established through third countries, and including the provision of satellite radio or satellite television services to Cuba;
- exports of certain commodities and software destined to human rights organizations or to individuals and non-governmental organizations that promote independent activity;
- exports of certain commodities and software for U.S. news bureaus in Cuba;
- exports of certain agricultural items not eligible for License Exception Agricultural Commodities (AGR);

- exports and re-exports of items for the environmental protection of U.S. and international air quality, water, and coastlines (including items related to renewable energy or energy efficiency) and;
- exports and re-exports of items to ensure the safety of civil aviation and the safe operation of commercial passenger aircraft.

The Department will generally deny applications to export or re-export items for use by state-owned enterprises, agencies, and other organizations that primarily generate revenue for the state, including those engaged in tourism and those engaged in the extraction or production of minerals or other raw materials. The Department will also generally deny exports and re-exports destined to the Cuban military police, intelligence or security services.

Iran

OFAC administers the U.S. Government's comprehensive trade and investment sanctions against Iran. No person may export or re-export items subject to the EAR if such transaction is prohibited by OFAC's Iranian Transactions and Sanctions Regulations, 31 CFR part 560, and not authorized by OFAC. Virtually all trade and investment activities with Iran by U.S. persons, wherever located, are prohibited by the Iranian Transactions and Sanctions Regulations. Certain trade activities by non-U.S. persons, including some re-exports, are also prohibited by OFAC under these regulations.

The Department of Commerce imposes license requirements for exports and re-exports to Iran of most items on the CCL. The Iran-Iraq Arms Non-Proliferation Act of 1992 (IIANPA) requires BIS to deny licenses for items controlled to Iran for national security (Section 5 of the EAA) or foreign policy (Section 6 of the EAA) reasons. License applications for exports or re-exports of these items are subject to a general policy of denial, absent contract sanctity or a Presidential waiver of restrictions under IIANPA. In some cases, the EAR imposes license requirements on items designated as EAR99 exported or re-exported to Iran that are (1) destined to end users listed in OFAC's list of SDNs, or (2) destined to end uses or end users prohibited by part 744 of the EAR. Because they are not specific to Iran, the license requirements for items designated as EAR99 are not listed in either this Chapter's description of controls on certain designated persons or in Chapter 13's discussion of the BIS Entity List.

Notwithstanding Department of Commerce license requirements, OFAC is the primary licensing agency for both EAR99 and CCL exports and re-exports to Iran, and BIS does not, in practice, receive or process license applications for transactions involving Iran except under the following circumstances: (1) the license is for the release of technology or source code on the CCL to Iranian nationals in the United States (deemed export) or of the release of such technology or source code to Iranian nationals located abroad (deemed re-export); or (2) the license is for the export or re-export of EAR99 items to certain end users or for certain end uses in Iran that are prohibited pursuant to provisions of the EAR that, as noted above, are not specific to Iran (e.g., Part 744 end-use/end user controls).

However, pursuant to the January 16, 2016 implementation of the Joint Comprehensive Plan of Action (JCPOA) among Iran, the European Union, the United States, Germany, France, the United Kingdom, Russia and China, OFAC issued a statement of licensing policy (SLP) for favorable, case-by-case review of applications to export or re-export commercial passenger aircraft and related parts and components and services to Iran. Persons seeking to export or re-export items covered by the SLP to persons pursuant to EAR Part 744, e.g. persons on the BIS Entity List or Denied Persons List, must obtain authorization from BIS. BIS continues to apply a presumption of denial to Entity List applications involving Iranian entities on the Entity List. BIS may approve applications to export or re-export commercial passenger aircraft and related parts and components, however, based on recommendations from the State Department consistent with the JCPOA. With respect to persons on the Denied Persons List, persons may apply to BIS to engage in an export or re-export (or take other action) involving a Denied Person in accordance with EAR procedures. BIS may approve applications involving commercial passenger aircraft and related parts and components consistent with OFAC issued statement of licensing policy.

BIS takes enforcement action against violators of the Iran-related provisions of the EAR. It is a violation of the EAR to export or re-export to Iran any item that is subject to the EAR – including items designated as EAR99 – if such transaction requires authorization by OFAC pursuant to the Iranian Transactions and Sanctions Regulations and such authorization has not been obtained.

Iraq

The Department of Commerce requires a license for the export or re-export to Iraq, or transfer (in-country) within Iraq, of the following:

- any item controlled on the CCL for National Security (NS), Missile Technology (MT), Nuclear Nonproliferation (NP), Chemical Weapons Convention (CW), Chemical & Biological Weapons (CB), Regional Stability (RS), Crime Control (CC), Encryption Item (EI), Significant Items (SI), or Surreptitious Listening (SL) reasons;
- any item controlled on the CCL for UN reasons;
- items on the CCL controlled for RS reasons under the following ECCNs: 0B999, 0D999, 1B999, 1C992, 1C995, 1C997, 1C999 and 6A992;
- any item subject to the EAR if, at the time of the transaction, it is known the item will be, or is intended to be, used for a “military end use” or by a “military end user” as defined in the relevant provision of the EAR.

As defined specifically for Iraq, a military end user is any person or entity whose actions or functions are intended to support “military end uses” and who is not recognized as a legitimate military organization by the U.S. Government. “Military end use” is the incorporation of an item into a military item described on the USML (22 CFR Part 121, ITAR), or the Wassenaar Arrangement Munitions List (WAML); or use, development, or deployment of military items

described on the USML or the WAML. The Department reviews license applications destined to such end users or end uses under a policy of denial.

The Department of Commerce also reviews license applications for the following items under a general policy of denial:

- items destined for use in Iraqi civil nuclear or military nuclear activity (except for use of isotopes for medical, industrial, or agricultural purposes);
- machine tools controlled for NS reasons, machine tools controlled for NP reasons, any item controlled for CC or UN reasons, or any item controlled under an ECCN ending in the number “018,” if such item would make a material contribution to the production, research, design, development, support, maintenance, or manufacture of Iraqi weapons of mass destruction, ballistic missiles, or arms and related materiel; and
- items controlled for RS reasons under ECCNs 0B999, 0D999, 1B999, 1C992, 1C995, 1C997, 1C999, or 6A992 that will not contribute to the building of Iraqi civil infrastructure.

The Department of Commerce requires a license for exports, re-exports, or in-country transfers of any item subject to the EAR to persons listed in the Annex to Executive Order 13315, as amended (“Blocking Property of the Former Iraqi Regime, Its Senior Officials and Their Family Members, and Taking Certain Other Actions”), as well as persons subsequently designated by the Secretary of the Treasury pursuant to that Executive Order. U.S. persons are not required to seek separate BIS authorization for an export, re-export, or in-country transfer to a designated person that has already been authorized by the Department of the Treasury, and license applications for such transactions are subject to a general policy of denial by the Department of Commerce.

North Korea

North Korea is subject to sanctions based on its nuclear and ballistic missile activities, engagement in proliferation and other illicit activities, and commission of human rights violations. Consistent with UN Security Council Resolution 1718 and as set forth in Section 746.4 of the EAR, BIS requires a license for the export or re-export to North Korea of all items subject to the EAR, except food and medicine designated as EAR99. Other controls on North Korea are located in Section 742.19 of the EAR.

Pursuant to Section 746.4 of the EAR, applications for items requiring a license for export or re-export to North Korea are subject to case-by-case review, except as follows:

- Applications to export or re-export luxury goods are subject to a general policy of denial.
- Applications to export or re-export arms and related materiel; items specified by UN documents S/2006/814, S/2006/815 and S/2006/853; and other items that the UN Security Council or the Sanctions Committee established pursuant to UN Security Council Resolution 1718 has determined could contribute to North Korea's nuclear-

related, ballistic missile-related or other weapons of mass destruction-related programs, are subject to a general policy of denial.

- Applications to export or re-export items controlled for nuclear nonproliferation (NP) and missile technology (MT) reasons (except ECCN 7A103 items) are subject to a general policy of denial.
- Applications to export or re-export items controlled for chemical and biological weapons (CB) and national security (NS) reasons, as well as applications to export or re-export many items only controlled for anti-terrorism (AT) reasons, are subject to a general policy of denial.
- Applications to export or re-export humanitarian items (e.g., blankets, basic footwear, heating oil, and other items meeting subsistence needs) intended for the benefit of the North Korean people; items in support of UN humanitarian efforts; and agricultural commodities or medical devices that are determined by BIS, in consultation with the interagency license review community, not to be luxury goods are subject to a general policy of approval.

Additionally, certain categories of items are authorized for export or re-export to North Korea under License Exceptions:

- Items for the use of the news media under certain conditions;
- Exports for U.S. Government personnel and agencies, the International Atomic Energy Agency (IAEA), or the European Atomic Energy Community (Euratom);
- Certain gift parcels by individuals and humanitarian donations by groups or organizations, except for luxury goods;
- Certain operation technology and software, sales technology, and software updates;
- Personal baggage for individuals leaving the United States; and
- Temporary sojourn of certain civil aircraft re-exported to North Korea.

Russian Industry Sector Sanctions

The Department of Commerce requires a license for the export, re-export, or transfer (in-country) of certain items⁹ when the exporter, re-exporter, or transferor knows or is informed by BIS that the item will be used, directly or indirectly, in the exploration for, or production of, oil or gas in Russian deepwater (greater than 500 feet), or Arctic offshore locations or shale formations in Russia. A license also is required when the exporter, re-exporter, or transferor is unable to determine whether the items will be used in any of the aforementioned activities. Applications subject to these controls are reviewed with a presumption of denial when the items are for use, directly or indirectly, in exploration or production from Russian deepwater (greater than 500 feet), Arctic offshore, or shale projects in Russia that have the potential to produce oil.

Russian Occupation of Crimea Region of Ukraine

⁹ Section 746.5 and Supplement No. 2 to Part 746 of the EAR list the items that are subject to this license requirement.

The Department of Commerce requires a license for the export, re-export, or transfer (in-country) to the Crimea region of Ukraine of any item subject to the EAR except food and medicine designated as EAR99 or certain freely available EAR99 and 5D992.c software that is necessary to enable the exchange of personal communications over the internet.

Applications are reviewed with a presumption of denial, except for items authorized under OFAC Ukraine-Related General License No. 4, which are reviewed on a case-by-case basis. OFAC General License No. 4 authorizes, with some excepted commodities and classes of parties, transactions for the export, or transfer (in-country) of agricultural commodities, medicine, medical supplies, and EAR99 replacement parts for medical supplies on a one-for-one replacement basis.

The 'Crimea region of Ukraine' includes the land territory in that region as well as any maritime area over which sovereignty, sovereign rights, or jurisdiction is claimed based on purported annexation of that land territory.

Certain categories of items are authorized for export or re-export to the Crimea region of Ukraine under License Exceptions:

- TMP for items for use by the news media under certain conditions;
- GOV for items for personal or official use by personnel and agencies of the U.S. Government, the International Atomic Energy Agency (IAEA), or the European Atomic Energy Community (Euratom);
- GFT for gift parcels and humanitarian donations;
- Certain operation technology and software, sales technology, and software updates;
- Personal baggage for individuals leaving the United States; and
- Temporary sojourn of certain civil aircraft re-exported to the Crimea region of Ukraine.

Sudan

The U.S. Government requires a license for the export and re-export to Sudan of nearly all items on the Commerce Control List. Many items controlled on the CCL to Sudan may require a license from both the Departments of Commerce and the Treasury. License applications may be submitted to both agencies concurrently.

The Department of Commerce reviews, under a general policy of denial, applications for the export and re-export of all items controlled for chemical, biological, missile, and nuclear proliferation reasons, military-related items controlled for national security or regional stability reasons (CCL entries ending in the number 018), and certain items controlled for national security or foreign policy reasons, such as aircraft, cryptologic items, and explosive device detectors, for all end users in Sudan. Other non-military-related items that are controlled to Sudan for national security or foreign policy reasons are subject to a general policy of denial for military end users or end uses, and case-by-case review for non-military end users or end uses.

Syria

The Department of Commerce requires a license for the export or re-export to Syria of all commodities, technology, and software subject to the EAR, except food and medicine designated as EAR99, and “deemed exports” or “deemed re-exports” to Syrian nationals of technology or source code designated as EAR99. Additionally, certain categories of items are authorized for export or re-export to Syria under License Exceptions:

- Personal baggage for individuals leaving the United States;
- Items for the use of the news media under certain conditions;
- Exports for U.S. Government personnel and agencies;
- Certain operation technology and software, sales technology, and software updates; and
- Temporary sojourn of certain civil aircraft re-exported to Syria.

The Department of Commerce generally denies license applications for exports or re-exports to Syria. However, pursuant to the President’s exercise of waiver authority, the Department considers applications for the following on a case-by-case basis:

- Items necessary to carry out the President's constitutional authority to conduct U.S. foreign affairs and as Commander-in-Chief, or in support of U.S. Government activities;
- Medicine on the CCL and medical devices;
- Parts and components intended to ensure the safety of civil aviation and safe operation of commercial passenger aircraft;
- Aircraft chartered by the Syrian Government for the transport of Syrian Government officials on official Syrian Government business;
- Telecommunications equipment and associated computers, software, and technology to enhance the free flow of information, including items for general academic, administrative, business, and personal use;
- Items in support of UN operations in Syria; and
- Items necessary for the support of the Syrian people, including, but not limited to, items related to water supply and sanitation, agricultural production and food processing, power generation, oil and gas production, construction and engineering, transportation, and educational infrastructure.¹⁰

United Nations Security Council Arms Embargoes

¹⁰ Pursuant to E.O. 13338 of May 11, 2004, the President exercised national security waiver authority set forth in Section 5(b) of the Syria Accountability and Lebanese Sovereignty Restoration Act of 2003 (the SAA), which authorized case-by-case licensing of the first six categories of items in this list. *See* General Order No. 2 to Supp. No. 1 to Part 736 of the EAR and Section 746.9 of the EAR. The President delegated his authority to issue additional waivers to the Secretary of State. On June 12, 2013, the Secretary of State issued a national security waiver consistent with the SAA and E.O. 13338 that applies to the items listed in the final bullet point.

Pursuant to Part 746.1(b) of the EAR, the Department of Commerce requires a license for the export or re-export of items controlled for “UN” reasons to countries subject to United Nations Security Council arms embargoes: Central African Republic, the Democratic Republic of the Congo, Eritrea, Iran, Iraq, Lebanon, Libya, North Korea, Somalia, Sudan, and Yemen.

Summary of 2016 Changes

On January 27, 2016, BIS amended the EAR to identify additional types of exports and re-exports to Cuba that are subject to a general policy of approval: items for safety of civil aviation and safe operation of commercial aircraft engaged in international air transportation, certain telecommunications and agricultural items, items to human rights organizations or individuals and nongovernmental organizations that promote independent activity intended to strengthen civil society in Cuba, and items for use by U.S. news bureaus. The amendment also established other exceptions to the general policy of denial in the EAR for exports and re-exports to Cuba, by identifying types of exports and re-exports that will be reviewed, on a case-by-case basis, including exports and re-exports made to state-owned enterprises and agencies and organizations of the Cuban government that provide goods and services to the Cuban people, provided the items are for the use and benefit of the Cuban people.

On March 16, 2016, BIS published an amendment to the EAR that allows vessels departing from the United States on temporary sojourn to Cuba with cargo for other destinations to travel to Cuba under a license exception, rather than having to obtain a license for the cargo bound for those other destinations to transit Cuba. The amendment also authorizes, under License Exception Support for the Cuban People, exports of certain items to persons authorized by the Department of the Treasury to establish and maintain a physical or business presence in Cuba. In addition, the amendment establishes a licensing policy of case-by-case review for exports and re-exports of items that would enable or facilitate exports of items produced by the private sector in Cuba, subject to certain limitations.

On October 17, 2016, BIS amended the EAR to allow cargo bound for destinations other than Cuba to transit Cuba on aircraft traveling to Cuba under a license exception. The amendment also authorizes exports and re-exports of certain items sold directly to individuals in Cuba under a license exception, and revises the list of ineligible Cuban officials for the purposes of certain license exceptions.

On November 4, 2016, BIS amended the EAR to update regulations by implementing the termination of UN Security Council and United States arms embargoes to certain destinations. Specifically, this rule revised Country Group D:5 (U.S. Embargoed Countries) in Supplement No. 1 to Part 740 of the EAR by removing Cote d’Ivoire, Liberia, Sri Lanka and Vietnam consistent with changes made by the Department of State to Section 126.1 of the International Traffic in Arms Regulations (ITAR)

By Executive Order 13742 of October 7, 2016, the President terminated the national emergency with respect to Burma and revoked six Burma-related Executive Orders, including Executive

Order 13310 of July 28, 2003, Executive Order 13448 of October 18, 2007, and Executive Order 13464 of April 30, 2008. The President cited several areas of democratic reform, including historic elections held in November 2015 that resulted in the formation of a democratically-elected, civilian-led government. Consistent with the President's action, on December 27, 2016, the Department of Commerce removed the EAR's provision (Section 744.22) that imposed licensing requirements, with a general policy of denial, for exports, re-exports, and in-country transfers of items subject to the EAR (apart from agricultural commodities, medicine, or medical devices designated as EAR99) destined to persons listed in or designated pursuant to Executive Orders 13310, 13448, or 13464. In addition, Burma will be moved from Country Group D:1 in the EAR to Country Group B, a more favorable country group placement.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

Certain Designated Persons

The purpose of controls on designated terrorist persons (natural persons, entities, and groups) and proliferators of weapons of mass destruction and their supporters is to restrict exports and re-exports of items that would be useful in enhancing the capability of these persons to undertake activities that support terrorism or contribute to the development of WMD.

Cuba

At the height of the Cold War, and following the Cuban government's expropriation of U.S. properties and its move toward adoption of a one-party system of government, the United States imposed an embargo on Cuba and broke diplomatic relations. In March 1982, the Secretary of State designated Cuba as a state sponsor of terrorism under Section 6(j) of the EAA. Cuba's designation as a State Sponsor of Terrorism was rescinded on May 29, 2015. The rescission removed anti-terrorism controls for Cuba. However, due to the comprehensive statutory embargo, Cuba remains subject to foreign policy controls.

Iran

The purpose of the controls is to restrict exports and re-exports of items that could enhance Iran's terrorism-supporting capabilities and to address other U.S. and international foreign policy concerns, relating to nonproliferation, human rights, and regional stability. By restricting the export and re-export of items that could have a military use, the controls demonstrate the resolve of the United States not to provide any direct or indirect military support for Iran and to support other U.S. foreign policy objectives. The controls also implement a United Nations Security Council resolution prohibiting the unauthorized export, re-export, and transfer of certain items that could assist Iran's ballistic missile program. The United States' support for exports and re-exports of agricultural commodities, including food, medical supplies, and medical equipment is

designed to ensure that U.S. export controls on Iran do not prevent the Iranian population from receiving what it needs for humanitarian purposes.

Iraq

The purpose of the controls is to restrict exports, re-exports, and transfers (in-country) that might adversely affect the security situation in Iraq.

North Korea

The purpose of the controls is to restrict certain exports and re-exports to North Korea to comply with the United States' obligations as a member of the United Nations, and to demonstrate the United States' concern over North Korea's development, testing, and proliferation of nuclear weapons, missiles and missile technology, and other weapons of mass destruction.

Persons Sanctioned by the State Department

The purpose of the controls is to restrict exports to persons engaged in activities that are contrary to the foreign policy interests of the United States or who have violated U.S. export control laws. These controls demonstrate the United States' opposition to activities of concern as well as its resolve to actively work against the diversion of sensitive items to unauthorized end users or end uses.

Russia

The U.S. sanctions and export controls have been implemented against Russia due to its continuing policy of destabilization in eastern Ukraine and continuing occupation of Crimea and Sevastopol. Additionally, the deployment of Russian Federation military forces in the Crimea Region of Ukraine (Occupied) undermines democratic processes and institutions in Ukraine; threatens its peace, security, stability, sovereignty, and territorial integrity; and contributes to the misappropriation of its assets, and thereby constitutes an unusual and extraordinary threat to the national security and foreign policy of the United States.

Russian Occupied Crimea Region of Ukraine

The Department of Commerce requires a license for the export, re-export, or transfer (in-country) of any item subject to the EAR except food and medicine designated as EAR99 or certain freely available EAR99 and 5D992.c software that is necessary to enable the exchange of personal communications over the internet to the Crimea region of Ukraine. Applications are reviewed with a presumption of denial, except for items authorized under OFAC Ukraine-Related General License No. 4, which are reviewed on a case-by-case basis.

This license requirement implements an appropriate measure within the authority of BIS to carry out the provisions of Executive Order 13685 of December 19, 2014 to demonstrate the United

States' resolve to restrict trade with nations or persons that fail to adhere to acceptable norms of international behavior, or whose behavior threatens United States interests. In Executive Order 13660 of March 6, 2014, the President declared a national emergency and found that the actions and policies of the Government of the Russian Federation with respect to Ukraine – including the deployment of Russian Federation military forces in the Crimea region of Ukraine – undermine democratic processes and institutions in Ukraine; threaten its peace, security, stability, sovereignty, and territorial integrity; and contribute to the misappropriation of its assets, and thereby constitute an unusual and extraordinary threat to the national security and foreign policy of the United States.

Sudan

U.S. sanctions and export controls remain in place against Sudan due to its continued support for international terrorism. The controls maintained by BIS pursuant to the EAR support the broader sanctions maintained by OFAC pursuant to several Executive Orders and applicable laws.

Syria

The Government of Syria engages in widespread acts of violence against its own citizens and has used chemical weapons in heavily populated areas. Additionally, Syria's ongoing internal conflict significantly contributes to the destabilization throughout the region. Syria hosts various terrorist organizations and provides political and material support to Hezbollah in Lebanon. Moreover, the Syrian Government allows Iran to resupply Hezbollah through Syrian territory. The U.S. Government also remains concerned about Syria's interference in the internal affairs of Iraq as well as Lebanon. U.S. export controls reflect U.S. opposition to these activities. The controls also promote other U.S. foreign policy interests, including the promotion of human rights, the encouragement of regional stability, and the safeguarding and destruction of chemical and biological weapons.

United Nations Security Council Arms Embargoes

The United States maintains export controls in accordance with the UN Security Council arms embargoes and partial embargoes on Central African Republic, the Democratic Republic of the Congo, Eritrea, Iran, Iraq, Lebanon, Libya, North Korea, Somalia, Sudan, and Yemen.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving Intended Foreign Policy Purpose. The Secretary has determined that the controls described in this Chapter are likely to achieve the intended foreign policy purpose, in light of other factors, including foreign availability from other countries. She has further determined that the foreign policy purpose cannot be achieved through negotiations or alternative means. For each of the controls described in this Chapter, the Secretary has determined that such restrictions have denied the targeted countries and persons access to resources for use in activities that are contrary to the foreign policy of the United States. The

controls described in this Chapter seek to have the targeted entities or governments modify their actions. In addition, the applicable controls may reduce the potential for conflict.

Certain Designated Persons

The Secretary has determined that foreign policy controls will help thwart these persons' access to U.S.-origin items that could support terrorist operations, WMD proliferation, or other restricted activities.

Certain Military End Uses and Military End Users

The Secretary has determined that these controls will help restrict the availability of certain sensitive items for military end uses and military end users in the PRC, Russia, and Venezuela, as well as all items subject to the EAR that are destined for such end uses and end users in Iraq, thereby advancing U.S. national security and foreign policy interests.

Cuba

The Secretary has determined that the regulations published during 2016 are designed to empower the Cuban people and support the emerging Cuban private sector, in furtherance of President Obama's policy goals. These actions build upon previous Commerce regulatory revisions intended to support authorized travel, enhance the safety of Americans traveling to the country, allow more business opportunities for the nascent Cuban private sector, and otherwise support the Cuban people. These additional adjustments have the potential to improve the living standards of the Cuban people.

Iran

The Secretary has determined that foreign policy controls will restrict Iran's unauthorized access to specified U.S.-origin items that could contribute to Iran's nuclear weapons development program and Iranian support of terrorism and promotion of regional threats to U.S. interests.

Iraq

The Secretary has determined that foreign policy controls will restrict the ability of terrorists and insurgent groups to obtain and use U.S.-origin items to attack U.S. forces or to destabilize the current Government of Iraq.

North Korea

The Secretary has determined that the foreign policy controls will meet U.S. obligations under relevant UN Security Council resolutions and impede North Korea's development, testing, and proliferation of conventional and nuclear weapons and other WMDs, and may help to persuade it to eventually abandon its nuclear weapons program.

Persons Sanctioned by the State Department

The Secretary has determined that foreign policy controls will thwart these persons' access to U.S.-origin items and their ability to divert such items to unauthorized end users or end uses.

Russia Industry Sector Sanctions

The Secretary has determined that the imposition of these foreign policy controls is likely to achieve the intended national security and foreign policy purposes. These sanctions enable Commerce to control and, if necessary, prevent the export, re-export or transfer (in-country) of items that could enhance Russia's energy sector production and therefore contribute directly or indirectly to the financial enrichment or to the military capabilities of the Russian government, which continues its actions in the Crimea Region of Ukraine (Occupied) and in eastern Ukraine.

Russian Occupied Crimea Region of Ukraine

The Secretary has determined that these foreign policy controls are likely to achieve the intended national security and foreign policy purposes. This rule advances United States foreign policy interests by creating a mechanism whereby Commerce can control and if necessary prevent the export, re-export or transfer (in country) of items that could contribute directly or indirectly to the misappropriation of assets in the Crimea region of Ukraine and the activities of the Russian military and government in the Crimea region of Ukraine that create an unusual and extraordinary threat to the national security and foreign policy of the United States.

Sudan

The Secretary has determined that foreign policy controls will restrict the government of Sudan's ability to obtain and use U.S.-origin items in support of military activities. The controls are also likely to impede terrorist activities in Sudan and support international efforts to end the humanitarian crisis in Darfur.

Syria

The Secretary has determined that foreign policy controls will impede the further development of Syria's Weapons of Mass Destruction programs and restrict the government's ability to commit acts of violence against its own people, while certain licensing policies will allow the provision of aid and other material to support the Syrian opposition and Syrian civilians. The Secretary has also determined that foreign policy controls will contribute to the government of Syria ending its support of terrorist groups in Lebanon and elsewhere and its abuse of the human rights of its citizens.

United Nations Security Council Arms Embargoes

The Secretary has determined that the foreign policy controls will meet U.S. obligations under the relevant UN Security Council arms embargoes and partial embargoes on Central African Republic, the Democratic Republic of the Congo, Eritrea, Iran, Iraq, Lebanon, Libya, North Korea, Somalia, Sudan, and Yemen.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that these controls are compatible with U.S. foreign policy objectives, and that the extension of these controls will not have any significant adverse foreign policy consequences. The controls complement U.S. foreign policy and other aspects of U.S. relations with these persons and countries. They encourage these persons and governments to modify their actions with the goal of improving conditions in the applicable region. These controls are consistent with U.S. foreign policy goals of promoting peace and stability, and preventing weapons proliferation and human rights abuses.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective and that any adverse reaction by other countries would not be counterproductive to U.S. foreign policy interests. Notwithstanding the fact that most countries have not imposed embargoes as comprehensive as those of the United States, and that some countries have challenged certain U.S. controls as unwarranted extraterritorial measures, the overriding foreign policy objective of maintaining these controls outweighs any negative foreign reactions. Opposition to U.S. foreign policy-based controls by many of our major trading partners, including some close allies, continues to be a point of contention. This reaction has led some foreign firms to “design out” U.S. components or to cite the lack of their own national sanctions as a marketing tool to secure business contracts that might have gone to U.S. companies. In some instances, foreign governments have instructed foreign firms to ignore U.S. re-export controls. However, in certain areas, such as the nuclear threat posed by Iran and North Korea, Russia’s destabilization of eastern Ukraine and the Crimea region of Ukraine, the Government of Syria’s egregious abuses of human rights and use of chemical weapons, including the use of violence and torture, arbitrary arrests, detentions and executions of peaceful civilians, and the genocide in the Darfur region of Sudan, the United States has received broad international support from other countries for its sanctions policies.

Certain Designated Persons

Many countries support U.S. efforts to ensure that exports and re-exports of U.S.-origin items are not used in terrorist activities, the development of WMD, or by entities or foreign governments that are perpetrating or promoting civil unrest in their own or other countries. The Department of Commerce promotes these shared objectives by imposing license requirements, with a general policy of denial, that prevent groups and individuals designated by the Department of the Treasury from acquiring items that could aid or assist these groups in committing future acts deemed to support these activities. Although some countries have imposed restrictive legislation, very few maintain export controls similar to those implemented by the United States. Many countries have imposed controls on entities specifically designated in U.N. Security Council Resolutions.

Certain Military End Uses and Military End Users

Although the United States primarily maintains these military end use and military end user controls unilaterally, many countries appreciate the concerns that precipitated their imposition. The European Union currently maintains military end use and end user controls on dual-use items destined for Russia.

Cuba

Although most countries recognize the right of the United States to determine its own foreign policy and security concerns, many countries continue to oppose controls on trade between the United States and Cuba. For example, an annual United Nations General Assembly resolution condemning the embargo regularly is adopted with overwhelming support. In 2016, the vote was 191 in favor and none opposed. The United States and Israel abstained.

Iran

On Implementation Day (January 16, 2016), the United States lifted nuclear-related “secondary” sanctions on Iran as part of the implementation of the Joint Comprehensive Plan of Action, an international agreement among the United States, the PRC, France, Russia, the United Kingdom, Germany, the European Union, and Iran. These sanctions apply to non-U.S. persons’ activities that occur outside the United States. A range of non-nuclear-related sanctions target Iran’s support for terrorism, human rights abuses, ballistic missile development, and other destabilizing activities and remain in place. Apart from certain very limited exceptions, the U.S. primary embargo, including restrictions on exports and re-exports of items subject to the EAR by both U.S. persons and non-U.S. persons, also remains in effect. The E.U. also lifted a range of sanctions on Iran on Implementation Day, and UN Security Council Resolution 2231 (2015), which terminated six nuclear-related Resolutions pertaining to Iran, came into effect. However, the new resolution maintains restrictions related to conventional arms and ballistic missile-related activities.

Iraq

In accordance with its obligations as a member of the United Nations, the United States continues to impose an arms embargo on military end users not under the authority of the Iraqi Government.

North Korea

The United States maintained a comprehensive trade embargo against North Korea for 50 years, until June 19, 2000. During that time period, U.S. allies largely acted in coordination with the United States to deny North Korea strategic equipment and technology. Similarly, the easing of U.S. sanctions on North Korea and the removal of some sanctions in June 2000 were echoed by

other countries. However, as a result of North Korea's nuclear and missile tests in 2006 and 2009, the United Nations Security Council adopted UNSCRs 1718 and 1874, imposing additional sanctions on North Korea and demonstrating international disapproval of North Korea's nuclear and ballistic missile-related activities. The Department of Commerce imposed stringent export and re-export sanctions on the country consistent with these UNSCRs and in accordance with certain statutory legal obligations. North Korea's subsequent missile testing and activity on April 13, 2012 and December 12, 2012 was also condemned by most nations, and on January 22, 2013, UNSCR 2087 passed unanimously condemning North Korea's December 2012 launch as a violation of the UN ban on North Korean ballistic missile tests. North Korea's nuclear testing on February 12, 2013 was likewise condemned, and on March 7, 2013, UNSCR 2094 passed, also unanimously, condemning the new testing and imposing additional sanctions on North Korea. As a result of North Korea's nuclear and missile tests in the early months of 2016, the United Nations Security Council adopted UNSCR 2270 on March 2, 2016, imposing the most stringent sanctions on North Korea to date. Pursuant to these UN sanctions, and on the basis of other relevant laws and regulations, the Department of Commerce continues to apply sanctions on North Korea, which other countries generally support.

Persons Sanctioned by the State Department

Although other countries share U.S. concerns regarding the diversion of goods to unauthorized end users or end uses, few countries maintain controls similar to those implemented by the United States.

Russian Industry Sector Sanctions

The Secretary has determined that other countries are unlikely to raise objections to the controls. Other countries have condemned Russia's illegal actions in Ukraine and taken steps to impose costs on Russia such as the suspension of military cooperation and sales with Russia. Controls on energy sector exports and military exports are consistent with sanctions imposed by the European Union pertaining to exports to Russia's energy sector, as well as steps taken by other countries to impose sanctions on Russia in the financial, defense and energy sectors. Although the United States is implementing these sanctions in cooperation only with European Union member states and Norway, that is not likely to render them ineffective, nor will adverse reaction by other countries be counterproductive to U.S. national security and foreign policy interests.

Russian Occupied Crimea Region of Ukraine

The Secretary has determined that other countries are unlikely to raise objections to the sanctions. Other countries have likewise objected to Russia's illegal actions in Ukraine, and have taken steps to impose sanctions on Russia such as the suspension of military cooperation with and sales to Russia. The European Commission has also restricted trade with the Crimea region of Ukraine in response to Russia's actions there, including a ban on the import into the EU of goods originating in Crimea (or Sevastopol), a broad ban on investments in those two areas, and controls on certain goods and technologies "suited for use" in key sectors. Although

not all countries have imposed sanctions in response to Russia's actions in this region, that fact is not likely to render the BIS sanctions ineffective, nor would adverse reaction by other countries be counterproductive to United States national security and foreign policy interests.

Sudan

The United States maintains sanctions on Sudan because of its continued support for international terrorism, ongoing efforts to destabilize neighboring governments, and the prevalence of human rights violations, including slavery and the denial of religious freedom to Sudanese religious minorities, and the commission of atrocities in Darfur. Sanctions against Sudan have not been modified because Sudan has not taken sufficient steps to resolve the conflict in Darfur or undertaken reform in these other areas. The United States continues to consult with other countries regarding the humanitarian crisis in Darfur bilaterally and multilaterally, including through the United Nations.

Syria

The United States maintains controls in response to Syria's attacks on its own citizens, its use of chemical weapons against its own citizens, its continued support for terrorist groups, its failure to interdict the flow of foreign fighters destined for Iraq, its interference in Lebanon's internal affairs, and the ongoing abuse of the human rights of its citizens. Many other countries concur that Syria's regional activities are destabilizing, and a small but growing number of countries maintain controls similar to, but less comprehensive than, those implemented by the United States. The European Union maintains an oil embargo and restricts the export of certain items destined for Syria's oil and gas industries.

United Nations Security Council Arms Embargoes

The United States maintains controls in accordance with the UN Security Council arms embargoes and partial embargoes on Central African Republic, the Democratic Republic of the Congo, Eritrea, Iran, Iraq, Lebanon, Libya, North Korea, Somalia, Sudan, and Yemen. These controls are compatible and consistent with the controls adhered to by the 41 participating states in the Wassenaar Arrangement, and with the controls imposed by other UN member states as a result of the UN Security Council arms embargoes.

4. *Economic Impact on United States Industry.* The Secretary has determined that any adverse effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives.

Certain Designated Persons

The Department of Commerce only reviewed a small number of license applications involving exports and re-exports to persons subject to licensing requirements imposed by Commerce due

to their designation in or pursuant to Executive Orders maintained by the Treasury Department in fiscal year 2016. This limited set of applications suggests that the economic impact of these controls is likely minimal. The Treasury Department maintains restrictions on activities of U.S. persons involving designated terrorist entities and proliferators. The Department of Commerce's controls complement the Treasury Department's controls and extend to non-U.S. persons' re-exports of items subject to the EAR to certain designated persons covered by Commerce licensing requirements.

Certain Military End Uses and Military End Users

These controls only apply to transactions involving a military end use or military end user and only a small, discrete group of items are subject to them. Therefore, their overall impact on U.S. industry is likely limited.

Cuba

The U.S. Government requires authorization in the form of either a license or a License Exception Agricultural commodities (AGR) confirmation for the export or re-export to Cuba of most U.S.-origin commodities, technology, and software subject to the EAR. The number of licenses and confirmations that the Department of Commerce issued for exports or re-exports to Cuba increased significantly from 1998 through 2002, due to changes in U.S. export policies made during the late 1990s. Since then, there has been a general decline in the number of licenses and confirmations issued. U.S. export sanctions on Cuba have had some impact on U.S. industry. However, the authorized export of large volumes of agricultural commodities since the enactment of TSRA in 2000 has somewhat offset this impact.

In fiscal year 2016, the Department of Commerce approved 254 license applications for exports and re-exports to Cuba, valued at nearly \$2.2 billion. Also during fiscal year 2016, the Department issued 99 confirmations of authorization under AGR valued at approximately \$3 billion. The Department of Commerce and reviewing agencies had no objections to the License Exception AGR notices submitted during that period. The number of approved licenses and confirmations totaled 355, valued at nearly \$5.2 billion.

In fiscal year 2016, the Department returned without action 207 license applications for exports and re-exports to Cuba, valued at over \$921 million, and denied two Cuba license applications, valued at almost \$947,000. The Department did not revoke any previously validated licenses during this period.

According to the Central Intelligence Agency's (CIA) *World Factbook*, Cuba imported an estimated \$15.24 billion in commodities in 2015 (the most recent year for which statistics are available), up from \$13.11 billion the year before. Leading Cuban imports included petroleum, food, machinery and equipment, and chemicals. Cuba's leading suppliers were Venezuela (31.8 percent), the PRC (17.6 percent), Spain (10 percent), and Brazil (4.8 percent).

Iran

The U.S. Government maintains a policy of denial for license applications for exports and re-exports of items on the CCL to Iran, consistent with the provisions of the Iran-Iraq Arms Non-Proliferation Act of 1992 and the U.S. trade and investment embargo implemented in 1995.

Consistent with the Trade Sanctions Reform and Export Enhancement Act of 2000 (TSRA), the U.S. Government authorizes exports and re-exports of food, agricultural equipment, medicine, and medical supplies and equipment to Iran.

Since 1996, the Department of the Treasury has had primary jurisdiction for the export and re-export to Iran of items subject to the EAR. The Department of Commerce retains license requirements for deemed exports or deemed re-exports (releases of U.S. technology or source code subject to the EAR to Iranian nationals in the United States or in a third country). The Department of Commerce approved 226 deemed export licenses for Iranian nationals and one for the export of inflatable escape slides for use on civil aircraft to an Iranian person on BIS's Entity List during fiscal year 2016.

Prior to the sanctions, the United States competed with Iran's major trading partners in exports of industrial machinery, motor vehicles and auto parts, power generating machinery, measuring and controlling devices, computers, plastics and resins, and industrial organic chemicals. According to the CIA *World Factbook*, Iran imported an estimated \$71 billion worth of industrial supplies, capital goods, foodstuffs and other consumer goods, and technical services in 2015. Iran's leading suppliers were the United Arab Emirates (UAE) (39.6 percent), the PRC (22.4 percent), Turkey (8 percent), and Japan (4.5 percent).

Iraq

Although the security situation in Iraq continues to be of concern to the United States, the United States also fully supports Iraq's reconstruction and economic revival. Current licensing policy and requirements reflect the complexity and challenges of doing business in Iraq.

U.S. export controls specific to Iraq have had little impact on U.S. industry, because the primary focus of those controls is on arms sales to non-coalition forces. Since licensing jurisdiction for Iraq was returned to the Department of Commerce in 2004, the majority of license applications received have been for equipment in support of or for use in the reconstruction of Iraq and training activities for its police and military.

In fiscal year 2016, the Department approved 75 license applications for Iraq, valued at \$87,070,558 million. The Department returned 16 license applications without action in 2016, valued at \$15,859,262 million. In 2016, the Department did not deny any license applications for Iraq.

According to the CIA *World Factbook*, Iraq imported an estimated \$42.94 billion in commodities in 2015 (the most recent year for which statistics are available), down from an estimated \$45.2 billion in 2014. Leading Iraqi imports included food, medicine, and manufactured goods. Iraq's leading suppliers were the PRC (22.6 percent), India (21.1 percent), South Korea (11.2 percent), the United States (7.8 percent), Italy (6.7 percent) and Greece (6 percent).

North Korea

A BIS license is required for the export or re-export to North Korea of all items subject to the EAR, with the exception of food and medicines designated as EAR99 (i.e., medicines subject to the EAR but not listed on the CCL). As a result of the small size of the North Korean economy, U.S. export sanctions on North Korea have had a minimal impact on U.S. industry. Agricultural products and humanitarian goods are the primary U.S. exports to North Korea.

In fiscal year 2016, the Department approved 15 license applications, valued at \$7.6 million. The total license value in 2016 was lower than in 2015 (\$11 million), and the number of licenses approved decreased (18 in 2015). The Department of Commerce returned without action eight license applications. No license applications were denied during 2016.

The CIA *World Factbook* estimates that North Korean imports totaled \$5.2 billion in 2014 (the most recent year for which figures are available) with primary imports including petroleum, coking coal, machinery and equipment, textiles, and grain. North Korea's leading sources of imports in 2015 were the PRC (76.4 percent) and the Republic of the Congo (5.5 percent).

Persons Sanctioned by the State Department

The impact on U.S. industry of these controls is minimal as they target a very limited number of persons listed on the Entity List (Supplement No. 4 to part 744 of the EAR).

Russia Industry Sector Sanctions

The Secretary has determined that the foreign policy controls on Russia's energy sector on U.S. industry will have an impact on U.S. oil field servicing industries, but that the cost to these industries resulting from these sanctions does not exceed the benefit to U.S. foreign policy. In 2016, the Department of Commerce denied two license applications and returned four license applications without action under the Russia energy sector sanctions.

Russian Occupied Crimea Region of Ukraine

The Secretary has determined that these foreign policy controls may have an impact on U.S. industries, but that the cost to industry resulting from this rule does not exceed the benefit to U.S. foreign policy. The Commerce Department implements its mandate to control certain exports and re-exports to maximize the national security and foreign policy effect of export controls

while minimizing the negative effect on U.S. industry of these controls. United States exports to Ukraine in 2016 totaled \$670.4 million but the portion of this trade that is attributable to the Crimea region of Ukraine is difficult to determine from the available statistics.

In fiscal year 2016, the Department of Commerce approved four license applications for Crimea, valued at \$8.3 million. All were for medical devices. The Department returned two license applications without action in 2016. No license applications were denied.

Sudan

The United States imposed comprehensive sanctions on Sudan in 1997 in response to the Government of Sudan's support for international terrorism, efforts to destabilize neighboring governments, and commission of human rights violations. The Departments of Commerce and the Treasury maintain license requirements for certain exports and re-exports to Sudan of items subject to the EAR. As a general matter, both agencies issue export licenses for items on the CCL. The Department of the Treasury is solely responsible for licensing the export of agricultural commodities, medicines, and medical items that are not listed on the CCL (designated as EAR99) under the provisions of the TSRA and is also responsible for licensing other EAR99 items. As noted above, licenses may be required from both agencies for the same transaction.

U.S. unilateral export sanctions on Sudan have had a minor impact on U.S. industry. Sudan was not a significant export market for the United States before comprehensive sanctions, including new Department of the Treasury sanctions, were imposed in 1997. Moreover, a large proportion of exports to Sudan prior to this year involved items designated as EAR99, which did not require (and continue to not require) a Department of Commerce license for export or re-export to Sudan.

In fiscal year 2016, the Department of Commerce approved 42 license applications for Sudan, valued at \$40,271,621 million. The Department returned nine license applications without action in 2016. The Department of Commerce denied three license applications, valued at \$44,991,960.

According to the *CIA World Factbook*, Sudan's total imports from all sources were valued at \$8.3 billion in 2015. Leading suppliers to Sudan were UAE (32 percent), the PRC (16.2 percent), Saudi Arabia (15.5 percent), Australia (4.7 percent), and India (4.2 percent). Leading imports were foodstuffs (including wheat), manufactured goods, refinery and transport equipment, medicines, chemicals, and textiles.

Syria

The U.S. Government requires a license for the export and re-export to Syria of all U.S.-origin commodities, technology, and software subject to the EAR except for food and certain medicine designated as EAR99. U.S. export sanctions on Syria have had a minimal impact on U.S.

industry. Medical items, humanitarian goods, and exports in support of the Syrian opposition and the Syrian people are the primary U.S. exports and re-exports to Syria.

Fiscal year 2016 licensing volume increased to 232 approved licenses compared to 198 in 2015, while dollar values increased to \$2.9 billion in 2016 compared to \$2.6 billion in 2015. Also during fiscal year 2016, the Department returned without action 41 license applications. BIS denied 2 license applications, 1 license application for the export of database management software to a telecommunication company, and 1 license application to export lumber for distribution to unknown end users in Syria.

The licensing dollar values have remained historically high for Syria over the past three reporting periods, reflecting increases in humanitarian aid, support for Syrian democracy activists, and support for Syrian opposition forces.

According to the CIA *World Factbook*, Syria imported an estimated \$6.5 billion in commodities in 2015. Leading Syrian imports include machinery and transport equipment, electric power machinery, food and livestock, metal and metal products, chemicals and chemical products, plastics, yarn, and paper. Syria's leading suppliers in 2015 (the most recent year for which figures are available) were Saudi Arabia (27.9 percent), the UAE (13.7 percent), Iran (10.1 percent), Turkey (9 percent), Iraq (8.3 percent), and the PRC (6.1 percent).

United Nations Security Council Arms Embargoes

The United States maintains controls in accordance with the UN Security Council arms embargoes and partial embargoes on Central African Republic, the Democratic Republic of the Congo, Eritrea, Iran, Iraq, Lebanon, Libya, North Korea, Somalia, Sudan, and Yemen.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to effectively enforce these controls. Controls on exports to embargoed and sanctioned countries and persons, including those discussed in this Chapter, raise a number of challenges. These include the need to concentrate limited resources on priority areas, develop new strategies to limit re-export violations, strengthen the cooperative relationship with other law enforcement agencies in the United States and overseas, and maintain a consistent outreach effort to help limit U.S. business vulnerability. Overall, the sanctions are generally understood and supported by the U.S. public. Voluntary cooperation from most U.S. exporters is common.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk. BIS also provides educational outreach to foreign trade groups.

The Department conducted a number of enforcement actions regarding noncompliance with these export controls, including:

Mozaffar Khazae

Jet Engine Parts and Materials to Iran

On October 23, 2015, Mozaffar Khazae, a dual citizen of Iran and the United States, was sentenced in U.S. District Court for the District of Connecticut to 97 months in prison, three years of supervised release, a \$50,000 criminal fine, and a \$100 special assessment for his role in attempting to send to Iran highly sensitive, proprietary, trade secret and export controlled material relating to U.S. military jet engines, stolen from multiple U.S. defense contractors where he had previously been employed. On February 25, 2015, Khazae pled guilty to the unlawful export and attempted export of defense articles from the United States to Iran in violation of the Arms Export Control Act. Between 2001 and 2013, Khazae, a Ph.D. in mechanical engineering, was employed by three U.S. defense contractors. From 2009 through late 2013, Khazae offered to provide trade secret, proprietary and export controlled defense technology that he had stolen from his employers to gain employment with state-controlled technical universities in Iran. In November 2013, while residing in Connecticut, Khazae attempted to send a large shipping container to Iran. The shipment included thousands of highly sensitive technical manuals, specification sheets, test results, technical drawings and data and other proprietary material relating to U.S. military jet engines, including those relating to the U.S. Air Force's F35 JSF program and the F-22 Raptor. The materials in the interdicted shipment were prominently labeled with strict export control warnings. On January 9, 2014, Khazae was arrested at the Newark Liberty International Airport before boarding a flight to Iran. Search warrants executed on Khazae's checked and carry-on luggage revealed additional hard copy documents and computer media containing sensitive, proprietary, trade secret and export controlled documents relating to U.S. military jet engines. Khazae was also found in the possession of \$59,945.00 in as-yet undeclared cash, which he had split up into increments of approximately \$5,000 and secreted in multiple bank envelopes in various places in his carry-on luggage. This was a joint investigation with OEE's Boston Field Office, ICE, the FBI, and the U.S. Air Force Office of Special Investigations (AFOSI).

Oguzhan Aydin

Airplane Parts to Iran via Turkey

On March 30, 2016, Oguzhan Aydin, a Turkish national, was sentenced in U.S. District Court for the Northern District of Georgia to 30 months in prison, five years of supervised release, and a \$25,000 criminal fine. On October 13, 2015, Aydin pled guilty (15 USC §1705) in connection with the attempted procurement of F-14 fighter jet parts and C-130 parts for final delivery to Mahan Airways in Iran via Turkey. In July 2012, Aydin and several-conspirators were indicated for violations of IEEPA and the Arms Export Control Act. Mahan Airways has been the subject of a BIS Temporary Denial Order since March 17, 2008. Aydin paid approximately \$40,000 as a down payment for the purchase of the parts. In August 2014, Aydin was arrested upon his arrival to the United States in Houston, Texas and was extradited to the Northern District of Georgia. This was a joint investigation with OEE's Washington Field Office and ICE.

Fokker Services B.V.

Aircraft Parts, Technology and Services to Iran and Sudan

On June 2, 2016, the Assistant Secretary approved a settlement agreement under which Netherlands-based aerospace provider Fokker Services B.V. (FSBV) agreed to pay a civil penalty of \$10,500,000. FSBV also accepted responsibility for its criminal conduct in violating the International Emergency Economic Powers Act and entered into a deferred prosecution agreement with the Department of Justice. As part of that agreement, FSBV also paid \$10,500,000 to satisfy a forfeiture obligation. Between July 2005 and September 2010, FSBV repeatedly engaged in illegal transactions involving the export and re-export of aircraft parts, technology, and services to Iran and Sudan, while fully aware, including the company's senior management and its legal and compliance departments, of the applicability of U.S. export control laws, including the EAR. The knowing and willful violations included FSBV's sale and transfer to and servicing for end users in Iran, including Iranian military end users, of parts and components used in aircraft avionics and navigation systems and in engine, communications, and other aircraft systems, as well as other parts and components. FSBV used a number of schemes, or "work arounds," to evade U.S. export control laws and avoid detection by U.S. law enforcement authorities. FSBV, for example, concealed material information from its vendors and suppliers in the United States (and U.K.), including by stripping identifying information associated with Iranian aircraft from items and packaging before sending the parts to repair shops, providing repair shops with false tail numbers, and providing false end user or ownership information, including with regard to transactions involving Iran Air. Other "work arounds" included using a "black list" that tracked which U.S. companies were more likely to ask for end user statements or ask questions about the origin of parts, directing business to other U.S. companies, and inserting an automatic electronic alert notice into an internal database that reminded employees to withhold information about Iranian end users from repair shops and suppliers. BIS alleged that Fokker committed 253 violations of the EAR, including 96 violations for engaging in transactions with Iran Air contrary to the terms of a BIS Temporary Denial Order. These 253 transactions involved items classified under ECCNs 1A001, 7A103, 6A998, 7A994, and 9A991, controlled for missile technology, national security, and anti-terrorism reasons, and valued in total at approximately \$10.7 million. This case resulted from a multi-year investigation led by OEE's Boston Field Office, OFAC, the FBI, ICE, DCIS, and the U.S. Attorney's Office for the District of Columbia.

David Maricola

Military Items to Various Countries

On August 24, 2016, David Maricola was sentenced in U.S. District Court for the District of Massachusetts to 33 months in prison, three years of supervised release, and a \$3,200 special assessment. On April 7, 2016, Maricola pled guilty (22 USC §2778, 18 USC §1001, 18 USC §1956, 18 USC §371) in connection with the unauthorized export of hundreds of firearms components, including parts for assault rifles, from his residence in Massachusetts to 22 countries. On customs documents, Maricola lied about the contents and value of the packages of

firearms components he exported overseas. This was a joint investigation with OEE's Boston Field Office, DCIS, ICE, and the Department of Defense's Office of Inspector General.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

The U.S. Government has made reasonable efforts to achieve the purposes of the U.S. embargoes and sanctions through negotiations with other countries, through international fora, and through the United Nations, as outlined in the specific descriptions that follow.

Certain Designated Persons

The United States cooperates with allies and partners and shares information on the activities of designated terrorist entities. It is expected that strong international support for the U.S. fight against terrorism will further facilitate dialogue on foreign export control expansion.

Certain Military End Uses and Military End Users

The United States works with other nations multilaterally and bilaterally to address concerns about the adverse actions of certain militaries. Other countries share these concerns and join in the United States' efforts to find diplomatic solutions.

Cuba

The U.S. Government has worked diligently with other nations, especially countries in Europe and Latin America, to resolve disputes that arise as a result of the U.S. embargo. President Obama's policy of engagement has received near universal support from other nations, most of which share the ultimate goal of the emergence of a stable and prosperous Cuba.

Iran

On January 16, 2016, the United States lifted nuclear-related secondary sanctions on Iran as part of the Joint Comprehensive Plan of Action. A range of non-nuclear related sanctions that target Iran's support for terrorism, human rights abuses, and destabilizing activities remain in place. Apart from certain very limited exceptions, the U.S. primary embargo, including restrictions on exports and re-exports of items subject to the EAR by both U.S. persons and non-U.S. persons, also remains in effect.

Iraq

The United States continues multilateral and bilateral discussions with several countries concerning effective implementation of the United Nations arms embargo.

North Korea

The United States continues multilateral and bilateral discussions with various countries, including the People's Republic of China, Japan, the Republic of Korea (South Korea), and Russia on the ongoing issues concerning the nuclear and ballistic missile-related activities of North Korea. The United States is working with these and other countries to ensure effective implementation of sanctions under UN Security Council resolutions, and will continue to work with these countries to achieve the verifiable denuclearization of the Korean Peninsula.

Persons Sanctioned by the State Department

The United States consults on a regular basis with other countries on proliferation and trafficking-related issues. Although other countries share U.S. concerns regarding the diversion of goods to unauthorized end users or end uses, few countries maintain controls similar to those implemented by the United States, beyond those entities included in UNSCRs.

Russian Industry Sector Sanctions

European allies have coordinated their imposition of sanctions with the United States, and U.S. sanctions against Russian interests have international support. The Administration will continue to consult with our partners and allies and strive to coordinate the application of multilateral sanctions in order to dissuade Russia from further destabilizing actions against Ukraine.

Russian Occupied Crimea Region of Ukraine

The United States coordinated the imposition of sanctions on Russia and Russian interests in the Crimea region of Ukraine with the Government of the Ukraine and European allies. United States sanctions against Russian interests have international support. While the United States is applying these sanctions unilaterally, the Administration will continue to consult with our partners and allies and strive to coordinate the application of multilateral sanctions in order to dissuade Russia from further destabilizing actions against Ukraine.

Sudan

The United States continues to consult with the United Nations, in addition to other countries and entities in both bilateral and multilateral fora, regarding the regional conflicts in Sudan, the commission of human rights abuses against civilians, and the humanitarian needs of the population.

Syria

The United States worked in a multilateral manner to dismantle Syria's stockpile of chemical and biological weapons, and continues to coordinate with other countries to prevent the resumption of these programs or the development of any nuclear or missile proliferation programs, as well as the Syrian government's interference in Lebanon and its support for terrorism, its commission of human rights abuses against its citizens, and the flow of foreign fighters through Syria destined for Iraq. Additionally, although the U.S. Embassy in Syria remains closed for security reasons, the United States continues to communicate its concerns to the Government of Syria directly and forcefully through the Syrian Ambassador in Washington and other diplomatic channels.

United Nations Security Council Arms Embargoes

Most countries support international efforts to stabilize affected countries in order to prevent further ethnic conflict and regional instability, including through compliance with the United Nations arms embargoes.

E. Alternative Means

The U.S. Government imposes embargoes and sanctions in an effort to make a strong statement against a particular country's policies or a person's actions. Restrictions on exports can supplement other actions that the U.S. Government takes to change the behavior of the target countries and persons, including such actions as severing diplomatic relations, banning imports into the United States, seeking UN denunciations, and curtailing or discouraging bilateral educational, scientific, or cultural exchanges. The U.S. Government has had some success using these alternative means to reach the intended foreign policy objectives. Nonetheless, the embargoes and sanctions remain an important part of the U.S. Government's foreign policy. U.S. Government embargoes and sanctions complement diplomatic measures and continue to be used to influence the behavior of these countries.

F. Foreign Availability

The foreign availability of items controlled under Section 6(a) of the EAA has been considered by the Department of Commerce. In general, numerous foreign sources of commodities and technology similar to those subject to these controls are known, especially for items controlled by the U.S. Government. Although the embargoes and comprehensive sanctions described in this Chapter are widely followed and many have significant multilateral support, the U.S.

Government's continued use of embargoes and sanctions serve foreign policy interests that override the impact of foreign availability.

CHAPTER 6

Toxic Chemicals, Chemical Precursors, and Associated Equipment, Technology, and Software Controls (Sections 742.2, 742.18, 744.4, 744.6, and 745)¹¹

Export Control Program Description and Licensing Policy

The U.S. Government maintains export controls on certain chemicals, equipment, materials, software, technology, and entire plants to further U.S. foreign policy and prevent the proliferation and use of chemical weapons. The U.S. Government implements these controls in coordination with the Australia Group (AG), an informal forum of 41 nations and the European Commission that is dedicated to halting the proliferation of chemical and biological weapons. (See Appendix II for a complete list of AG members.) Also, the United States fulfills its obligations under the Chemical Weapons Convention (CWC or the Convention) by maintaining controls on certain chemicals.¹²

Australia Group Controls

The AG was formed in 1985 when the United States and 14 other nations agreed to enhance and harmonize controls on chemicals that could be used to produce chemical weapons. Since then, the AG has expanded its membership and has expanded its export control list to cover toxic biological agents and dual-use chemical and biological production-related equipment and technologies. Member countries use the AG common control list and guidelines as a basis for developing and imposing their domestic export controls. The AG has a “no-undercut” policy, which requires consultation with another AG partner that had previously denied the export of an AG-controlled item if a proposed transaction is essentially identical.

License Requirements and Licensing Policy for AG Controls

The licensing requirements for chemicals, equipment, materials, software, technology, and entire production facilities imposed in accordance with AG commitments are noted below. There are 20 entries on the Commerce Control List (CCL) that are subject to chemical controls.

The U.S. Government requires a license for the export to all destinations other than AG member countries of chemical weapons precursor and intermediate chemicals, as identified on the AG common control list, technology for the development, production, and disposal of such items, relevant process control software, and the facilities designed to produce such chemicals.

¹¹ Chapter 7 of this report addresses U.S. biological controls.

¹² The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (the “Chemical Weapons Convention” or CWC) was ratified by the United States on April 25, 1997, and entered into force on April 29, 1997.

The U.S. Government also requires a license for the export to all destinations, other than AG member countries, of certain chemical manufacturing facilities and equipment, toxic gas monitoring systems and detectors that can be used in the production of chemical warfare agents, and the technology for the development, production, and disposal of such items. The countries to which these licensing requirements apply are listed in Column CB2 of the Commerce Country Chart, Part 738, Supplement No. 1 of the Export Administration Regulations (EAR). These licensing requirements also apply to the export of these items to designated terrorist-supporting countries.

In addition, the U.S. Government controls all items subject to the EAR because of chemical weapon end-use or end user concerns as part of the Enhanced Proliferation Control Initiative (EPCI).

- The U.S. Government requires a license for the export of any commodity, technology, or software to all destinations, worldwide, including to AG member countries, when the exporter knows that it will be used in the design, development, production, stockpiling, or use of chemical weapons. In addition, the U.S. Government may inform an exporter or re-exporter that a license is required due to an unacceptable risk that the items will be used in, or diverted to, chemical weapons proliferation activities anywhere in the world.
- No U.S. person may knowingly support such an export, re-export, or transfer (in-country) without a license. “Support” is defined as any action, including financing, transportation, or freight forwarding that facilitates the export, re-export, or in-country transfer of these items.
- In addition, no U.S. person may, without a license, perform any contract, service, or employment knowing that it will directly assist the design, development, production, stockpiling, or use of chemical weapons in, or by, any country or destination worldwide.

The Department of Commerce, in coordination with the Departments of Defense, Energy, and State, reviews applications for licenses to export AG-controlled items on a case-by-case basis to determine whether the export would make a material contribution to the design, development, production, stockpiling, or use of chemical weapons. When the Department of Commerce determines, after interagency review, that an export will make a contribution meeting this standard, the Department will deny the application. For licenses to export AG-controlled items to the People’s Republic of China (PRC), this standard, set forth in Section 742.2(b)(1) of the EAR, applies, as does an additional review standard set forth in Section 742.4(b)(7) – whether the items would make a direct and significant contribution to China’s military capabilities. Exports of AG-controlled items to the PRC must be reviewed under both standards. When the Department of Commerce determines, after interagency review, that an export of an AG-controlled item to the PRC would meet either of these two standards, the Department will deny the license.

Trade Restrictions under the Chemical Weapons Convention

The CWC, which entered into force in April 1997, bans the development, production, acquisition, stockpiling, retention, use, or transfer of chemical weapons, and establishes an extensive verification regime. The CWC Annex on Chemicals groups specified chemicals, including toxic chemicals and chemical precursors, into three “Schedules.” Chemicals are listed in a schedule based on factors specified in the Convention, such as the level of toxicity and other properties that enable their use in chemical weapons applications.

The toxic chemicals and precursors on Schedule 1 were previously developed, produced, stockpiled or used as chemical weapons, or pose a high risk to the object and purpose of the CWC based on the dangers identified in the Convention and have little, if any, use in legitimate commercial applications. The toxic chemicals and precursors on Schedule 2 pose a significant risk to the object and purpose of the CWC and are not produced in large commercial quantities for legitimate purposes. The toxic chemicals and precursors on Schedule 3 have been produced or used as chemical weapons or pose a risk to the object and purpose of the CWC, based on the dangers identified in the CWC, and are produced in large commercial quantities for legitimate purposes.

The Department of State, under the International Traffic in Arms Regulations (ITAR), controls exports of the chemical warfare agents deemed to have military application, which by their ordinary and direct chemical action produce a powerful physiological effect. The Department of State controls all CWC Schedule 1 chemicals, except ricin and saxitoxin, which are under the control of the Department of Commerce. The Department of Commerce controls all Schedule 2 chemicals, except six chemical precursors that are controlled through the ITAR and therefore fall under the jurisdiction of the Department of State. All Schedule 3 chemicals are controlled by the Department of Commerce.

License Requirements and Licensing Policy for CWC Controls

The following is a summary of the export restrictions and licensing requirements for chemicals subject to the EAR that are imposed to fulfill CWC treaty obligations, as set forth in Section 742.18 of the EAR:

A. CWC Schedule 1 chemicals may only be exported or re-exported to CWC States Parties, and a license is required. Additionally, there are advance notification and annual reporting requirements for such exports. A license is also required for the export or re-export of Schedule 2 chemicals to countries that are not States Parties to the CWC. Exports of Schedule 3 chemicals destined to States not Party to the CWC require a license. Re-exports of Schedule 3 chemicals require a license when they are re-exported from a State not Party to the CWC to any other State not Party to the CWC.

B. Export license applications for Schedule 1 chemicals to CWC States Parties are reviewed on a case-by-case basis. The Department of Commerce approves exports of Schedule 1 and

Schedule 2 chemicals to CWC States Parties only for purposes not prohibited by the Convention. This is the underlying basis for the policy of denial for applications to export Schedule 1 and Schedule 2 chemicals to States not Party to the CWC. Additionally, there is a policy to deny applications to export Schedule 3 chemicals to States not Party to the CWC unless the importing country provides an End-Use Certificate. In addition, the U.S. Government reviews exports and re-exports of technology related to the development and production of mixtures containing perfluoroisobutene, phosgene, cyanogen chloride, and hydrogen cyanide on a case-by-case basis.

Summary of 2016 Changes

In the June 7, 2016 issue of the Federal Register, the Bureau of Industry and Security (BIS) published a final rule to amend the Export Administration Regulations (EAR) to implement the decisions of the February 2015 AG intersessional implementation meeting (IIM) and the understandings of the June 2015 Australia Group Plenary meeting. Specifically, this rule amended the CCL entry that controls chemical precursors by adding the chemical diethylamine (C.A.S. 109-89-7), which was not previously identified on the AG’s “Chemical Weapons Precursors” common control list.

The AG plenary is held annually and one intersessional implementation meeting is often held. Additionally, the AG communicates between meetings to review and refine the list of controlled chemicals, biological agents, and related equipment and technology. The 2016 AG intersessional IIM was held February 1-2, 2016 in Brussels, Belgium. The 2016 Plenary was held June 6-10, 2016 in Paris, France.

On July 28, 2016, BIS published a final rule that describes how articles the President has determined no longer warrant control under Category XIV (Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment) of the United States Munitions List (USML) are now controlled on the CCL. The final rule was published by BIS in conjunction with a final rule from the Department of State, Directorate of Defense Trade Controls, which amends the list of articles controlled by USML Categories XIV.

The final rule creates five new “600 series” ECCNs in CCL Category 1 (ECCNs 1A607, 1B607, 1C607, 1D607, and 1E607) that clarify the EAR controls applicable to certain dissemination, detection and protection “equipment” and related items that the President has determined no longer warrant control under USML Category XIV. These changes will become effective on December 31, 2016.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

The purpose of these controls is to support the efforts of the AG to halt the development and production of chemical weapons and to comply with international obligations under the CWC. In addition, these controls implement certain measures specified in Executive Order 12735 of

November 16, 1990, its successor, Executive Order 12938 of November 14, 1994, and the EPCI announced on December 13, 1990. In so doing, the controls provide the U.S. Government with the authority to regulate the export or re-export of any item from the United States when there is a significant risk that it will be used for chemical weapons proliferation purposes.

The AG works to further nonproliferation objectives through harmonizing export controls, exchanging information, and other diplomatic means. In addition to furthering the objectives of the AG, these controls support U.S. compliance efforts with the CWC. To ensure that States Parties to the Convention do not transfer chemicals that could assist other states to acquire chemical weapons, the CWC requires that States Parties restrict the export of certain chemicals listed in the CWC's Annex on Chemicals. The controls also support the goals of the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or other Gases, and of Bacteriological Methods of Warfare.

B. Considerations and Determinations of the Secretary of Commerce

1. *Probability of Achieving the Intended Foreign Policy Purpose.* The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose, in light of other factors, including AG membership of other producing countries, and that the foreign policy purpose cannot fully be achieved through negotiations or other alternative means. Many of the items covered by these controls have commercial uses and are widely available from foreign sources. Some of the major sources of these items are located in industrialized countries that are members of the AG and States Parties to the CWC. Although it is not expected that export controls alone can prevent the proliferation of chemical weapons, these controls strengthen U.S. and like-minded states' efforts to stem the spread of such weapons and continue to be a significant part of the overall nonproliferation strategy of the United States.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that these controls are compatible with U.S. foreign policy objectives and that the extension of these controls will not have any significant adverse foreign policy consequences. The U.S. Government has a strong interest in remaining at the forefront of international efforts to stem the proliferation of chemical weapons. These controls are compatible with the multilateral export controls for chemicals and related equipment and technology agreed to by the AG. Moreover, the U.S. Government has binding international obligations under the CWC: to refrain from developing, producing, acquiring, stockpiling, retaining, using or engaging in military preparations for the use of chemical weapons; to refrain from assisting, encouraging or inducing anyone to engage in prohibited activity; preventing anyone from engaging or assisting in prohibited chemical weapons activities; and implementing national legislation to penalize prohibited activities and to control certain chemical exports.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective; nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. The U.S. Government continues to discuss chemical export controls with countries outside of the AG to advance the

goals of nonproliferation. The governments of some developing countries claim that AG export controls discriminate against less industrialized nations by depriving them of goods and assistance in the field of chemical technology. The United States considers that these assertions are incorrect. In fact, in international forums, the U.S. Government has sought to dispel this perception by clarifying the purpose of the controls and by demonstrating that the U.S. Government denies few export license requests for shipment to developing countries.

4. *Economic Impact on United States Industry.* The Secretary has determined that any detrimental effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives.

In fiscal year 2016, the Department of Commerce approved 2,444 license applications valued at \$810,476,798 for the export or re-export of chemical precursors, equipment, and related technology. The Department denied 11 license applications valued at \$5,224,645, and returned without action 163 license applications valued at \$50,581,867. The primary reason for returning applications was for insufficient information about the transaction. The actual trade in these controlled commodities is significantly greater than the value of the license applications submitted because exporters may export many of these commodities to AG member countries without a license.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. The size, dispersion, diversity, and specialized nature of the dual-use chemical industry make detecting and investigating potential violations challenging for enforcement personnel. Challenges include distinguishing commercial procurement from chemical weapons-related transactions, and establishing appropriate commodity thresholds for targeting and tracking exports and re-exports for verification of end uses and end users. It is also difficult to detect and investigate cases under the “knowledge” standard set by the EPCI “catch-all” provision. Moreover, some countries have different standards for “catch-all,” which complicates law enforcement cooperation. In addition, enforcement officers may be exposed to personal safety risks when seizing and inspecting chemical materials.

To meet the challenge of effective enforcement of these controls, the Department of Commerce has directed resources toward preventive enforcement, in addition to continued efforts to pursue all leads on activities of concern provided by intelligence, industry, and other sources. Also, the Department of Commerce’s extensive outreach program educates companies about export controls related to chemical products and helps prevent the illegal export of dual-use products that can be used to make chemical weapons. In cases where unauthorized shipments of chemical materials have already taken place, the Department of Commerce has found that, as in other export control enforcement cases, analysis of commercial shipping documentation can lead to successful investigations and prosecutions.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

Violations of the Chemical Weapons Convention Regulations (CWCR)

There are no CWCR violations to report for fiscal year 2016.

C. Consultation with Industry

The Department of Commerce interacts with the chemical industry in a number of ways, including with individual companies seeking export licenses, through technical advisory committees (TACs), and through trade associations. BIS consults regularly with exporting firms on proposed export transactions and marketing plans to facilitate the thorough, yet prompt, review of export license applications. Through the TACs, the Department of Commerce keeps industry representatives abreast of proposals for the review of items on the CCL and gives them the opportunity to provide technical input. Comments from the Department's seven TACs are solicited on an ongoing basis and are not specific to this report.

The Department of Commerce works with chemical industry associations, including the American Chemistry Council and the Society of Chemical Manufacturers and Affiliates, and with government agencies such as the Departments of State, Defense, Energy and the Federal Bureau of Investigation, to gain valuable input regarding CWC implementation and to meet the United States' CWC responsibilities.

D. Consultation with Other Countries

These controls are consistent with the multilateral export control criteria of the AG, which includes many of the world's major chemical producers and traders. As such, the controls have been agreed through negotiations with the member countries of the AG. In addition, a number of non-AG countries, including India and China, have taken steps to adopt AG-type controls. An important element of the AG's efforts to curb the development of chemical weapons is encouraging non-members to observe similar export controls. The U.S. Government continues to encourage harmonization of export control provisions among AG participants to ensure a level playing field for U.S. exporters.

E. Alternative Means

The U.S. Government continues to address the problem of the proliferation of chemical weapons on a number of fronts. Direct negotiations with countries intent on acquiring chemical weapons are not likely to prevent the use of controlled materials in such activities, nor are such negotiations likely to affect the behavior of these countries.

Alternative means to curtail the acquisition and development of chemical warfare capabilities, such as diplomatic negotiations, do not obviate the need for controls. Examples of additional means that the U.S. Government has used and will continue to use, in an attempt to curb the use and spread of weapons of mass destruction, include:

- Sanctions: U.S. laws such as the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 (Pub. L. 102-182, Title III, Dec. 4, 1991, 105 Stat. 1245), the Iran-Iraq Arms Non-Proliferation Act of 1992 (Pub. L. 102-484) (Title XVI), and the Iran, North Korea, and Syria Nonproliferation Act (Pub. L. 105-292, 112 Stat. 2787, 50 U.S.C. § 1701 note) provide for the imposition of sanctions on foreign entities and countries for certain kinds of chemical and biological weapons-related activity. The U.S. Government has imposed sanctions under these authorities on certain entities for chemical weapons-related activities.
- Universality of the CWC: The CWC imposes a global ban on the development, production, stockpiling, retention, and use of chemical weapons by States Parties and prohibits States Parties from assisting, encouraging, or inducing a non-State Party to engage in such activities. The CWC also prohibits the direct or indirect transfer of chemical weapons, restricts trade in certain chemicals to States that are not States Parties to the CWC, and has created an international organization to monitor the destruction of chemical weapons and the production, use, and trade of toxic chemicals and chemical precursors in and among States Parties to the CWC.

As part of its CWC implementation activities, the Department of Commerce also collects industry reports regarding the production, processing, consumption, import, and export of toxic chemicals and chemical precursors for purposes not prohibited by the CWC (e.g., industrial, agricultural, and other peaceful purposes), which are forwarded to the Organization for the Prohibition of Chemical Weapons (OPCW) as part of the U.S. declaration. The Department of Commerce also acts as the lead, host, and escort for OPCW inspection teams as they inspect certain U.S. chemical facilities to verify that activities are consistent with the information provided in the U.S. declaration.

F. Foreign Availability

Past reviews conducted by the Department of Commerce revealed that a wide range of AG chemical precursors and production equipment are available from non-AG countries. Non-AG suppliers of precursors and related production equipment include Brazil, Chile, Colombia, India, China, South Africa, Malaysia, Taiwan, and Thailand. However, almost all non-AG suppliers have become States Parties to the CWC and take steps under this treaty to prevent chemical weapons development and production. Moreover, successful outreach by AG countries has led most non-AG suppliers to adopt export controls that closely mirror the AG's. As such, the U.S. Government has made efforts through its membership in both the AG and CWC to secure the

cooperation of foreign governments to control the foreign availability of chemical precursors and production equipment.

CHAPTER 7

Biological Agents and Associated Equipment and Technology Controls (Sections 742.2, 744.4 and 744.6)¹³

Export Control Program Description and Licensing Policy

The U.S. Government controls the export of certain microorganisms, toxins, biological equipment, and related technology to further U.S. foreign policy interests in opposing the proliferation and use of biological weapons. The U.S. Government implements these export controls multilaterally in coordination with the Australia Group (AG), an informal forum of 41 nations and the European Commission, cooperating to halt the proliferation of chemical and biological weapons. The U.S. Government also supports international efforts to secure a total ban on biological weapons in compliance with the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC).¹⁴

Australia Group Controls

The AG was formed in 1985 when the United States and 14 other nations agreed to enhance and harmonize controls on chemicals that could be used to produce chemical weapons. Since then, the AG has expanded its membership and its export control list to cover toxic biological agents and dual-use chemical and biological production related equipment and technologies. AG member countries use the AG common control list and guidelines as a basis for developing and imposing their domestic export controls. The AG has a “no-undercut” policy, which requires consultation with another AG partner that previously denied an AG-controlled item if a proposed transaction is essentially identical.

License Requirements and Licensing Policy

The licensing requirements for biological agents, related equipment, and technology, imposed in accordance with AG commitments, are noted below. There are 12 entries on the Commerce Control List (CCL) that are subject to biological controls.

A. The U.S. Government requires a license for the export to all destinations of certain human pathogens, zoonoses, toxins, animal pathogens, genetically modified microorganisms and plant pathogens, and the technology for the production and disposal of such items.

¹³ Chapter 6 of this report addresses U.S. chemical controls.

¹⁴ The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC) was signed in 1972 and ratified by the United States in 1975.

The U.S. Government requires a license for export to all destinations, other than AG member countries, of certain dual-use equipment and materials that can be used to produce biological agents and related technology. The countries for which this licensing requirement applies are those indicated in Column CB2 (Chemical and Biological Weapons, Column 2) of the Commerce Country Chart, Supplement No. 1 to Part 738 of the Export Administration Regulations (EAR), as well as the sanctioned destinations identified in Part 746 of the EAR.

The U.S. Government requires a license for the export of medical products identified in Export Control Classification Number (ECCN) 1C991.d. The countries for which this licensing requirement applies are those indicated in Column CB3 (Chemical and Biological Weapons, Column 3) of the Commerce Country Chart, Supplement No. 1 to Part 738 of the Export Administration Regulations (EAR), as well as the sanctioned destinations identified in Part 746 of the EAR.

The U.S. Government requires a license for the export of medical products identified in Export Control Classification Number (ECCN) 1C991 (all paragraphs except d). The countries for which this licensing requirement applies are those indicated in Column AT1 (Anti-terrorism, Column 1) of the Commerce Country Chart, Supplement No. 1 to Part 738 of the Export Administration Regulations (EAR), as well as the sanctioned destinations identified in Part 746 of the EAR.

The U.S. Government also controls items subject to the EAR because of biological end-use or end user concerns. These controls are part of the Enhanced Proliferation Control Initiative (EPCI), announced by President George H.W. Bush on December 13, 1990.

- The U.S. Government requires a license for the export of any commodity, technology, or software when the exporter knows that it will be used in the design, development, production, stockpiling, or use of biological weapons in, or by, any country anywhere in the world, including AG member countries. In addition, the U.S. Government may inform an exporter or re-exporter that a license is required due to an unacceptable risk that the items will be used in, or diverted to, biological weapons proliferation activities anywhere in the world.
- No U.S. person may knowingly support such an export, re-export, or in-country transfer without a license. “Support” is defined as any action, including financing, transportation, or freight forwarding that facilitates the export, re-export, or in-country transfer of these items.
- In addition, no U.S. person may perform, without a license, any contract, service, or employment knowing that it will directly assist the design, development, production, stockpiling, or use of biological weapons in, or by, any destination or country anywhere in the world.

B. The Department of Commerce, in coordination with the Departments of Defense, Energy, and State, reviews applications for licenses on a case-by-case basis in accordance with Section 742.2(b)(1) of the EAR to determine whether the export would make a material contribution to the design, development, production, stockpiling, or use of biological weapons. When the Department of Commerce determines as a result of an interagency review that an export would make such a contribution, it will deny the application. A license application to export AG-controlled items to the People's Republic of China (PRC) must be reviewed in accordance with Section 742.2 (b)(1) of the EAR as well as a second review under the standard set forth in Section 742.4 (b)(7) namely, whether the items would make a direct and significant contribution to China's military capabilities. When the Department of Commerce determines, after interagency review, that an export of an AG-controlled item to the PRC would meet either of these two standards, the Department will deny the application.

Summary of 2016 Changes

In the June 7, 2016 issue of the Federal Register, the Bureau of Industry and Security (BIS) amended the Export Administration Regulations (EAR) to implement the recommendations presented at the February 2015 Australia Group (AG) intersessional implementation meeting (IIM) and the June 2015 AG plenary. Specifically, this rule amended the CCL entry that controls certain human and zoonotic pathogens and toxins by adding two viruses that were not previously identified on the AG "List of Human and Animal Pathogens and Toxins for Export Control" and by updating the nomenclature of certain viruses that were already identified on this AG common control list. In addition, this rule amended the CCL entry that controls equipment capable of handling biological materials to reflect the AG intersessional updates to the controls on biocontainment chambers, isolators, and biological safety cabinets and the controls on aerosol inhalation equipment described on the AG "Control List of Dual-Use Biological Equipment and Related Technology and Software." Consistent with the understandings adopted at the June 2015 AG Plenary meeting, this rule also amended the CCL entry that controls equipment capable of handling biological materials by updating the controls on freeze-drying (lyophilization).

The AG plenary is held annually; one intersessional implementation meeting is often held. Additionally, the AG communicates between meetings to review and refine the list of controlled chemicals, biological agents, and related equipment and technology. The 2016 AG intersessional IIM was held February 1-2, 2016 in Brussels, Belgium. There was consensus support for the change in nomenclature for two bacteria and five toxins and for modifying the control text for cross flow filtration. These changes became effective March 25, 2016, following a 30-day silence procedure.

The 2016 Plenary was held June 6-10, 2016 in Paris, France. There was consensus to remove Dengue fever virus from the AG Common Control List of Human and Animal Pathogens and Toxins. There was further consensus to clarify the control language for Shiga toxin-producing *Escherichia coli*, to update the nomenclature for two bacteria and seven toxins, and to combine verotoxins and shiga toxins into a single entry. Furthermore, there was consensus to make changes to the Control List of Dual-Use Biological Equipment and Related Technology and

Software. These changes include modifications to control language for P3/P4 containment equipment, fermenters, and cross-flow filtration equipment.

On July 28, 2016, BIS published a final rule that describes how articles the President has determined no longer warrant control under Category XIV (Toxicological Agents, Including Chemical Agents, Biological Agents, and Associated Equipment) of the United States Munitions List (USML) are now controlled on the CCL. The final rule was published by BIS in conjunction with a final rule from the Department of State, Directorate of Defense Trade Controls, which amends the list of articles controlled by USML Categories XIV.

The final rule creates five new “600 series” ECCNs in CCL Category 1 (ECCNs 1A607, 1B607, 1C607, 1D607, and 1E607) that clarify the EAR controls applicable to certain dissemination, detection and protection “equipment” and related items that the President has determined no longer warrant control under USML Category XIV. These changes became effective on December 31, 2016.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

The controls described above are intended to prevent a U.S. contribution to the proliferation and illegal use of biological weapons and to promote U.S. foreign policy objectives that seek to inhibit the proliferation of biological weapons. The controls also provide the regulatory authority to stop the export of any item from the United States when there is a significant risk that it will be used for biological weapons purposes. In addition, the controls implement certain measures directed in Executive Order 12735 of November 16, 1990; its successor, Executive Order 12938 of November 14, 1994; and the EPCI, announced on December 13, 1990.

The U.S. Government implements these controls in coordination with the AG. The AG works to accomplish multilateral objectives through harmonizing export controls, exchanging information, and other diplomatic means. In addition, these controls demonstrate the commitment of the United States to its obligation under the BWC not to develop, produce, stockpile, acquire, or retain biological agents, weapons, equipment, or the means of delivery for warfare purposes, or to assist others in such activities. The controls also advance the goals of the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or other Gases and of Bacteriological Methods of Warfare (Geneva Protocol).

B. Considerations and/or Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose, in light of other factors, including availability of relevant items from other countries, and that the foreign policy purpose cannot fully be achieved through negotiations with its partners in the AG and in the BWC. The Secretary has made this determination despite the existence of certain factors,

including availability of these items from other sources, which challenge the full achievement of foreign policy goals. These controls affirm U.S. opposition to the development, proliferation, and use of biological weapons and serve to distance the United States from such activities.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that these controls are compatible with U.S. foreign policy objectives and that the extension of these controls will not have any significant adverse foreign policy consequences. The U.S. Government has a strong interest in remaining at the forefront of international efforts to stem the proliferation of biological weapons. Also, these controls are compatible with the multilateral export controls for biological materials agreed to by the AG.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. The U.S. Government continues to discuss biological export controls with countries outside of the AG to advance the goals of nonproliferation.

4. *Economic Impact on U.S. Industry.* The Secretary has determined that any detrimental effect of these controls on the economy of the United States, including on the competitive position of the United States in the international economy, does not exceed the benefit to United States foreign policy objectives.

In fiscal year 2016, the Department of Commerce approved 1,004 license applications, valued at \$191,653,695, for the export or re-export of biological agents, vaccines and equipment. The Department denied no license applications and returned without action 41 license applications valued at \$128,667,498. The primary basis for returning applications was insufficient information about the transactions.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. Enforcing controls on biological weapons-related materials poses challenges similar to the enforcement of chemical controls, but with additional factors. Biological agents are microscopic organisms that require technical expertise and specialized facilities to identify and to handle. Because of their size, biological agents can often be concealed and transported with ease.

To meet the challenge of effectively enforcing these proliferation controls, the Department of Commerce focuses resources on preventive enforcement. Commerce personnel conduct an extensive, ongoing outreach program to educate industry about export controls. The program is designed to increase industry's awareness of suspicious orders for products or equipment that could be used for biological weapons proliferation. In cases where unlicensed shipments of biological materials have already taken place, the Department of Commerce has found that, as in other export control enforcement cases, analysis of commercial shipping documentation can lead to successful investigations and prosecutions.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end uses and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

C. Consultation with Industry

Biological product exporters include commercial firms as well as academic and government entities. The Department of Commerce maintains ongoing interaction with individual exporters, technical advisory committees (TACs), and trade associations to discuss proposed export transactions and marketing plans to facilitate the thorough, yet prompt, review of export license applications. Through the TACs, the Department keeps industry representatives abreast of licensing proposals for items on the control list and affords them the opportunity to provide technical input. Comments from the Department's seven TACs are solicited on an ongoing basis and are not specific to this report.

D. Consultation with Other Countries

Recognizing that multilateral coordination of export controls and enforcement actions is the most effective means of restricting proliferation activities, the U.S. Government coordinates its controls on biological items with other countries in the AG.

The U.S. Government continues to address the problem of biological weapons proliferation through a variety of international forums and urges other AG members to pursue export control cooperation with non-members on a bilateral or regional basis.

E. Alternative Means

The U.S. Government continues to address the problem of biological weapons proliferation on a number of fronts. Direct negotiations with countries intent on acquiring biological weapons are not likely to prevent the use of U.S.-origin materials for such activities and negotiations are unlikely to affect the behavior of these countries.

Alternative means to curtail the acquisition and development of biological warfare capabilities, such as diplomatic negotiations, do not obviate the need for controls. The following examples demonstrate additional means that have been, and will continue to be, used in an attempt to curb the use and spread of weapons of mass destruction:

- Regulations issued by the Public Health Service (42 CFR Part 72) pursuant to the Antiterrorism and Effective Death Penalty Act of 1996 (Sec. 511 of Pub. L.104-132, April 24, 1996, 110 Stat. 1214) place additional shipping and handling requirements on laboratory facilities that transfer or receive select infectious agents capable of causing substantial harm to human health.

- The Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 (Pub. 102-182, Title III, December 4, 1991, 105 Stat. 1245), the Iran-Iraq Arms Nonproliferation Act of 1992 (Pub. L. 102-484) (Title XVI), and the Iran, North Korea, and Syria Nonproliferation Act (Pub. L. 105-292, 112 Stat. 2787, 50 U.S.C. § 1701 note) provide for the imposition of sanctions on foreign persons or countries for certain kinds of chemical and biological weapons-related activity. The U.S. Government has imposed sanctions under these authorities on certain entities for chemical and biological weapons-related activities.
- In accordance with the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, the Select Agent Regulations are administered by the U.S. Departments of Health and Human Services (42 CFR Part 73) and Agriculture (7 CFR Part 331 and 9 CFR Part 121). These regulations list biological agents and toxins that potentially pose a severe threat to public health and safety (“select agents and toxins”) while placing additional restrictions on their possession, use and transfer. As amended on October 5, 2012 (77 FR 61084 and 77 FR 61056), the select agents and toxins most likely to be misused are designated as Tier 1 Select Agents and require additional enhanced security measures.

The negotiations and alternative means undertaken by the U.S. Government demonstrate that it has made reasonable efforts to achieve the purposes of the controls; however, these actions have not had results that are as effective as the maintenance and renewal of the controls.

F. Foreign Availability

Most of the AG-controlled biological agents, and related equipment to produce them, are available from many sources. Biological agents are, in fact, endemic. Notwithstanding the difficulties related to controlling these items effectively, the United States and its AG partners consider it necessary to maintain controls in order to stem shipments to potential weapons developers. Foreign availability is a factor considered by the AG member countries in their coordination of controls though many non-AG suppliers model their own export controls on the Australia Group’s export controls.

CHAPTER 8

Missile Technology Controls (Sections 742.5 and 744.3)

Export Control Program Description and Licensing Policy

The U.S. Government maintains export controls on certain equipment, materials, software, and technology to further the U.S. foreign policy of stemming the proliferation of missiles capable of delivering weapons of mass destruction (WMD). The U.S. Government implements these controls in coordination with the members of the Missile Technology Control Regime (MTCR), an informal political arrangement of 35 nations that cooperate to halt the proliferation of such missiles. (See Appendix II for a complete list of MTCR members.) Of note, member countries adhere to the MTCR Guidelines and several other countries, including Estonia and Latvia, unilaterally adhere to those Guidelines.

Section 1512 of the National Defense Authorization Act for Fiscal Year 1999 permits the export to the People's Republic of China (PRC) of "missile-related equipment or technology," as defined in Section 74 of the Arms Export Control Act, only if the President certifies to Congress that (1) the export is not detrimental to the United States space launch industry and (2) the equipment or technology to be exported, including any indirect technical benefit that could be derived from the export of the items, will not measurably improve the missile or space launch capabilities of the PRC. In 2009, the President delegated the authority to make such certifications to the Secretary of Commerce. *See* Presidential Determination No. 2009-31 of September 29, 2009 (74 FR 50913 (Oct. 2, 2009)). Assessments of whether the criteria for such certifications are met continue to be made on an interagency basis.

Missile Technology Control Regime Controls

On April 16, 1987, the United States, Canada, France, Germany, Italy, Japan, and the United Kingdom created the MTCR to limit the proliferation of missiles capable of delivering nuclear weapons. Since that time, the number of MTCR partners has increased to 35 countries. Member countries agreed to further expand the MTCR controls in 1993 to include missile delivery systems for all types of WMD. The MTCR Equipment, Software, and Technology Annex lists missile-related items controlled pursuant to the MTCR Guidelines. It is divided into two categories. Category I items include complete missile systems, complete subsystems, production facilities, production equipment, and associated software and technology for missile systems capable of delivering at least a 500 kilogram (kg) payload to at least a 300 kilometer (km) range. Category II items include materials, components, and production and test equipment associated with Category I items, as well as missile systems, major subsystems, production facilities, production equipment, and associated software and technology for missile systems with a range equal to or greater than 300 km, regardless of payload.

License Requirements for MTCR Controls

The Department of Commerce is responsible for administering controls on some Category I items, manufacturing equipment for Category I items, and all dual-use items in Category II. The MTCR Guidelines and the Equipment, Software, and Technology Annex form the basis for U.S. missile technology controls, providing guidance for licensing policy, procedures, review factors, and standard assurances on missile technology exports.

Approximately 120 entries on the CCL are subject to missile technology controls. The MTCR Guidelines state that Category I items are subject to a strong presumption of denial regardless of purpose, and license applications for the export, re-export or transfer (in-country) of production facilities for Category I items will be denied. License applications for Category I items are subject to a strong presumption of denial regardless of purpose, and license applications for the export, re-export or transfer (in-country) of production facilities for Category I items will be denied. The Department will approve the export of Category II items only after a case-by-case review consistent with U.S. law, policy, and regulations, as well as international nonproliferation commitments. The United States observes the multilateral commitment to honor the denial of licenses for MTCR Annex items by other MTCR members and to support such denials through a “no undercut” policy. This policy enhances efforts to prevent missile proliferation and helps to establish a level commercial playing field within the regime.

In summary, the licensing requirements and policy for missile technology controls described in Sections 742.5 and 744.3 of the Export Administration Regulations (EAR) are as follows:

- The U.S. Government requires a license for the export or re-export to all destinations except Canada of dual-use items specifically identified on the CCL as controlled for missile technology reasons.
- The U.S. Government also controls items subject to the EAR due to end-use or end user concerns related to the proliferation of missiles, certain rocket systems and unmanned aerial vehicles (UAVs). The U.S. missile catch-all policy meets U.S. nonproliferation objectives and is consistent with the MTCR Guidelines. The Department of Commerce reviews applications for licenses on a case-by-case basis to determine whether the export would make a material contribution to the proliferation of missiles (Section 742.5(b)) or to the proliferation of certain rocket systems or UAVs (Section 744.3(d)). If the Department of Commerce determines that an export would make such a contribution and (in the case of Section 744.3) that there was knowledge of the end use, the application will be denied.

Summary of 2016 Changes

A Technical Experts Meeting (TEM) was held March 14-17, 2016, in Luxembourg City, Luxembourg, to discuss proposed changes to the MTCR Equipment, Software, and Technology

Annex. Changes that were agreed to by MTCR partners and that will necessitate modifications to the EAR include the addition of aerothermodynamic test facilities (i.e., plasma arc jet facilities and plasma wind tunnels) and a note clarifying that software for the conversion of a manned aircraft to an unmanned aerial vehicle is controlled in the Annex.

On March 18, 2016, also in Luxembourg, a Technical Outreach Meeting (TOM) was held to educate non-partners on the MTCR Annex and recent updates to it. Ten non-partner countries were represented at the TOM.

In June 2016, India's application for membership to the MTCR, which was submitted prior to the 2015 Plenary, was approved by all partners and India officially became the 35th partner country.

The annual Plenary of the MTCR was held from October 17-21, 2016, in Busan, Republic of Korea. The MTCR partners adopted several changes to the MTCR Annex that will necessitate modifications to the EAR, to include the addition of controls on Ultra High Temperature Ceramic (UHTC) composite materials and to clarify the control on flow-forming machines.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

These controls curtail the availability of goods and technology and other support that could contribute to missile proliferation. U.S. export controls on specific types of missile-related equipment and technology, in coordination with those of other supplier countries, limit the proliferation of missile systems and related technology. These controls complement U.S. and international nuclear, chemical, and biological nonproliferation efforts by blocking the development of unmanned delivery systems for WMD. Also, these controls provide U.S. support to the collective effort of the MTCR to address mounting international concern regarding missile proliferation.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose, in light of other factors, including the limited foreign availability of items controlled for Missile Technology (MT) reasons, and that the foreign policy purpose cannot fully be achieved through negotiations or other alternative means. The controls at issue have been in part achieved through international or multilateral negotiations. Although some controlled items are available from other countries, cooperation among the United States, its MTCR partners, and other like-minded countries, many of which are major producers of the items under control, has hindered the efforts of proliferators to develop or acquire militarily effective missiles. The Secretary has determined that extending these controls is likely to limit the spread of missile delivery systems.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that these controls are compatible with U.S. foreign policy objectives and that the extension of these controls will not have any significant adverse foreign policy consequences. Halting the spread of missiles and related equipment and technology worldwide is a key U.S. national security and nonproliferation objective. Missile technology export controls are consistent with, and contribute to, the achievement of this objective. U.S. membership in the MTCR complements existing nuclear, chemical, and biological nonproliferation policies by curbing the spread of missile technology and equipment for the delivery of WMD.

3. *Reaction of Other Countries.* The Secretary has determined that any adverse reaction to these controls is not likely to render the controls ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. The United States is confident that other members of, and unilateral adherents to, the MTCR, many of which are also the leading suppliers of missile-related technology, will continue to support and strengthen U.S. export control regime. MTCR partners share information regarding denials of Annex items and are committed to a “no undercut” policy. MTCR partners also share information about potential activities of missile technology proliferation concern and have cooperated to interdict specific shipments. The number of non-MTCR countries willing to cooperate with the regime has increased over the past several years. Finally, the United States and its MTCR partners are actively engaged in an outreach program to encourage additional countries to adhere to the MTCR Guidelines and implement effective export controls on MTCR items.

4. *Economic Impact on U.S. Industry.* The Secretary has determined that any detrimental effect of these controls on the U.S. economy, including on the competitive position of the United States in the international economy, does not exceed the benefits to U.S. foreign policy objectives. Only a narrow list of items is subject to missile controls, and the effect on overall U.S. trade is limited. The commitment by MTCR to a “no undercut” policy helps ensure that no member obtains an unfair commercial advantage in the international marketplace.

In fiscal year 2016, the Department of Commerce approved 1,099 applications, valued at \$136 billion, for the export or re-export of missile technology-controlled items. This dollar value has increased significantly since certain spacecraft (satellites) and related items became the jurisdiction of the Department of Commerce. In addition, the Department rejected 14 applications valued at \$5.8 million and returned without action 54 applications valued at \$89.7 million. Comparatively few licenses for missile technology items are denied because: (1) exporters do not generally pursue transactions they understand will be rejected (based on the applicable licensing policy); and (2) most of the applications involve exports to destinations, and for end uses, that do not pose missile proliferation concerns.

Under the Enhanced Proliferation Control Initiative (EPCI) controls related to missile technology (15 C.F.R. § 744.3), the Department of Commerce approved 3 applications, valued at \$254,113, denied one license, valued at \$85,000, and returned without action 3 applications, valued at \$46,255. Licenses were required for these items based on EPCI missile concerns.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. Multilateral controls on missile technology provide a strong framework for cooperative enforcement efforts overseas. However, there are challenges for the enforcement of controls on dual-use goods related to missile development. First, it is difficult to detect and investigate cases under the “knowledge” standard set forth in the EPCI “catch-all” provision. Second, some countries have different standards for “catch-all,” which complicates law enforcement cooperation. Third, identifying illegal exports and re-exports of missile-related goods requires significant investigative resources.

To enforce these controls effectively, the Department of Commerce continues to focus on preventive enforcement, including an outreach program to educate companies about export controls and to increase awareness of “red flags” that may indicate a risky transaction. This program is an important component of the Department of Commerce’s efforts to prevent illegal exports of dual-use products or equipment that could be used to make missiles.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and of prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

The Department conducted a number of enforcement actions regarding noncompliance with these export controls, including:

Weiss Envirotronics

Environmental Test Chambers to China

On June 3, 2016, Weiss Envirotronics of Grand Rapids, Michigan agreed to pay a \$575,000 civil penalty, of which \$400,000 was suspended during a two-year probationary period. The agreement also includes a requirement that Weiss Envirotronics conduct two audits, one of which must be conducted by a third party, relating to the company’s compliance with U.S. export control laws. On twenty occasions between March 27, 2010 through September 11, 2013, Weiss Envirotronics exported environmental test chambers, classified under ECCN 9B106 and controlled for missile technology reasons and valued at approximately \$3,626,741, to the People’s Republic of China without the required BIS export licenses. Weiss Envirotronics voluntarily disclosed these violations to BIS. This was an OEE-only case, investigated by OEE’s Chicago Field Office.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website.

The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

The Department of Commerce holds discussions with industry representatives on issues related to the MTCR Annex through the Transportation Technical Advisory Committee and other relevant technical advisory committees (TACs) as appropriate. Comments from the Department's seven TACs are solicited on an ongoing basis and are not specific to this report. The Department of Commerce also participates in interagency working groups that review proposed changes to the Annex, and engages in discussions of the proposals with companies that have relevant expertise.

D. Consultation with Other Countries

Consultation with other MTCR members is a fundamental element of U.S. missile technology control policy. Consultations with non-MTCR countries also are essential to U.S. missile nonproliferation policy. The U.S. Government exchanges information with other countries about activities of missile proliferation concern and seeks to cooperate with them to prevent or stop certain transactions. The United States also shares denial information with its MTCR partners, who are committed to the Regime's "no-undercut" policy.

MTCR member countries cooperate with non-member countries to limit the spread of WMD delivery systems by encouraging all countries to apply the MTCR Guidelines on a national basis. The MTCR's outreach efforts have included workshops and seminars, at which MTCR members and invited non-members share experiences in an effort to improve prevention of missile proliferation.

E. Alternative Means

The missile sanctions provisions in Section 73 of the Arms Export Control Act and Section 11B of the Export Administration Act of 1979, as amended (EAA), provide for the imposition of export, import, and procurement sanctions on foreign entities engaged in certain kinds of activities relating to the transfer of MTCR Annex items to non-MTCR adherent countries. In the past, the United States has imposed missile sanctions on entities in Egypt, India, Iran, Macedonia, Moldova, North Korea, Pakistan, China, Russia, South Africa, and Syria. Missile sanctions are used to encourage the governments of the sanctioned entities to adopt responsible nonproliferation behavior and to send a clear message about the United States' strong commitment to missile nonproliferation. Discretionary sanctions pursuant to the Iran, North Korea, and Syria Nonproliferation Act (Pub. L. 105-292, 112 Stat. 2787, 50 U.S.C. § 1701 note) may be applied to entities engaging in transfers of missile equipment and technologies.

The United States and its MTCR partners are continuing their diplomatic efforts to encourage additional countries to adhere unilaterally to the MTCR Guidelines. Such efforts are aimed at encouraging non-MTCR members to implement and enforce effective missile technology export controls. Although the United States has an obligation to maintain and renew its export controls

based on its membership in the MTCR, it also has pursued alternative means to achieve the purposes of the controls through its consultations with non-MTCR countries.

F. Foreign Availability

Possible suppliers of missile technology that are not MTCR partners include, but are not limited to, China, North Korea, Egypt, Iran, Israel, and Taiwan. Some of these countries, such as Israel, adhere unilaterally to the MTCR Guidelines. The United States continues to approach other nations, including those that produce MTCR Annex-controlled items, to urge them to apply MTCR Guidelines to help prevent missile proliferation.

CHAPTER 9

Encryption Controls (Section 742.15)

Export Control Program Description and Licensing Policy

The U.S. maintains export controls on encryption items to protect and preserve national security and foreign policy interests. Encryption items may be used to maintain the secrecy of information, and therefore may be used by persons abroad to bring harm to U.S. national security and foreign policy interests. The U.S. Government has a critical interest in ensuring that the legitimate needs for protecting important and sensitive information of the public and private sectors are met, and that persons seeking to damage U.S. national security and foreign policy interests are not able to conceal hostile or criminal activities.

When dual-use encryption items were transferred from the United States Munitions List (USML) to the Commerce Control List (CCL) in 1996, foreign policy controls were imposed on these items. A license is required to export or re-export Encryption Items (EI) (classified under Export Control Classification Numbers (ECCNs) 5A002, 5D002, and 5E002 on the CCL) to all destinations except Canada. All items controlled for EI reasons are also controlled for National Security (NS) reasons.

License Requirements and Licensing Policy for Encryption Controls

Most EI-controlled items are eligible for export and re-export to non-government end users under the terms and conditions of License Exception Encryption Commodities, Software and Technology (ENC) after self-classification by the exporter or classification by the Bureau of Industry and Security (BIS) and the National Security Agency. Many items are also eligible for export and re-export to government end users under this License Exception.

License applications to export or re-export EI-controlled items are subject to case-by-case review for consistency with U.S. national security and foreign policy interests. EI-controlled items are also eligible for Encryption Licensing Arrangements (ELAs), which authorize exports and re-exports of unlimited quantities of encryption commodities or software to state, provincial and local governments for civil use, in all destinations, except countries listed in Country Group E:1.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

Encryption products can be used to conceal the communications of terrorists, drug smugglers, and others intent on harming U.S. interests. Cryptographic products and software also have military and intelligence applications that, in the hands of hostile nations, could pose a threat to

U.S. national security. The national security, foreign policy, and law enforcement interests of the United States are protected by export controls on encryption items.

B. Considerations and Determinations of the Secretary of Commerce

- 1. Probability of Achieving the Intended Foreign Policy Purpose.** The Secretary has determined that U.S. export controls on encryption items restrict the export of encryption items in situations that would be contrary to U.S. national security or foreign policy interests. The Secretary has determined that these controls are likely to achieve the intended foreign policy purpose in light of other factors, including the availability of encryption items from other countries, and that the foreign policy purpose cannot be achieved solely through agreements with the participating states of the Wassenaar Arrangement or through alternative means. This determination with due consideration for the continuing growth of electronic commerce and Internet use, as the emergence of new security protocols for, among other things, short-range wireless communications, and the growth in the number of countries with the technology to produce highly sophisticated, dual-use encryption products.
- 2. Compatibility with Foreign Policy Objectives.** The Secretary has determined that these controls are compatible with U.S. foreign policy objectives, and that the extension of these controls will not have significant adverse foreign policy consequences. The controls are consistent with the U.S. foreign policy goal of preventing U.S. exports (and subsequent re-exports) that might contribute to the capabilities of international terrorists or criminals.
- 3. Reaction of Other Countries.** The Secretary has determined that the continued implementation of U.S. encryption export controls is generally accepted in the international community and that any adverse reaction to these controls is not likely to render the controls ineffective. Moreover, these controls are not counterproductive to the foreign policy interests of the United States. Other countries, particularly the Wassenaar participating states, recognize the need to control exports of such items for national security reasons.
- 4. Economic Impact on U.S. Industry.** The Secretary has determined that the continued implementation of encryption regulations that are periodically updated will allow U.S. industry to maintain a leadership position in the global market for encryption items and that the economic effect of encryption controls on U.S. exports does not exceed the benefit to U.S. foreign policy objectives.

In fiscal year 2016, approximately 2,200 companies filed encryption registrations. The requirement to file an encryption registration was eliminated by a regulatory change on September 20, 2016. This activity continues to reflect the expanding trade in encryption items and the wide commercial applicability of such items. The Department of Commerce processed approximately 2,000 classification requests for controlled encryption items, components, toolkits, and source code items classified under ECCNs 5A002, 5B002, 5D002, 5E002, 5A992, 5D992, and 5E992 or designated EAR99.

Additionally, during fiscal year 2016, the Department of Commerce approved approximately 2,100 license applications for encryption-related deemed exports and “restricted” encryption items, such as high-end routers and other network infrastructure equipment, and technology. In fiscal year 2016, there were 17 denied license applications, divided among deemed exports to Iranian and Syrian foreign nationals, exports to Russian military, intelligence or security agencies, and exports to entities on the Entity List.

5. Effective Enforcement of Controls. The Secretary has determined that the United States has the ability to enforce these controls effectively. Detection of some encryption transactions is challenging because encryption components are often incorporated into other products and encryption software can be transferred over the Internet.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

The U.S. Government regularly consults with U.S. industry, including BIS’s Information Systems Technical Advisory Committee and other technical advisory committees as appropriate, regarding encryption policy. The objective of these consultations is to develop policies that assist law enforcement, protect U.S. national security, ensure continued U.S. technological leadership, and promote the privacy and security of U.S. firms and citizens. Such consultations have proven successful, as evidenced by the increasing number of encryption items submitted for technical review and constructive industry input on matters of regulations and policy.

D. Consultation with Other Countries

The U.S. Government participates in global efforts to prevent international criminals, terrorists, and designated state sponsors of terrorism from acquiring sophisticated encryption products. One such effort is the Wassenaar Arrangement. The Wassenaar Arrangement was established to enhance regional and international security by developing standards and norms for conventional arms and dual-use goods and technology transfers. Participating states seek, through their national policies, to ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine these goals, and are not diverted to support such capabilities. Encryption items are included under the Wassenaar Arrangement’s

Basic List of dual-use goods and technologies, with controls based on the encryption strength (e.g., key length) and use of specified dual-use items. In addition, the Wassenaar Arrangement's Cryptography Note provides for release from national security controls of "mass market" encryption items otherwise covered by the Wassenaar control list. U.S. encryption policy reflects consultation with other participating states of the Wassenaar Arrangement. Also, the U.S. Government encourages major industrial and trading partners to adopt and maintain export controls on encryption equipment and technology in bilateral meetings.

E. Alternative Means

EI foreign policy controls are coextensive with national security controls placed on encryption items. Therefore, if EI controls on encryption items were removed, national security controls would remain in place. National security controls are also maintained cooperatively with the other members of the Wassenaar Arrangement.

F. Foreign Availability

The United States is aware of the ongoing adoption and widespread use of encryption worldwide, as well as the continued development of foreign-made encryption hardware and software. The U.S. Government continues to monitor global IT marketplace and encryption policy developments so that updates to U.S. regulations will enable American companies to maintain their technological leadership in a manner that safeguards U.S. national security and public safety interests. The U.S. Government consults with other governments to secure cooperation in controlling the availability of encryption items.

CHAPTER 10

Significant Items: “Hot Section” Technology Controls (Section 742.14)

Export Control Program Description and Licensing Policy

Certain technology transferred from the USML to the CCL is subject to “enhanced control.” This technology is designated by the acronym “SI,” which stands for “Significant Items.” The technology controlled for SI reasons is “hot section” technology for the development, production, or overhaul of commercial aircraft engines, components, and systems. Technology controlled for SI reasons is classified under various paragraphs of Export Control Classification Number (ECCN) 9E003 (specifically ECCN 9E003.a.1 through a.8, and 9E003.h, .i, and .k). The SI controls supplement the national security controls that also apply to this technology.

License Requirements and Licensing Policy for Significant Items

The licensing policy for “hot section” technology is as follows:

A license is required for exports and re-exports to all destinations, except Canada.

The United States reviews license applications for “hot section” technology on a case-by-case basis to determine whether the proposed export or re-export is consistent with U.S. national security and foreign policy interests.

Analysis of Control as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

This control provides a mechanism for the United States to monitor closely the export of this technology to prevent its use in a manner that would adversely affect U.S. nonproliferation goals or the military balance within a region.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that this control is likely to achieve the intended foreign policy purpose, notwithstanding various factors, including the availability of these SI-controlled items from other countries, and that the foreign policy purpose has only been partially achieved through negotiations on export controls with the participating states of the Wassenaar Arrangement.

2. Compatibility with Foreign Policy Objectives. The Secretary has determined that this control is compatible with U.S. foreign policy objectives, and that the extension of this control will not have any significant adverse foreign policy consequences. The control is consistent with

U.S. foreign policy goals to promote peace and stability and to prevent U.S. exports that would contribute to inappropriate military capabilities abroad.

3. Reaction of Other Countries. The Secretary has determined that any adverse reaction to this control is not likely to render the control ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. “Hot section” technology for commercial jet engines is subject to dual-use export controls by other allied countries through the Wassenaar Arrangement. These countries also recognize the desirability of restricting goods and technology that could compromise shared security and foreign policy interests.

4. Economic Impact. The Secretary has determined that any detrimental effect of this control on the economy of the United States, and on the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives.

In fiscal year 2016, the Department of Commerce approved 152 licenses for technology controlled under ECCN 9E003. Most of the 152 licenses approved involved the export of “hot section” technology, and of these, 23 were “deemed export” cases. The total dollar value of the items subject to the licenses approved was \$2,792,462 in fiscal year 2016. The majority of the license approvals were for exports of “hot section” technology to the United Kingdom (32 cases), Japan (26 cases), and Germany (21 cases); 32 of the applications were for re-exports. One license application involving engine “hot section” technology was denied in fiscal year 2016; 37 applications involving items valued at a total of \$585,974 were returned without action.

5. Effective Enforcement of Controls. The Secretary has determined that the United States has the ability to enforce this control effectively. The U.S. Government does not experience any unusual problems in enforcing this control. Manufacturers and intermediary companies are familiar with U.S. controls on these products and technologies. With the exception of “hot section” technology (ECCN 9E003.k) currently used in civil derivatives of military engines controlled on the USML, all of these items also are subject to multilateral controls. Therefore, cooperation from foreign government enforcement agencies is useful in preventing and punishing violators.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

C. Consultation with Industry

The United States leads international efforts to stem the proliferation of sensitive items, urging other supplier nations to adopt and apply export controls comparable to those of the United States. The major industrial partners of the United States maintain export controls on almost all

of this technology and control them as dual-use technology. The participants in the Wassenaar Arrangement have agreed to control these items (with the exception of items controlled under ECCN 9E003.k, noted above, which the United States has not sought to control in Wassenaar) as part of their commitment to control conventional arms and sensitive dual-use goods and technologies, and to ensure that transfers of such items are carried out responsibly and in furtherance of international peace and security.

D. Consultation with Other Countries

The United States leads international efforts to stem the proliferation of sensitive items, urging other supplier nations to adopt and apply export controls comparable to those of the United States. The major industrial partners of the United States maintain export controls on almost all of this equipment and technology and control them as dual-use commodities. Pursuant to their agreement to establish a regime for the control of conventional arms and sensitive dual-use goods and technologies, the participants in the Wassenaar Arrangement have agreed to control these items (with the exception of items controlled under ECCN 9E003.k and noted above, which the United States has not sought to control in Wassenaar) and to ensure that transfers of such items are carried out responsibly and in furtherance of international peace and security.

E. Alternative Means

The U.S. Government has undertaken a wide range of diplomatic endeavors, both bilateral and multilateral, to encourage proper control over these items, and has been successful in reaching multilateral agreement in the Wassenaar Arrangement to control most of these items. The United States has specifically encouraged efforts to prevent the unauthorized use or diversion of these items to activities contrary to U.S. national security and foreign policy concerns. However, these efforts do not replace the continued need for the controls.

F. Foreign Availability

Although the United States has been the world leader in this technology, other countries produce “hot section” technology. Most countries that are producers of “hot section” technology are participants in the Wassenaar Arrangement and control these items (with the exception of items controlled under ECCN 9E003.k noted above) as dual-use items in accordance with their national licensing policies. The commitment of the U.S. Government and its Wassenaar partners to maintain controls reflects the cooperation among governments to reduce foreign availability.

CHAPTER 11

Nuclear Nonproliferation Controls (Sections 742.3 and 744.2)

Export Control Program Description and Licensing Policy

The U.S. Government controls exports of nuclear-related items under the authority of the Nuclear Nonproliferation Act of 1978 (NNPA) to further the United States' nuclear nonproliferation policy. Because these controls are primarily based on the NNPA and not the Export Administration Act (EAA), they are not subject to this report. However, BIS has included information on nuclear nonproliferation controls because they usually are grouped with other nonproliferation controls that are subject to this report. In addition, controls based on nuclear end uses and end users are maintained under the authority of Section 6 of the EAA as part of the Enhanced Proliferation Control Initiative (EPCI). EPCI controls for other proliferation end uses are described in detail in Chapters 6, 7, and 8 of this report. The Entity List, maintained in Supplement No. 4 to Part 744 of the Export Administration Regulations (EAR) and discussed in Chapter 13 of this report, also prohibits certain transactions involving end users and end uses involved in nuclear activities described in Section 744.2 of the EAR.

Nuclear Nonproliferation Regime Controls

The Nuclear Nonproliferation Regime controls support U.S. international nuclear nonproliferation obligations, particularly with relation to its membership in the Nuclear Suppliers Group (NSG) and the Zangger Committee (ZC). The United States is a member of the 48-member NSG, which sets forth guidelines for the export of items that are either specially designed or prepared for the processing, use, or production of special nuclear material or are nuclear-related dual-use items and technologies (see Appendix II for a complete list of regime members). These controls also reflect U.S. membership in the ZC, a multilateral nuclear export control group that was formed to interpret Article III, paragraph 2, of the Nuclear Nonproliferation Treaty. Like the NSG, the ZC establishes and maintains a list ("Trigger List") of nuclear-related equipment and materials subject to export controls along with guidelines concerning the export of nuclear equipment and material.

Licensing Requirements and Licensing Policy

The Department of Commerce requires a license for the export of the following items:

- commodities, related technology, and software that could be of significance for nuclear explosive purposes (i.e., the Nuclear Referral List (NRL) included in the CCL); and
- any commodity, related technology, or software that the exporter knows, or has reason to know, will be used directly or indirectly in any of the following activities:

- nuclear explosive activities including research on, or the development, design, manufacture, construction, testing, or maintenance of nuclear weapons or nuclear explosive devices;
- unsafeguarded nuclear activities, including research on, or the development, design, manufacture, construction, operation, or maintenance of any nuclear reactor, critical facility, facility for the fabrication of nuclear fuel, facility for the conversion of nuclear material from one chemical form to another, or separate storage installation where there is no obligation to accept International Atomic Energy Agency (IAEA) safeguards at the facility or installation, when it contains any source of special fissionable material, or where any such obligation is not met; or
- safeguarded and unsafeguarded nuclear activities, including research on, or the development, design, manufacture, construction, operation or maintenance of the following facilities, or components for such facilities: (i) facilities for the chemical processing of irradiated special nuclear or source materials; (ii) facilities for the production of heavy water; (iii) facilities for the separation of isotopes of source and special nuclear material; or (iv) facilities for the fabrication of nuclear reactor fuel containing plutonium.

The Department of Commerce may inform the exporter that a license is required for any item subject to the EAR when there is an unacceptable risk of use in, or diversion to, any of the activities described above.

Factors considered in reviewing applications for licenses include:

- the stated end use of the item;
- the significance for nuclear purposes of the particular item, including whether the item is to be used in research on or for the development, design, manufacture, construction, operation, or maintenance of any reprocessing or enrichment facility;
- the types of nuclear nonproliferation assurances or guarantees given in a particular case; and
- the nonproliferation credentials of the recipient country.

Summary of 2016 Changes

An Extraordinary Plenary of the NSG was held in Vienna, Austria, on January 21, 2016, to discuss interaction with the Joint Comprehensive Plan of Action (JCPOA) concerning transfer of NSG controlled items to Iran, specifically procurement channels and existing denials to Iran.

The 2016 NSG Plenary, 39th Consultative Group (CG) Meeting, Information Exchange Meeting (IEM), and Licensing and Enforcement Experts Meeting (LEEM) were held in Seoul, Republic of Korea, on June 20-24, 2016. Discussions within the Plenary included outreach activities to non-Participating Governments, particularly those that are manufacturers or transshipment points, the outstanding membership applications of India and Pakistan, and the condemnation of

recent DPRK nuclear explosive tests and missile launches and a call to them to comply with UNSCRs. Upon the recommendation of the CG, the Plenary adopted six new technical changes put forward by the Technical Experts Group. Discussions on changes to machine tool controls are ongoing. Presentation topics in the IEM and LEEM included JCPOA implementation, financial information and counter proliferation, Iran's lithium enrichment activities before the JCPOA, procurement, the DPRK's nuclear program, denial notifications, proliferation red flags in finance and insurance sectors, and nuclear grade zirconium.

Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls, including controls on nuclear-related items. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I. In addition, comments were solicited from the public via the BIS website. Moreover, comments from the Department's seven Technical Advisory Committees (TACs) are solicited on a regular basis, but are not detailed in this report.

Analysis of Controls as Required by Law¹⁵

Section 17(d) of the EAA and Section 309(c) of the NNPA provide that: (1) nuclear nonproliferation controls do not expire annually and determinations to extend them are thus not required; and (2) the criteria and other factors set forth in Sections 6(b) through 6(f) of the EAA are not applicable to these controls. The Department of Commerce is, therefore, notifying Congress that these controls continue in effect. These controls further the nuclear nonproliferation policy of the United States and have made it more difficult for other nations to acquire sensitive nuclear technology or equipment.

The Departments of Commerce and Energy, in consultation with the Departments of State and Defense and the Nuclear Regulatory Commission, regularly review and revise the NRL pertaining to U.S. dual-use items controlled for nuclear nonproliferation reasons. The NRL is used to meet the United States' NSG commitments with respect to nuclear dual-use items.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

BIS conducted a number of enforcement actions regarding noncompliance with these controls, including:

¹⁵ The analysis, required by law, differs for nuclear nonproliferation controls. It is governed by the Nuclear Nonproliferation Act of 1978 (NNPA). Therefore, the headings under this section differ from the rest of the report.

Teledyne LeCroy*Oscilloscopes to China*

On June 16, 2015, Teledyne LeCroy of Chestnut Ridge, New York, agreed to pay a civil penalty of \$75,000 to settle charges that on two occasions during 2010, the company exported oscilloscopes from the United States to the Beihang University of Aeronautics and Astronautics (BUAA), also known as Beihang University, in Beijing, China, without the required BIS export license. BUAA and its Beihang University alias appeared on the BIS Entity List at the time of the exports. The oscilloscopes were classified under ECCN 3A292 and were controlled for nuclear non-proliferation and/or anti-terrorism reasons. At the time of the transactions, Teledyne LeCroy was aware that BUAA and its Beihang University alias appeared on the BIS Entity List. Teledyne LeCroy had also obtained end-user statements for both exports that listed “Beijing Beihang University” as the end-user of the oscilloscope. However, the company failed to properly screen the BIS Entity List connection and failed to obtain the BIS licenses required. Teledyne LeCroy also failed to file accurate Shippers Export Declarations in connection with these transactions. This was an OEE-only case, investigated by OEE’s New York Field Office.

Sihai Cheng*Pressure Transducers to Iran via China*

On January 27, 2016, Sihai Cheng, a Chinese national, was sentenced in U.S. District Court for the District of Massachusetts to nine years in prison in connection with the export of pressure transducers to Iran. On December 18, 2015, Cheng pled guilty to conspiracy to commit export violations and smuggle goods from the United States to Iran and to illegally exporting U.S. manufactured pressure transducers to Iran. In 2013, Cheng was charged in an indictment along with Seyed Abolfazl Shahab Jamili, an Iranian national, and two Iranian companies, Nicaro Eng. Co., Ltd. and Eyvaz Technic Manufacturing Company, with conspiring to export, and exporting, highly sensitive U.S.-manufactured goods with nuclear applications to Iran from at least 2009 to 2012. In December 2014, Cheng was extradited from the United Kingdom to the United States and has remained in custody since then. From February 2009 through at least 2011, Cheng, Jamili, and a third individual conspired with each other and others in the People’s Republic of China and Iran to illegally obtain hundreds of U.S. manufactured pressure transducers and export them to Iran. Initially, the parts were exported to China using fraudulently obtained U.S. Department of Commerce export licenses. When they arrived in the China, Cheng inspected them in the Shanghai Free Trade Zone and removed their U.S. manufacturer serial numbers to conceal the fact that he was violating U.S. law. Cheng then caused the pressure transducers to be exported to Iran knowing that the parts were being supplied to the Government of Iran. Jamili advised Cheng that the Iranian end-user was Kalaye Electronic Company, which the U.S. Government designated as a proliferator of weapons of mass destruction in 2007 for its work with Iran’s nuclear centrifuge program. Pressure transducers can be used in gas centrifuges

to enrich uranium and produce weapons-grade uranium. This was a joint investigation with OEE's Boston Field Office, ICE, and the FBI.

CHAPTER 12

Surreptitious Listening Controls (Section 742.13)

Export Control Program Description and Licensing Policy

The United States maintains controls on surreptitious listening items to prevent the unlawful interception of oral, wire, or electronic communications by terrorists and others who may use the information for unlawful purposes or in ways contrary to the national security and foreign policy of the United States. Surreptitious Listening (SL) items are devices used for the surreptitious interception of wire, oral, or electronic communications and are controlled under Export Control Classification Numbers (ECCN) 5A980 and 5A001.f.1. Export controls extend to related software and technology through ECCNs 5D980 and 5D001 (software), as well as 5E980 and 5E001 (technology). On June 20, 2013, the Department of Commerce published a rule revising the Commerce Control List (CCL) to reflect changes made to the Wassenaar Arrangement List of Dual-Use Goods and Technologies agreed to by the Wassenaar Arrangement in December 2012, including the addition of a control on interception equipment and software designed for the extraction of voice or data transmitted over the air interface to Category 5 part 1 (Telecommunications). The Department of Commerce has imposed SL controls on these items as well as national security controls.

License Requirements and Licensing Policy

A license is required for all exports and re-exports of electronic, mechanical, or other device primarily useful for surreptitious interception of wire, oral, or electronic communications. The Department of Commerce will generally approve applications for the export and re-export of items controlled for SL reasons, other than to destinations for which a license is also required for anti-terrorism reasons, where the end users are providers of wire or electronic communication service acting in the normal course of business; or to officers, agents, or employees of, or persons under contract with, the United States, a State, or a political subdivision thereof, when engaged in the normal course of government activities. License applications from other parties will generally be denied.

The license requirements set forth in the EAR are independent of the requirements of section 802 of the Omnibus Crime Control and Safe Streets Act of 1968, as amended (18 U.S.C. Section 2512). These controls do not supersede, nor do they implement, construe, or limit the scope of any of the statutory restrictions of 18 U.S.C. Section 2512 that are enforced by the U.S. Department of Justice.

Analysis of Control as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

The purpose of surreptitious listening controls is to: prevent the unlawful interception of oral, wire, or electronic communications by terrorists and others who may put the information gained through intercepted communications to an unlawful use; promote the protection of privacy of oral, wire, or electronic communications; and protect against threats of terrorism around the world. The controls also distance the United States from nations that have repeatedly supported acts of terrorism and from individuals and organizations that commit terrorist acts.

B. Considerations and Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that the surreptitious listening controls are likely to achieve the intended foreign policy purpose, notwithstanding the availability of these controlled items from other countries, and that the foreign policy purpose cannot be achieved through negotiations or other alternative means.

Sending or carrying the devices in foreign commerce is subject to independent criminal sanction. Nevertheless, the imposition of foreign policy-based controls on these devices and related software and technology enhances the probability of achieving the intended foreign policy purposes.

Although the availability of comparable goods from foreign sources limits the effectiveness of the surreptitious listening controls, these controls restrict access to U.S.-origin commodities, technology, and software and demonstrate U.S. determination to prevent the unlawful interception of communications, promote privacy protection, and oppose and distance the country from international terrorism.

2. Compatibility with Foreign Policy Objectives. The Secretary has determined that the imposition of these controls is consistent with the foreign policy objectives of the United States and will not have any significant adverse foreign policy consequences. The imposition of surreptitious listening controls will enhance the U.S. Government's ability to stop the supply of U.S.-origin items to persons engaged in, or supportive of, unlawful uses of intercepted communications and deter privacy violations and acts of terrorism. The imposition of these controls is also compatible with overall U.S. policy toward Cuba, Iran, North Korea, Sudan, and Syria. The U.S. Government intends to promote privacy protection and aid in deterring criminal activities, including terrorism, through these foreign policy-based controls.

3. Reaction of Other Countries. The Secretary has determined that any adverse reaction to the imposition of surreptitious listening controls is not likely to render the controls ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. Most countries are generally supportive of U.S. efforts to prevent unlawful uses of

intercepted communications, including uses of intercepted communications by terrorists or states that support international terrorism.

4. Economic Impact on U.S. Industry. The Secretary has determined that any detrimental effect of these controls on the economy of the United States, including the competitive position of the United States in the international economy, does not exceed the benefit to U.S. foreign policy objectives. Because sending or carrying the devices in foreign commerce is already subject to independent criminal sanction, the imposition of foreign policy-based controls on the devices and related software and technology will not have a discernible economic impact.

In fiscal year 2016, the Department of Commerce approved fifteen applications for the export or re-export of SL controlled items. In addition, the Department returned four applications without action and four applications were denied.

5. Effective Enforcement of Controls. The Secretary has determined that the United States has the ability to enforce these controls effectively. The U.S. Government can effectively enforce these controls by focusing on preventive enforcement, using regular outreach efforts to keep industry informed of the license requirements and prevent inadvertent exports, and gathering leads on activities of concern.

BIS gathers leads on activities of concern and conducts end-use checks, primarily through its Export Control Officer and Sentinel programs, to verify the end use and end users of U.S.-origin items. End-use checks involve the assessment of bona fides (i.e., legitimacy and reliability) of foreign end users that receive U.S.-origin items and prospective end users on pending license applications for diversion risk, as well as educational outreach to foreign trade groups.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

The Department of Commerce consults with the Regulations and Procedures Technical Advisory Committee (RPTAC), one of seven such committees that advise the Bureau of Industry and Security (BIS), in preparation for publication of major regulatory changes affecting foreign policy controls.

D. Consultation with Other Countries

The United States continues to consult with a number of countries, both on a bilateral and a multilateral basis. In general, most countries are supportive of measures designed to prevent the unlawful use of intercepted communications, protect privacy, and combat terrorism but do not

implement strict export controls on these items similar to those imposed by the United States. The United States will consult with other countries as necessary regarding these changes in order to ensure compliance and encourage other countries' efforts to deter terrorism and other criminal activity through controlling surreptitious listening devices.

E. Alternative Means

The U.S. Government continually reviews the means by which it can curtail privacy violations and terrorism and has taken a wide range of diplomatic, political, and security-related steps to support this effort. Imposing these foreign policy-based controls enhances these efforts by preventing terrorist-supporting countries from acquiring items subject to U.S. export control jurisdiction. In addition, these controls underscore the United States' commitment to prevent criminal activity worldwide.

F. Foreign Availability

The commodities subject to these controls are likely available from foreign suppliers. The Department of Commerce is aware that these controls will not prevent the shipment of such foreign-origin items from other countries, but the regulation minimizes the risk of diversion of U.S.-origin devices and related software and technology primarily useful for surreptitious interception of wire, oral, or electronic communications to end users without a legitimate commercial need for such devices.

CHAPTER 13

Entity List (Supplement No. 4 to Part 744)

Program Description and Licensing Policy

The Bureau of Industry and Security (BIS) has adopted foreign policy-based end use and end user controls that focus on foreign entities (e.g., business, research institutions, government and private organizations, individuals, other types of legal persons, and locations) that pose or could pose a threat to U.S. national security or foreign policy interests. Through publication in the Federal Register of updates to the Entity List (Supplement No. 4 to Part 744 of the Export Administration Regulations (EAR)), BIS informs the public of these entities of concern and the controls BIS has implemented for the export, re-export, and transfer (in-country) of items subject to the EAR to entities appearing on the List.

BIS established the Entity List in 1997 to inform the public of foreign entities that have engaged in activities that could result in an increased risk of the diversion of exported, re-exported and transferred (in-country) items to weapons of mass destruction (WMD) programs, such as nuclear, missile, chemical and biological weapons activities (see Sections 744.2, 744.3, and 744.4 of the EAR). The EAR prohibits unlicensed exports, re-exports, and transfers (in-country) of items subject to the EAR to certain persons acting contrary to the national security or foreign policy interests of the United States and persons sanctioned by the Departments of State and Treasury (see Sections 744.11 through 744.14 and 744.20 of the EAR). The Entity List identifies the specific license requirements and license review policies BIS has imposed for each listed entity. These license requirements are supplemental to any license requirements imposed elsewhere in the EAR.

BIS implements the decisions of the End User Review Committee (ERC) by revising the Entity List to add, remove and modify Entity List entries. The ERC adds entities by majority vote and removes or modifies entries by unanimous vote. The ERC conducts reviews and revises and updates the List, as necessary. Pursuant to Section 744.16 of the EAR, persons on the Entity List may request the removal or modification of their entry. The ERC is composed of representatives of the Departments of Commerce (Chair), State, Defense, Energy, and – where appropriate – the Treasury.

In 2016, BIS published nine updates to the Federal Register pertaining to the Entity List that resulted in 205 additions, seventeen removals, and three modifications. These changes affected entities located in twenty-five countries.

Additions to the Entity List in 2016

BIS added 205 entities to the Entity List in nine Federal Register rules in 2016. The U.S. Government determined that all of the entities were acting contrary to U.S. national security and/or foreign policy interests. Specifically:

- February 23, 2016, BIS published a final rule in the Federal Register (81 FR 8829) that added eight persons located in the United Arab Emirates to the Entity List:
 - Four entities had procured or attempted to procure U.S.-origin technology on behalf of persons designated by the Secretary of State as Foreign Terrorist Organizations (FTOs) or persons supplying FTOs; and
 - Four entities were added to the Entity List pursuant to §744.11(b)(4) because the ERC had reasonable cause to believe that these entities prevented BIS officials from successfully accomplishing end-use checks.
- On March 8, 2016, BIS published a final rule in the Federal Register (81 FR 12006) that added three entities located in China and one entity in Iran to the Entity List. One entity was found to have re-exported controlled items to sanctioned countries and also planned and organized a scheme to establish, control, and use a series of “detached” (*i.e.*, shell) companies to illicitly re-export controlled U.S.-origin items to Iran in violation of U.S. export control laws. An additional three entities were identified in the scheme developed by the aforementioned entity to re-export controlled U.S.-origin items to Iran.
- On March 21, 2016, BIS published a final rule in the Federal Register (81 FR 14958) that added forty-four persons to the Entity List under forty-nine entries:
 - BIS added nineteen entities located in Hong Kong, India, Malaysia, the Netherlands, Singapore, Switzerland and the United Arab Emirates to the Entity List on the basis of their attempts to procure items, including U.S.-origin items, for an Iranian party associated with the Iran defense industry;
 - BIS added four entities located in Germany to the Entity List on the basis of their involvement in supplying U.S.-origin items to an Iranian party associated with the Iranian defense industry. The party’s customers included companies designated by the Department of the Treasury as Specially Designated Nationals (SDNs);
 - BIS added five entities located in Iran and the United Arab Emirates to the Entity List on the basis of their involvement in the illegal diversion of U.S.-origin items to Iran via the United Arab Emirates;

- BIS added eight entities located in China to the Entity List because the ERC had reason to believe that these entities unlawfully diverted U.S.-origin oilfield equipment to Iran without the required Department of the Treasury, Office of Foreign Assets Control (OFAC) licenses, actions that violate the EAR;
 - BIS added four entities located in Malaysia to the Entity List on the basis of their involvement in an illicit procurement scheme to divert items subject to the EAR to prohibited end uses and end users in Iran; and
 - BIS added four entities located in the United Arab Emirates to the Entity List for seeking to export Missile Technology Control Regime (MTCR) Category I unmanned aerial vehicles (UAVs) to non-MTCR member countries. All Category I systems are inherently capable of delivering weapons of mass destruction, and the proliferation of such systems by these entities undermines the international missile nonproliferation objectives that the United States relies on to promote its national security and foreign policy interests.
- On June 21, 2016, BIS published a final rule in the Federal Register (81 FR 14958) that added twenty-eight persons to the Entity List under thirty-one entries:
 - BIS added twenty persons located in Afghanistan, Austria, China, Hong Kong, Iran, Taiwan, and the U.A.E to the Entity List for their involvement in the shipment or attempted shipment or transshipment of U.S.-origin parts and components to Iran without notifying the U.S. companies that the parts would be shipped to Iran and without getting the required U.S. Government license; and
 - BIS added eight persons located in Israel and Panama to the Entity List for their involvement in the procurement and/or retransfer of U.S.- origin items to Israel and Iran without having first obtained the required authorization or license from the U.S. Government.
 - On August 23, 2016, BIS published a final rule in the Federal Register (81 FR 57451) that added ten persons to the Entity List under fourteen entries:
 - BIS added nine persons located in Iraq, Syria and Turkey for supporting persons engaged in acts of terror, as set forth in § 744.11(b)(1) of the EAR. These entities provided logistical and material support to the Islamic State of Iraq and the Levant (ISIL); and
 - BIS added one person located in the Philippines to the Entity List, who was indicted for exporting weapon sights and rifle scopes to the Philippines in violation of the EAR and the International Traffic in Arms Regulations (ITAR).

- On September 7, 2016, and December 27, 2016, BIS published two final rules in the Federal Register (81 FR 61595, 81 FR 94963) that added a total of 104 entities under 109 entries to the Entity List for engaging in activities contrary to the national security or foreign policy interests of the United States. These persons were listed under the destinations of the Crimea region of Ukraine, Hong Kong, India and Russia. BIS took this action to ensure the efficacy of existing sanctions on the Russian Federation (Russia) and added these persons for violating international law and fueling the conflict in eastern Ukraine. Entities were added based on activities described in four Executive Orders issued in 2014, specifically Executive Order 13660 (79 FR 13493), *Blocking Property of Certain Persons Contributing to the Situation in Ukraine*, Executive Order 13661 (79 FR 15533), *Blocking Property of Additional Persons Contributing to the Situation in Ukraine*, Executive Order 13662 (79 FR 16169), *Blocking Property of Additional Persons Contributing to the Situation in Ukraine*, and Executive Order 13685 (79 FR 77357), *Blocking Property of Certain Persons and Prohibiting Certain Transactions with Respect to the Crimea Region of Ukraine*. For persons listed pursuant to activities described in Executive Orders 13660, 13661 and 13685 BIS imposed a license requirement for all items subject to the EAR and a review policy of presumption of denial. For the persons listed based on activities described in Executive Order 13662, the license requirement applies to all items subject to the EAR and is based upon the exporter's knowledge of the item's use.
- On December 15, 2016, BIS published a final rule in the Federal Register (81 FR 90712) that added seven entities located in Pakistan to the Entity List. The End-User Review Committee had determined that these government, parastatal and private entities were involved in activities contrary to the national security and/or foreign policy of the United States.

Removals from the Entity List in 2016

BIS published rules on February 23, March 21, and June 21, 2016, that removed seventeen entities from the Entity List in 2016. The entities removed were located in Finland, Ireland, Pakistan, Turkey, Ukraine and the United Arab Emirates. The decision to remove these entities was based upon a review of the information these entities provided to BIS in accordance with Section 744.16 (Procedure for requesting removal or modification of an Entity List entity) and further review conducted by the End User Review Committee.

Modifications and Revisions to the Entity List in 2016

BIS published a rule on March 21, 2016 that modified the entries of two entities located in China by adding aliases and addresses.

BIS published rules on February 23 and September 20, 2016 that revised the entries of eighteen entities. The February 23 rule implemented correcting and conforming changes to six entities located in Iran and the September 20 rule revised the license requirements for twelve entities

located in China in order to maintain the level of national security warranted for certain encryption items. The September 20 rule also revised the entry of an entity located in Ecuador by adding an ECCN to the License Requirement.

BIS published a rule on March 24, 2016 that created a Temporary General License for two entities in China that BIS added to the Entity List on March 8. The Temporary General License returned the licensing and other policies of the Export Administration Regulations regarding exports, re-exports and transfers (in-country) to that which was in effect just prior to their having been added to the Entity List on March 8, 2016. BIS extended the Temporary General License through publication of rules on June 28, August 19 and November 18, 2016.

Licensing Policy

For each person placed on the Entity List, the ERC specifies a license requirement and a license review policy. The requirement and review policy vary from person to person and are described within each person's listing on the Entity List.

Analysis of Controls as Required by Section 6(f) of the Export Administration Act

A. The Purpose of the Controls

The purpose of the Entity List and its related controls is to protect and advance the United States' national security and foreign policy interests by demonstrating U.S. resolve to restrict trade with persons that fail to comply with U.S. export control laws and regulations or fail to adhere to acceptable norms of international behavior, or whose conduct threatens U.S. interests. The Entity List informs the public of entities that have engaged in activities that could result in an increased risk of diversion of items for use in weapons of mass destruction programs or in other activities contrary to U.S. national security and foreign policy interests. Addition of an entity to the Entity List deters the diversion of items subject to the EAR by imposing additional license requirements, often with a presumption of denial, to ensure U.S. government review of proposed exports, re-exports, and transfers of items to listed entities. All additions to the Entity List in 2016 consisted of persons engaging in activities contrary to U.S. national security and foreign policy interests.

B. Considerations and/or Determinations of the Secretary of Commerce

1. Probability of Achieving the Intended Foreign Policy Purpose. The Secretary has determined that imposing foreign policy-based controls as part of the licensing requirements that apply to persons added to the Entity List is likely to achieve the intended foreign policy (and national security) purposes.

Although the United States regularly negotiates with other countries on how best to achieve export control goals, these negotiations may not achieve those U.S. export control objectives that are focused on the conduct of specific persons. In cases where U.S. interests are at stake, the

United States retains the authority to impose controls in connection with such persons that reflect unilateral foreign policy objectives.

The United States seeks to prevent the use of U.S.-origin items in connection with actions that are detrimental to U.S. foreign policy goals. To that end, the license requirements that apply to entities placed on the Entity List are intended to prevent the acquisition of certain items by persons who might engage in activities contrary to U.S. interests. The Entity List enables BIS to target specific persons with export license requirements, thereby avoiding the imposition of broad license requirements on numerous items destined for many destinations.

2. *Compatibility with Foreign Policy Objectives.* The Secretary has determined that imposing these controls is compatible and consistent with the national security and foreign policy objectives of the United States. Specifically, these controls are consistent with the U.S. policy of prohibiting exports, re-exports, and transfers (in-country) when specific and articulable facts provide reasonable cause to believe that the persons to whom the items will be provided are involved in activities contrary to the national security or foreign policy interests of the United States, or pose a significant risk of becoming involved in such activities. Additionally, the Department of State's representation on the ERC assures that the decisions based on this rule will be compatible with U.S. foreign policy interests. The Secretary has further determined that these controls will not have significant adverse foreign policy consequences.

3. *Reaction of Other Countries.* The Secretary has determined that although other countries may raise objections to the Entity List, any adverse reaction to the expansion of the Entity List is not likely to render the Entity List ineffective, nor will any adverse reaction by other countries be counterproductive to U.S. foreign policy interests. Further, the Department of Commerce coordinates with the Department of State to consult with most countries affected by changes to the Entity List. These consultations are completed in advance of any proposed changes to the List. In addition, some countries use the Entity List as a screening tool for their exports.

4. *Economic Impact on United States Industry.* The Secretary has determined that the cost to industry resulting from the maintenance of these controls does not exceed the benefit to U.S. foreign policy. These controls provide an effective alternative to imposing additional and overly broad end use or destination-based export control requirements. The identification of persons through publication in the Entity List also reduces uncertainty for U.S. industry. Thus, these controls minimize the economic impact on industry while allowing BIS to achieve U.S. foreign policy objectives through strengthened U.S. export controls. Additionally, interagency representation on the ERC provides reasonable assurance that additions to the Entity List will reflect significant U.S. foreign policy concerns.

5. *Effective Enforcement of Controls.* The Secretary has determined that the United States has the ability to enforce these controls effectively. By imposing license requirements on clearly-identified persons via the Entity List, the U.S. Government facilitates the identification of actual and potential violations of the EAR. Publication of the Entity List helps U.S. industry and

foreign companies to identify restricted persons, thereby reducing inadvertent violations of the EAR and increasing compliance with the export controls.

The Entity List is a formidable administrative tool that prohibits listed foreign persons from receiving some or all items subject to the EAR unless the exporter, re-exporter, or transferor receives a license. During 2016, the ERC added 205 entities to the Entity List.

BIS conducted a number of enforcement actions regarding noncompliance with these controls, including:

Arc Electronics Inc./Apex System L.L.C.

Controlled Microelectronics to Russian Military and Intelligence Agencies

On October 26, 2015, after a month-long trial, Alexander Posobilov, Shavkat Abdullaev and Anastasia Diatlova were convicted of conspiring to export, and illegally exporting, controlled microelectronics to Russia. Posobilov was also convicted of money laundering conspiracy. The defendants, all of whom worked at Arc Electronics Inc., a Houston, Texas-based corporation, and eight other individuals were originally charged in October 2012 related to a scheme to illegally export sophisticated technology to Russia, much of which was destined for Russian military and intelligence agencies. Between approximately October 2008 and October 2012, these defendants and their co-conspirators obtained advanced microelectronics valued at over \$30 million from manufacturers and suppliers located within the United States and exported those goods to Russia, while carefully evading the government export licensing system. The defendants and their co-conspirators provided false end user information in connection with the purchase of the goods, concealed the fact that they were resellers and falsely classified the goods they exported on export records submitted to the Department of Commerce. The microelectronics shipped to Russia included analog-to-digital converters, static random access memory chips, microcontrollers and microprocessors. These commodities have applications, and are frequently used, in a wide range of military systems, including radar and surveillance systems, missile guidance systems and detonation triggers. On September 9, 2015, Arc Electronics President Alexander Fishenko pleaded guilty to acting as an agent of the Russian government, conspiring to export, and illegally exporting, microelectronics to Russia, money laundering conspiracy and obstruction of justice. On October 9, 2012, BIS added 165 persons and companies to its Entity List for allegedly engaging in this illegal export scheme. This was a joint investigation with OEE's Dallas Field Office, the FBI, NCIS, and the IRS.

Alexander Brazhnikov Jr./ABN Universal

Electronic Components to Entity List Companies in Russia

On June 30, 2016, Alexander Brazhnikov, owner of ABN Universal in Carteret, New Jersey, was sentenced in U.S. District Court for the District of New Jersey to 70 months in prison, a \$75,000 criminal fine, a \$65 million forfeiture, forfeiture of his two houses valued at approximately \$500,000 each, and a \$300 special assessment. On June 11, 2015, Brazhnikov pled guilty to

conspiracy to commit money laundering, conspiracy to smuggle electronics from the United States, and conspiracy to violate the International Emergency Economic Powers Act. Brazhnikov and his companies are part of a sophisticated procurement network that obtained and smuggled more than \$65 million worth of regulated, sensitive electronic components from American manufacturers and vendors and exported those items the Federal States Unitary Enterprise Russian Nuclear Center - Acadenucyan E.I. Zababkhinh All-Russian Scientific Research Institute of Physics, and MIG Electronics, located in Russia. Both companies appear on BIS's Entity List. Brazhnikov was responsible for nearly 2,000 illegal shipments of electronics components, many of which wound up in the hands of Russian military and security forces. Brazhnikov also took extensive measure to conceal the true destination of the parts and to conceal the true sources of funds in Russia, as well as the identities of the various Russian defense contracting firms receiving U.S.-origin electronics components. This was a joint investigation with OEE's New York Field Office, ICE, and the FBI.

C. Consultation with Industry

In a September 8, 2016 Federal Register notice (81 FR 62080), the Department of Commerce solicited comments from industry and the public on the effectiveness of U.S. foreign policy-based export controls. In addition, comments were solicited from the public via the BIS website. The comment period closed on October 11, 2016. A detailed review of all public comments received can be found in Appendix I.

D. Consultation with Other Countries

The United States continues to consult with a number of countries, on both a bilateral and multilateral basis, regarding the persons on the Entity List. These consultations provide a forum for the United States to gather specific and articulable facts to support additions to the Entity List based on reasonable cause that the parties pose a significant risk of becoming involved in activities contrary to the national security or foreign policy interests of the United States and other countries. Most countries are supportive of U.S. export and re-export controls and enforcement, including Entity List licensing requirements.

E. Alternative Means

The United States continually reviews its means to curtail activities that are contrary to U.S. interests. The United States has taken a wide range of diplomatic, political, and security-related steps to support this effort.

F. Foreign Availability

The Department of Commerce is aware that these controls will not necessarily prevent the acquisition of sensitive commodities, software, or technologies not subject to the EAR by persons listed on the Entity List. However, by publishing the Entity List and imposing penalties for violations of the licensing requirements on the Entity List, the United States is sending a

strong message that may deter suppliers from participating in transactions with persons known or suspected of violating the EAR or acting contrary to U.S. interests. Additionally, the United States cooperates with other governments to curtail transactions by other (third-country) suppliers.

APPENDIX I

Summary of Public Comments On Foreign Policy-Based Export Controls

The Department of Commerce's Bureau of Industry and Security (BIS) requested public comments on existing foreign policy-based export controls maintained under Section 6 of the Export Administration Act of 1979, as amended (EAA), and on the Entity List (Supplement No.4 to Part 744 of the Export Administration Regulations (EAR)) through a Federal Register notice published September 8, 2016 (81 FR 62080). In addition, comments were solicited from the public through the BIS web page. Comments from the Department's seven Technical Advisory Committees are solicited on an ongoing basis and are not specific to this report.

BIS requested comments on how existing foreign policy controls have affected exporters and the overall public. The notice invited public comments about issues such as: the effectiveness of controls when foreign availability exists; whether the goals of the controls can be achieved through other means such as negotiations; the compatibility of the controls with the overall U.S. policy toward a country in question; the effect of controls on U.S. economic performance; and the ability to enforce the controls.

The comment period closed on October 11, 2016. BIS received one comment. BIS will make this comment available for review in the BIS Freedom of Information Act Reading Room available on the BIS web page. BIS will also make the comment available for public review upon request. This Appendix summarizes the comments received.

Industry Comments

Kermit Kubitz submitted one comment about foreign policy-based controls as deterring nuclear proliferation and avoiding the potential costs and risks of the spread of nuclear weapons and associated technology. Mr. Kubitz goes on to say the ability of other countries to restrict access to their own technology or information through export controls does not detract from the effectiveness of export controls. In conclusion, he states the continued issues with nuclear proliferation require, not just suggest, continuation of associated export controls.

APPENDIX II

Multilateral Export Control Regimes in 2016

WASSENAAR	AG	MTCR	NSG
Argentina	Argentina	Argentina	Argentina
Australia	Australia	Australia	Australia
Austria	Austria	Austria	Austria
			Belarus
Belgium	Belgium	Belgium	Belgium
		Brazil	Brazil
Bulgaria	Bulgaria	Bulgaria	Bulgaria
Canada	Canada	Canada	Canada
Croatia	Croatia		Croatia
	Cyprus		Cyprus
Czech Republic	Czech Republic	Czech Republic	Czech Republic
Denmark	Denmark	Denmark	Denmark
Estonia	Estonia		Estonia
	European Commission		European Union (Observer)
Finland	Finland	Finland	Finland
France	France	France	France
Germany	Germany	Germany	Germany
Greece	Greece	Greece	Greece
Hungary	Hungary	Hungary	Hungary
	Iceland	Iceland	Iceland
		India	
Ireland	Ireland	Ireland	Ireland
Italy	Italy	Italy	Italy
Japan	Japan	Japan	Japan
			Kazakhstan
Latvia	Latvia		Latvia
Lithuania	Lithuania		Lithuania
Luxembourg	Luxembourg	Luxembourg	Luxembourg
Malta	Malta		Malta
Mexico	Mexico		Mexico
Netherlands	Netherlands	Netherlands	Netherlands
New Zealand	New Zealand	New Zealand	New Zealand
Norway	Norway	Norway	Norway
			People's Republic of China
Poland	Poland	Poland	Poland

WASSENAAR	AG	MTCR	NSG
Portugal	Portugal	Portugal	Portugal
Rep. of Korea (South Korea)	Rep. of Korea (South Korea)	Rep. of Korea (South Korea)	Rep. of Korea (South Korea)
Romania	Romania		Romania
Russian Federation		Russia Federation	Russian Federation
			Serbia
Slovak Republic	Slovak Republic		Slovak Republic
Slovenia	Slovenia		Slovenia
South Africa		South Africa	South Africa
Spain	Spain	Spain	Spain
Sweden	Sweden	Sweden	Sweden
Switzerland	Switzerland	Switzerland	Switzerland
Turkey	Turkey	Turkey	Turkey
Ukraine	Ukraine	Ukraine	Ukraine
United Kingdom	United Kingdom	United Kingdom	United Kingdom
United States	United States	United States	United States

AG: Australia Group; **MTCR:** Missile Technology Control Regime; **NSG:** Nuclear Suppliers Group

APPENDIX III

Selected Rules Published by the Department of Commerce in 2016

Publication Date	Federal Register Citation	Rule
1/4/2017	82 FR 722	Addition of Certain Entities to the Entity List
12/27/2016	81 FR 94971	Commerce Control List: Updates Based on the 2015 and 2016 Nuclear Suppliers Group (NSG) Plenary Meetings; Conforming Changes and Corrections to Certain Nuclear Nonproliferation (NP) Controls.
12/27/2016	81 FR 94963	Russian Sanctions: Addition of Certain Entities to the Entity List, and Clarification of License Review Policy
12/27/2016	81 FR 94962	Burma: Amendment of the Export Administration Regulations Consistent with an Executive Order that Terminated U.S. Government's Sanctions
12/16/2016	81 FR 90983	Implementation of the February 2016 Australia Group (AG) Intersessional Decisions and the June 2016 AG Plenary Understandings
12/15/2016	81 FR 90712	Addition of Certain Persons to the Entity List
12/5/2016	81 FR 87424	Amendment to the Export Administration Regulations: Removal of Special Iraq Reconstruction License
12/5/2016	81 FR 87246	Amendment to the Export Administration Regulations: Removal of Semiconductor Manufacturing International Corporation from the List of Validated End-Users in the People's Republic of China
12/1/2016	81 FR 86571	Temporary Exports to Mexico under License Exception TMP
11/25/2016	81 FR 85138	Commerce Control List: Removal of Certain Nuclear Nonproliferation (NP) Column 2 Controls
11/18/2016	81 FR 81663	Temporary General License: Extension of Validity
11/4/2016	81 FR 76859	Amendments to the Export Administration Regulations: Update of Arms Embargoes on Cote d'Ivoire, Liberia, Sri Lanka and Vietnam, and Recognition of India as Member of the Missile Technology Control Regime
10/17/2016	81 FR 71365	Cuba: Revisions to License Exceptions
9/20/2016	81 FR 64694	Revisions to the Entity List
9/7/2016	81 FR 61595	Russian Sanctions: Addition of Certain Entities to the Entity List
9/6/2016	81 FR 611044	Amendments to Existing Validated End-User Authorization in the People's Republic of China: Boeing Tianjin Composites Co. Ltd.
8/23/2016	81 FR 57451	Addition of Certain Persons to the Entity List
8/19/2016	81 FR 55372	Temporary General License Extension of Validity
6/28/2016	81 FR 41799	Temporary General License: Extension of Validity
6/23/2016	81 FR 40783	Amendments to Existing Validated End-User Authorization in the People's Republic of China: Advanced Micro Devices, Inc.
6/21/2016	81 FR 40174	Addition of Certain Persons and Removal of Certain Persons from the Entity List

Appendix III Selected Rules Published by the Department of Commerce in 2016

6/3/2016	81 FR 35586	Revisions to Definitions in the Export Administration Regulations
5/12/2016	81 FR 29483	Removal of Short Supply License Requirements on Exports of Crude Oil
3/24/2016	81 FR 15633	Temporary General License
3/21/2016	81 FR 14953	Addition of Certain Persons and Modification of Certain Entries to the Entity List; and Removal of Certain Persons from the Entity List
3/16/2016	81 FR 13972	Cuba Licensing Policy Revisions
3/8/2016	81 FR 12004	Additions to the Entity List
2/23/2016	81 FR 8825	Addition of Certain Persons and Modification of Certain Entries to the Entity List; and Removal of Certain Persons from the Entity List
1/27/2016	81 FR 4580	Cuba Licensing Policy Revisions