



October 2014

NUCLEAR COMMERCE

Additional Actions Needed to Improve DOE's Export Control Process

GAO Highlights

Highlights of [GAO-15-124](#), a report to congressional requesters

Why GAO Did This Study

Encouraging U.S. exports of civilian nuclear products, services, and technology while ensuring they are not used for foreign nuclear weapons programs is a fundamental goal of U.S. policy. Exports of U.S. civilian nuclear technology, assistance, and services are regulated by DOE through 10 C.F.R. Part 810. Depending on the importing country and technology, exports can be generally authorized, with no application required, or specifically authorized, in which case the exporter must submit an application to DOE. The Departments of Commerce, Defense, and State, as well as the Nuclear Regulatory Commission, also review the applications, which must finally be approved by the Secretary of Energy.

GAO was asked to examine the Part 810 process. This report examines (1) Part 810 processing times over the last 6 years compared with DOE's targets; (2) the extent to which Part 810's scope is clear and DOE can reasonably assure consistent interpretation; and (3) the extent to which DOE enforces Part 810. GAO analyzed all 89 specific authorizations granted from 2008-2013 and interviewed key agency officials and U.S. nuclear industry representatives.

What GAO Recommends

GAO recommends that the Secretary of Energy take several actions to improve the Part 810 process, such as determine whether DOE has legal authority to impose civil penalties, and establish realistic and achievable targets for each stage of the Part 810 process, as well as the overall process. DOE agreed with the recommendations.

View [GAO-15-124](#). For more information, contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov or Thomas Melito at (202) 512-9601 or melitot@gao.gov.

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What GAO Found

The Department of Energy (DOE) has consistently missed its 30-day targets for the initial and interagency stages of the Part 810 review process (see table). From 2008 through 2013, DOE missed the target for the initial review stage for 80 of 89 applications processed, and interagency review times missed DOE's 30-day target for 85 applications. DOE has not established a target for the entire final review stage, which had the longest median review times, or for the overall process. DOE has acknowledged exporter concerns that processing times for specific authorizations can impose business risks, and DOE officials have proposed initiatives to reduce processing times.

	Initial review stage	Interagency review stage	Final review stage
Target review time	30 days	30 days	None
Median Review time	71 days	105 days	125 days
Longest review time	1,035 days	810 days	921 days
Shortest review time	0 days ^a	12 days	14 days
Reviews exceeding 30 days	80 of 89	85 of 89	86 of 89

Source: GAO analysis of Department of Energy information. | GAO-15-124

^aThe 0-day initial review was for an amended application whose initial review was completed the same date the amended application was submitted.

The scope of Part 810 is unclear, and DOE's inquiry process does not reasonably assure that the regulation is consistently interpreted. For example, it is unclear what marketing activities are covered by Part 810. DOE has not provided written guidance to clarify the regulation's scope, instead directing exporters to inquire with DOE officials. DOE officials said that they do not document all such inquiries or their responses. Without such documentation, DOE can neither reasonably assure that its responses are consistent, nor can it analyze the inquiries to identify parts of the regulation that may need clarification. DOE is taking some steps to clarify Part 810 by defining or refining some key terms. However, DOE's revisions do not address all terms that exporters have identified as unclear, and the time frame of DOE's revisions is unknown.

DOE has taken limited actions to enforce Part 810. DOE's primary method for monitoring compliance with Part 810 is reading reports from exporters, but according to DOE officials, they conduct in-depth analysis on less than 10 percent of reports and do not have a risk-based procedure for selecting reports to analyze. Also, because DOE does not provide guidance for companies to self-identify and self-report possible violations, DOE is missing an opportunity to leverage exporters' role in monitoring their own compliance. DOE has not yet determined whether it has the legal authority to impose civil penalties for violations of Part 810. According to DOE officials, DOE has never taken a formal action for a violation of Part 810, such as revoking an authorization or referring a potential violation to the Department of Justice (DOJ). Furthermore, DOJ officials reported that they are not aware of any prosecutions related to Part 810 violations from 2008-2013, the time frame GAO reviewed.

Contents

Letter		1
	Background	5
	DOE Consistently Missed Target Time Frames for Processing Part 810 Applications, with the Interagency and Final Review Stages Taking Longest	9
	Part 810 Is Unclear in Its Scope, and DOE's Inquiry Process Does Not Reasonably Assure Consistent Interpretation	19
	DOE Has Taken Limited Actions to Enforce Its Nuclear Export Controls	26
	Conclusions	35
	Recommendations for Executive Action	36
	Agency Comments and Our Evaluation	37
Appendix I	Scope and Methodology	41
Appendix II	Enforcement Tables	46
Appendix III	Comments from the Department of Energy	49
Appendix IV	GAO Contacts and Staff Acknowledgments	56
Tables		
	Table 1: U.S. Nuclear Export Control Regime	6
	Table 2: Comparison of Processing Times for Part 810 Process	16
	Table 3: Common Conditions for Specific Part 810 Authorizations for Deemed Exports, 2008-2013	28
	Table 4: Common Conditions for Specific Part 810 Authorizations Other Than for Deemed Exports, 2008-2013	29
	Table 5: Conditions Imposed through Specific Authorizations for 18 Deemed Exports, 2008 - 2013	46
	Table 6: Conditions Imposed through Specific Authorizations for 72 Technology Exports (Other Than Deemed Exports), 2008-2013	47

Figures

Figure 1: The Three-Stage Process for Reviewing Commercial Nuclear Technology Export Applications under 10 C.F.R. Part 810	7
Figure 2: Median Processing Time per Stage Compared with Applicable Targets	10
Figure 3: Median Processing Time per Stage for Deemed and Other Exports	13
Figure 4: Specific Authorizations by Year, 2008-2013	31

Abbreviations

AEA	Atomic Energy Act
ANS	American Nuclear Society
AUECO	Association of University Export Control Officers
BIS	Bureau of Industry and Security
Commerce	Department of Commerce
DDTC	Directorate of Defense Trade Controls
DOD	Department of Defense
DOE	Department of Energy
DOJ	Department of Justice
IAEA	International Atomic Energy Agency
ISO	International Standards Organization
ITAR	International Traffic in Arms Regulations
MOX	mixed oxide
NE	Office of Nuclear Energy
NEI	Nuclear Energy Institute
NIC	Nuclear Infrastructure Council
NNSA	National Nuclear Security Administration
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NRC	Nuclear Regulatory Commission
NSG	Nuclear Suppliers Group
OEE	Office of Export Enforcement
OIP	Office of International Programs
State	Department of State
UAE	United Arab Emirates

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October 14, 2014

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
House of Representatives

The Honorable Tim Murphy
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

Renewed interest in nuclear power worldwide has led to increased concerns about limiting the spread of nuclear weapons-relevant technology. Seeking a balance between encouraging U.S. exports of civilian nuclear products, services, and technology while ensuring they are not used for foreign nuclear weapons programs has long been a fundamental goal of U.S. policy. The U.S. nuclear industry faces formidable competition abroad from foreign companies, some of which receive strong financial and political support through direct government ownership or subsidies. As we reported in 2010, the U.S. share of global nuclear exports decreased during the period from 1994 through 2008.¹ U.S. nuclear companies have raised concerns that, compared with the nuclear export control regimes of their major competitors—in Russia, Japan, South Korea, and France—the U.S. regime is, in many respects, more complex, restrictive, and time-consuming.

In 2010, we found that U.S. industry representatives believed that certain U.S. government policies and practices—particularly the Department of Energy's (DOE) authorization process under 10 C.F.R. Part 810—

¹GAO, *Nuclear Commerce: Governmentwide Strategy Could Help Increase Commercial Benefits from U.S. Nuclear Cooperation Agreements with Other Countries*, [GAO-11-36](#) (Washington, D.C.: Nov. 4, 2010).

impeded the U.S. nuclear industry's ability to compete globally.² Part 810 empowers the Secretary of Energy to authorize persons subject to the jurisdiction of the United States to directly or indirectly engage in the development or production of special nuclear material, which includes plutonium,³ outside of the United States, upon a determination that the activity will not be inimical to the national interest. Part 810 applies broadly to commercial nuclear technology, assistance, and services abroad because nuclear reactors fueled with uranium also produce plutonium. Nuclear technology and assistance may include training and services in support of commercial power reactors, as well as tangible items such as manuals, blueprints, and software. Exports subject to Part 810 also include the transfer of technology to non-U.S. persons in civilian U.S. nuclear facilities and universities.⁴

Exports with little or no proliferation or national security significance may be generally authorized under Part 810, with no application required. For example, the export of commercial nuclear power reactor technology may be generally authorized unless intended for restricted countries or nationals of those countries, to which any export of civilian nuclear technology must be specifically authorized through an application to DOE.⁵ Transactions with a more direct relationship to the production of special nuclear material must always be specifically authorized through

²See [GAO-11-36](#). Exports of U.S. civilian nuclear technology are regulated under 10 C.F.R. Part 810, which implements Section 57(b) of the Atomic Energy Act (AEA). The National Nuclear Security Administration (NNSA)—a separately organized agency within DOE—implements Part 810 through its Office of Nonproliferation and International Security. Part 810 applies to persons subject to the jurisdiction of the United States who engage directly or indirectly in the production of special nuclear material outside the United States, or by licensees, contractors or subsidiaries under their direction, supervision, responsibility, or control.

³Special nuclear material includes plutonium and uranium enriched in the isotopes uranium-233 or uranium-235.

⁴The activities of non-U.S. persons in U.S. nuclear facilities are referred to as “deemed exports” because foreign nationals gain access to U.S. nuclear technology through such activities.

⁵Commercial (or civilian) nuclear power activities represent “indirect” engagement or participation in the development or production of special nuclear material, and may or may not require specific authorization under Part 810. According to DOE documents, the agency interprets Part 810 broadly to include the provision of technology in the form of assistance or services to any nuclear power program outside the United States. 10 C.F.R. Part 810 includes a list of 77 restricted countries, including China, Russia, and India.

an application to DOE, regardless of the countries involved.⁶ DOE's procedures for approving specifically authorized exports include target time frames, and the authorizations include conditions to hold the exporter, importer, and importing government accountable for protecting the technology and reducing the risk of proliferation. DOE data show that the value of generally authorized transactions is currently in the range of \$2 billion to \$3 billion per year, and the total value of specifically authorized transactions since 2009 is at least \$13.6 billion. According to DOE officials and nuclear industry representatives, Part 810 applications are typically the initial foray into a broader nuclear relationship with a foreign partner company or foreign country.⁷

In 2010,⁸ we recommended that DOE review the Part 810 process and develop guidelines to help clarify the types of technology, information, and technical assistance that require a Part 810 authorization, among other things. Clarity and consistency are among the key principles of efficient regulation, according to two executive orders.⁹ DOE reviewed the Part 810 process and, in August 2013, DOE issued a Supplemental Notice of Proposed Rulemaking,¹⁰ with the purpose of "striking a balance to promote trade without increasing proliferation risk," by clarifying the scope of the regulation, among other things. In this proposed rule, DOE

⁶The export of sensitive nuclear technology to any country must always be specifically authorized under Part 810. For example, enrichment is a sensitive nuclear technology. Enrichment is generally defined as the process of increasing the concentration of uranium-235 from its natural concentration of less than 1 percent so that the uranium can be used for fuel in most commercial power reactors (or in a nuclear weapon).

⁷Part 810-authorized activities, such as bids for contracts, may be followed by activities that require export licenses from the Nuclear Regulatory Commission (NRC), which regulates exports of certain nuclear materials and equipment, under 10 C.F.R. Part 110. These nuclear materials and equipment include enriched uranium and reactor components, which can only be exported via NRC license if there is an agreement for civil nuclear cooperation (123 agreement) or a Project and Supply Agreement in place with the importing country.

⁸[GAO-11-36](#).

⁹Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993); Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011). In particular, Executive Order 13,563 directs that regulations be accessible, consistent, written in plain language, and easy to understand.

¹⁰Assistance to Foreign Atomic Energy Activities, 78 Fed. Reg. 46,829 (Aug. 2, 2013) (to be codified at 10 C.F.R. pt. 810). In September 2011, DOE issued a Notice of Proposed Rulemaking for Part 810 (Assistance to Foreign Atomic Energy Activities, 76 Fed. Reg. 55,278 (Sep. 7, 2011)).

further noted that the goals of Part 810 were efficient regulation—defined by an efficient, timely, transparent, and predictable regulatory process; effective nuclear trade support; and effective threat reduction by better addressing proliferation challenges.

In light of the international security and commercial implications of the export of U.S. civilian nuclear technology, you asked us to examine the Part 810 process. This report examines (1) Part 810 processing times, compared with DOE’s targets, for applications over the last 6 years; (2) the extent to which the scope of Part 810 is clear and DOE can reasonably assure consistent interpretation; and (3) the extent to which DOE enforces Part 810.

To examine processing times over the last 6 years for Part 810 applications, we reviewed DOE’s 10 C.F.R. Part 810 Assistance to Foreign Atomic Energy Activities Part 810 Program Elements to determine DOE’s target time frames, and analyzed data on the processing times for specific authorizations granted from 2008 through 2013. We selected eight applications to examine in more depth and interviewed agency officials to better understand the factors affecting processing times. We also interviewed representatives of nuclear exporters (including representatives of nuclear companies and industry organizations, as well as university export control officers) regarding how Part 810 processing times affect exporters, and we reviewed public comments submitted in response to DOE’s proposed changes. To examine the extent to which the scope of Part 810 is clear and DOE can reasonably assure that the regulation is consistently interpreted, we consulted the Atomic Energy Act, the federal standards for internal control,¹¹ and executive orders related to government regulation,¹² and we interviewed DOE officials and representatives of nuclear exporters for their views on the clarity of the regulation, and reviewed public comments submitted in response to DOE’s proposed changes. To examine the extent to which DOE enforces Part 810, we reviewed the authorization letters signed by the Secretary that state a determination that the proposed export is not inimical to the interest of the United States,

¹¹GAO, *Standards for Internal Control in the Federal Government*, [GAO/AIMD-00-21.3.1](#) (“Green Book”) (Washington, D.C.: November 1999).

¹²Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993); Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011).

provided that the conditions imposed in the authorization are met. We also interviewed DOE officials and Part 810 applicants about these conditions and the mechanisms DOE uses to enforce the regulation.

We conducted this performance audit from August 2013 to October 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Appendix I contains more detailed information on the scope and methodology of our review.

Background

Different federal agencies have jurisdiction to control various types of nuclear-related exports; DOE regulates the export of nuclear technology through Part 810, which implements Section 57(b) of the Atomic Energy Act; DOE and the Department of Justice (DOJ) have roles in enforcing Part 810.

Nuclear Export Controls

Four federal agencies share jurisdiction over nuclear-related exports, with different agencies regulating different types of such exports. DOE regulates exports of commercial nuclear technology and assistance through its National Nuclear Security Administration's (NNSA) Office of Nonproliferation and International Security.¹³ The Nuclear Regulatory Commission (NRC) regulates exports of commercial nuclear materials and equipment through its Office of International Programs (OIP). Nuclear materials and equipment include certain enriched uranium and reactor components, respectively. The Department of Commerce (Commerce) regulates dual-use items—those that can be used for both commercial and military applications—and certain military items. Nuclear dual-use items include, among other things, turbines, generators, and machine tools. The Department of State (State) regulates munitions items and technologies—those designed, developed, configured, adapted, or modified solely for military applications. Table 1 provides additional detail on the U.S. nuclear export control regime.

¹³ NNSA is a separately organized agency within DOE.

Table 1: U.S. Nuclear Export Control Regime

Agency and authority	Jurisdiction	Examples
Department of Energy National Nuclear Security Administration (Part 810)	Nuclear technology and services related to the production of special nuclear material	<ul style="list-style-type: none"> • Providing information or assistance to address a radiological emergency; enhance the safety of a civilian nuclear facility in certain other countries • Participating in open meetings sponsored by educational, scientific, or technical organizations; approved exchange and International Atomic Energy Agency (IAEA) programs • Providing sensitive nuclear technology (for example, through blueprints, manuals, or services) • Designing, building, or operating: production reactors, facilities for enrichment or reprocessing; or some research and test reactors • Deemed exports and deemed re-exports (activities of non-U.S. persons accessing U.S. nuclear technologies)
Nuclear Regulatory Commission (Part 110)	Nuclear reactors, reactor components, and material	<ul style="list-style-type: none"> • Nuclear reactor or fuel cycle facilities • Reactor components • Special nuclear material and source material • Byproduct material • Deuterium (heavy hydrogen) • Nuclear grade graphite for nuclear end use
Department of Commerce (Export Administration Regulations)	Nuclear-related dual-use items	<ul style="list-style-type: none"> • Pressure transducers, mass spectrometers, machine tools • Health and safety equipment • Turbines, generators, pipes, and valves • Materials and manufacturing equipment • General infrastructure, telecommunications, and maintenance equipment
Department of State (International Traffic in Arms Regulations)	Defense articles and services	<ul style="list-style-type: none"> • Nuclear reactors and associated power conversion systems associated with spacecraft • Nuclear thermal propulsion systems associated with spacecraft

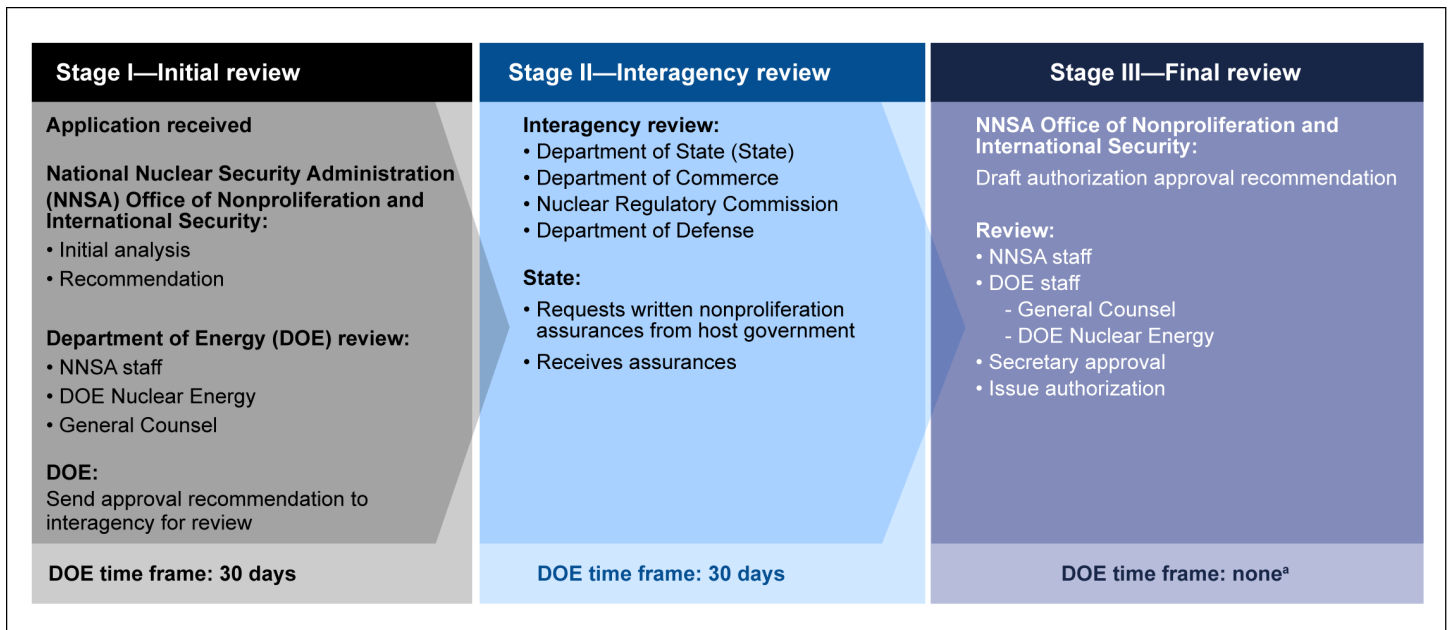
Sources: GAO analysis of agency data. | GAO-15-124

The Atomic Energy Act and the Part 810 Process

DOE regulates exports of commercial nuclear technology and assistance under section 57(b) of the Atomic Energy Act (AEA), which governs development or production of special nuclear material outside the United States. DOE implements section 57(b) through the regulations at 10 C.F.R. Part 810. Part 810 applies to commercial activities because nuclear reactors fueled with uranium also produce plutonium. Section 57(b) of the AEA requires establishment of orderly and expeditious procedures, to include, among other things, explicit direction on the

handling of requests to engage or participate in development or production of special nuclear material outside of the United States and express deadlines for soliciting and collecting the views of the other agencies (with identified officials responsible for meeting such deadlines). Activities generally authorized under Part 810 do not require prior application to or notification of the Secretary of Energy, although companies must report certain information about such activities to DOE within 30 days. Applications for specific authorization, which must be approved by the Secretary of Energy, undergo a three-stage review process, as depicted in figure 1.

Figure 1: The Three-Stage Process for Reviewing Commercial Nuclear Technology Export Applications under 10 C.F.R. Part 810



Source: NNSA. | GAO-15-124

^aThere is no target time frame for the entire final review stage; however, the Secretary is to be provided with a recommendation regarding the determination no later than 30 days following receipt of the interagency concurrence or views (or 60 days in the event of interagency disagreements).

In the first or “initial” review stage, NNSA prepares an analysis of each application. In the second or “interagency” review stage, NNSA provides the application to State for concurrence and to the NRC, Commerce, and

the Department of Defense (DOD) for consultation.¹⁴ DOE's target time frames for completion of the initial and interagency review stages are 30 days each. DOE does not have a target time frame for completion of the third or "final" review stage, in which NNSA and DOE staff conduct a final review of the application and make a recommendation to the Secretary, who then makes a determination as to whether the proposed export would be inimical to the national interest. DOE does, however, have an interim target within the final review stage for providing a recommendation to the Secretary. Specifically, NNSA's procedures for processing, reviewing, and approving specific authorizations state that the Secretary is to be provided with a recommendation no later than 30 days following receipt of the interagency concurrence or views, or 60 days in the event of interagency disagreements.¹⁵

Enforcement

Both DOE and DOJ have a role in the enforcement of Part 810. DOE may act to correct deficiencies in applications or processes, or obtain an injunction or restraining order to prevent violation of Part 810, and may refer suspected criminal violations to DOJ for investigation and possible prosecution under the AEA. Any person convicted of violating, conspiring, or attempting to violate Section 57 of the AEA; or of willfully falsifying, concealing, or covering up a material fact or making false, fictitious or fraudulent statements or representations may be fined or imprisoned or both. Further, under Part 810, if a violation of the AEA is committed with intent to injure the United States or to aid a foreign nation, the penalty could be up to life imprisonment and a \$20,000 fine. DOE has not yet determined whether it has legal authority to apply civil penalties for violation of Part 810. DOE monitors compliance with Part 810 in part through reports that exporters are required to submit on authorized activities.

¹⁴State's concurrence is required under the AEA; DOE must consult the other agencies, but their concurrence is not required.

¹⁵However, the procedures state that any time period in this stage may be extended by the Assistant Secretary for Defense Programs or his designee. Under DOE's current organization, which has changed since the procedures were last updated, this official is the Deputy Administrator for Defense Nuclear Nonproliferation, NNSA. Amendment to Procedures Established Pursuant to the Nuclear Nonproliferation Act of 1978, 49 Fed. Reg. 20,780 (May 16, 1984).

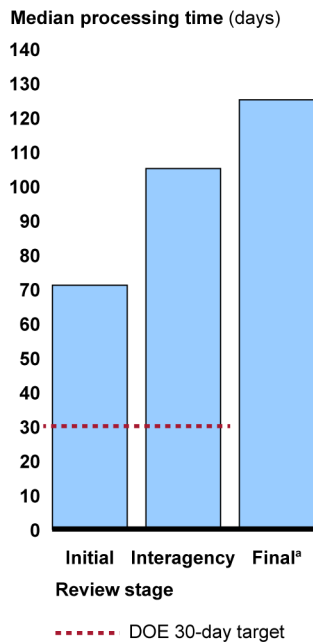
The United States has pledged to adhere to a set of guidelines that include export licensing regulations, enforcement procedures, and penalties for violations. These guidelines, developed by nuclear supplier countries (the Nuclear Suppliers Group [NSG]), aim to ensure that trade in civilian nuclear technologies does not contribute to nuclear proliferation.¹⁶ The NSG was established in 1975, and since 1978, it has published guidelines which cover transfers of nuclear and nuclear-related dual use equipment, material, software, and related technology. These guidelines lay out principles for the members to apply, in accordance with their national requirements. All NSG members, including the United States, have pledged to put in place legal measures to ensure the effective implementation of the NSG guidelines.

DOE Consistently Missed Target Time Frames for Processing Part 810 Applications, with the Interagency and Final Review Stages Taking Longest

From 2008 through 2013, DOE consistently missed its 30-day targets to complete the initial and interagency stages of the Part 810 review process. Specifically, during this period, DOE missed the target to complete the initial stage of review for 80 of the 89 applications processed. Similarly, interagency review times missed DOE's target for 85 of the applications. The third stage, for which DOE has not established a target time frame, had the longest median review times. (See fig. 2). U.S. nuclear exporters said that the lengthy and unpredictable Part 810 time frames can impose business risks.

¹⁶NSG is a voluntary, nonbinding arrangement among nuclear supplier countries. Participating countries undertake a political commitment to abide by the goals and principles established by the group.

Figure 2: Median Processing Time per Stage Compared with Applicable Targets



Source: GAO analysis of National Nuclear Security Administration data. | GAO-15-124

^aThere is no target time frame for the entire final review stage; however, the Secretary is to be provided with a recommendation regarding the determination no later than 30 days following receipt of the interagency concurrence or views (or 60 days in the event of interagency disagreements).

DOE Missed Its Target to Complete Initial Review for 90 Percent of Applications

We found that DOE missed its target to complete initial review for 90 percent (80 of 89) of the applications for specific authorization approved from 2008 through 2013 (no application was denied during this period). DOE took a median of 71 days to complete the initial review stage, with DOE's longest initial review taking 1,035 days.¹⁷ In this stage, NNSA prepares an analysis of each application based on a set of technical and other reviews by experts in DOE's National Laboratories, its Office of Nuclear Energy (NE) and Office of General Counsel, and NNSA's Office

¹⁷In the data that DOE provided to us, on which we based our analysis, DOE recorded the date on the application as the start date for the initial review stage. However, DOE officials told us that they sometimes have to contact applicants to request additional information or clarification and do not start reviewing the application until they receive all of the required information. In response to GAO inquiries about Part 810 processing times in November 2013, DOE began using the docket date—the date the initial internal review actually begins—as the start date for the initial review stage.

of General Counsel. NNSA considers eight factors, including whether the United States has an agreement for nuclear cooperation with the nation or group of nations involved; whether the country is a party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT); and whether the country involved has entered into an agreement with the International Atomic Energy Agency (IAEA) for the application of safeguards on all its peaceful nuclear activities.

For the two applications that we reviewed based on their initial review times—one that met the 30-day initial review target, and one that did not—the nature of the proposed export affected the initial review times. Specifically, an application for a U.S. company to provide assistance to the United Arab Emirates' (UAE) nuclear regulatory body had a 29-day initial review stage (meeting the 30-day target), because, according to DOE officials, the details of the application matched those of another recently submitted application. As a result, DOE's internal review of this application could leverage the work completed for the preceding application. The application that missed the target, taking 186 days for initial review, was for the export of mixed oxide (MOX) fuel fabrication technology to the United Kingdom.¹⁸ According to DOE officials, MOX is a sensitive technology, which requires greater scrutiny.

Interagency Review Times Missed DOE's Target for More Than 95 Percent of Applications

Interagency review times missed DOE's 30-day target for 85 of the 89 applications approved from 2008 through 2013. The interagency review stage was the second longest in the process, with a median review time of 105 days. Ten applications took more than a year for interagency review. As noted earlier, in this stage, DOE seeks concurrence from State, and consults Commerce, NRC, and DOD. These agencies have 30 days to provide comments or concurrence, including any conditions they would place on the authorization.

State took the longest among the agencies to provide its comments or concurrence. State's median review time—86 days—was nearly three times longer than DOE's 30-day target. According to DOE and State officials, State's concurrence times depend on, among other things, the responsiveness of the importing country in providing assurances of

¹⁸MOX fuel is a mix of plutonium and uranium oxides.

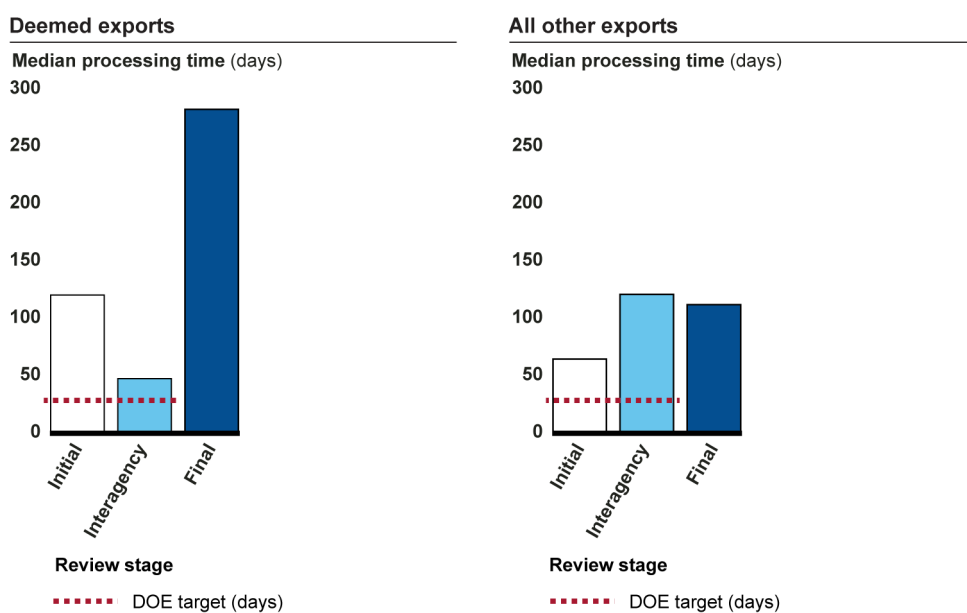
peaceful use and no re-export without U.S. government consent.¹⁹ For example, NNSA sent an application package for interagency review in April 2009 asking for responses within 30 days for the export of a computer program to a Chinese university for teaching and research purposes. State concurred in January 2011, about 2 weeks after receiving the foreign government assurance and almost 2 years after receiving the letter from NNSA. Agency officials attributed the 645-day interagency review period to delays in obtaining assurances from the Chinese government.

State officials, who obtain assurances through embassy staff, told us they have not established a time frame for the embassies to respond, but they noted that it is rare for embassy staff not to follow up on an assurance request expeditiously. Embassy staff, who receive instructions and background documents from State headquarters, often work to make sure that the facts listed in the request for assurances are correct and that the staff have current information for points of contact for the importer, which is a key step in the assurance process. State officials recognized the need to streamline the process for obtaining assurances in countries with growing nuclear markets, such as China and the UAE. Of the 89 applications DOE approved from 2008 through 2013, 23 were for exports to the UAE—more than any other country—largely for U.S. persons to provide expertise to the UAE’s Emirates Nuclear Energy Corporation and nuclear regulatory body. In 2010, State developed generic assurances for Part 810 authorizations to the UAE, based on an agreed-upon template, so that the language would not need separate negotiation for each application. These generic assurances confirm that the transferred technology will be used exclusively for civil nuclear power activities and not for any nuclear explosive or other military purpose and that the technology will not be retransferred outside the UAE without prior U.S. consent. State officials said they would seek to streamline the assurance process in other countries where needed, based on growth in their nuclear industries, which drives the number of requests for assurances.

¹⁹Foreign government assurances are not required by the regulation or by Section 57(b) of the AEA, but State will not provide its concurrence—which is required—without such assurances because it views them as meeting several important legal and policy objectives. Furthermore, DOE officials have stated that any Secretary of Energy would be unwilling to sign an authorization for which State cannot provide a foreign government’s assurance that the technology would not be retransferred or diverted.

Foreign government assurance times are not a factor in interagency review times in the cases of deemed exports—foreign nationals who access nuclear technology subject to Part 810 in the United States—because, in these cases, DOE requires U.S. employers of the foreign nationals to obtain written nonproliferation assurances from the employees rather than from the foreign government. However, the median interagency review time for such cases—46 days—still exceeded DOE’s target of 30 days. Notably, the longest interagency review of 810 days was for a deemed export.²⁰ The 46-day median interagency review time for deemed export applications was shorter than that for other export applications—126 days. See figure 3 for interagency review times for deemed and all other exports.

Figure 3: Median Processing Time per Stage for Deemed and Other Exports



Source: GAO analysis of National Nuclear Security Administration data. | GAO-15-124

²⁰This 810-day interagency review period was the longest, although the data that NNSA provided and that we used as the basis of our aggregated analysis included an interagency review period of 840 days (the application to export fuel specifications to Russia discussed below). Because the 840 days include the abeyance period that resulted from U.S. policy in response to Russia’s actions in Georgia, we are considering the 810-day interagency review period for this application the longest.

In some cases, foreign policy considerations affect interagency review times. For example, a U.S. government hold on civil nuclear cooperation with Russia following its 2008 military actions in Georgia accounted for a large part of the 840-day interagency review for an application to export nuclear fuel specifications to Russia. The application, submitted in January 2008, had reached the final review stage in August 2008, when NNSA held it in abeyance because of Russia's actions.²¹ Following the signing of the New START Treaty in April 2010 and resubmission of the U.S.-Russia nuclear cooperation agreement to Congress in May 2010,²² nuclear cooperation with Russia resumed, and NNSA requested that interagency reviewers resubmit their views on the application from 2008 as soon as possible and emphasized the need for promptness.

Interagency review times vary among countries and within the same country. For example, among the three countries with the most Part 810 applications (excluding deemed exports)—UAE, China, and Russia—interagency review times for exports to the UAE ranged from 27 to 344 days; review times for exports to China ranged from 46 days to 749 days; and review times for exports to Russia ranged from 35 to 840 days.

Final Review Was the Longest Stage

Our analysis found that the final review stage, for which DOE has not established comprehensive targets, had the longest median processing times—125 days—with seven applications taking more than a year for final review and approval. In the final stage, NNSA's and DOE's Offices of General Counsel and DOE's Office of Nuclear Energy review the applications, and NNSA prepares a package of materials for the Secretary's determination. According to DOE's procedures, the Secretary is to be provided with a recommendation no later than 30 days following receipt of the interagency concurrence or views (or 60 days in the event

²¹According to the dates NNSA provided, which we used as the basis of our aggregated data analysis, the interagency review accounted for 840 of the 972 days to process this application. However, those 840 days include the first final review in August 2008 (before the application was held in abeyance) and the entire abeyance period, rather than a discrete interagency review period.

²²The formal titles of these agreements are the Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction and Limitation of Strategic Offensive Arms and the Agreement Between the Government of the United States of America and the Government of the Russian Federation for Cooperation in the Field of Peaceful Uses of Nuclear Energy, respectively.

of interagency disagreements).²³ The Secretary of Energy reviews the package to determine whether the activities covered by the Part 810 application will not be inimical to the interest of the United States. Under the AEA, the Secretary may not delegate the determination.²⁴

We found variability in final-stage processing times across countries. For example, for the three countries with the most Part 810 applications (excluding deemed exports)—UAE, China, and Russia—median completion times for final review ranged from 100 days for the UAE to 127 days for China. Final review times for applications for exports to the same country also varied. For example, the shortest final review time for an export to Russia was 35 days and the longest was 194 days; final review times for exports to the UAE ranged from 31 days to 197 days (excluding deemed exports). The longest final review took 921 days, for a deemed export.

A variety of factors contributed to the duration of final review. For an application to transfer controlled technology to Indian nationals working at a U.S. nuclear facility, DOE's Office of General Counsel's concerns about the application package contributed to DOE's final review times of 241 days. According to NNSA officials, this application was 1 of 10 delayed for this reason. Once DOE General Counsel completed its revisions, NNSA sent a memorandum to the Secretary recommending approval of the application, which the Secretary granted within 2 weeks.

In the final review stage, conditions that agencies imposed as part of their concurrence may also affect review times. In one case, DOD placed restrictions on foreign nationals' access to information and facilities as a condition of its concurrence, in August 2010. Pending reconsideration of these conditions, NNSA held this application in abeyance for 10 months, starting in December 2010,²⁵ contributing to a final review stage of 634 days, out of a total processing time of 824 days for the application. The following October, DOD concurred with the application without conditions

²³Amendment to Procedures Established Pursuant to the Nuclear Nonproliferation Act of 1978, 49 Fed. Reg. 20,780 (May 16, 1984).

²⁴42 U.S.C. §§ 2077(b), 2201(n) (2012).

²⁵According to our analysis of NNSA data, NNSA attributed the number of days it held this application in abeyance to the final review stage. The final review stage was 634 days and the interagency stage was 30 days.

after reviewing the background of the foreign nationals and the DOE staff analysis that determined that transfer of the technology would be appropriate and would not pose a risk to the facility where they would be employed.

NNSA has a 30-day target (60 days in the case of interagency disagreement) within the final review stage for providing a recommendation to the Secretary, but does not track the dates that it provides these recommendations. For the 10 applications for which we could determine the date that NNSA provided a recommendation to the Secretary, DOE exceeded the 30-day target for 9 applications. Of these, 2 were held in abeyance as described above.

Table 2 provides a comparison of processing times for each stage in the process and shows shortest and longest review at each stage.

Table 2: Comparison of Processing Times for Part 810 Process

	Initial review stage	Interagency review stage	Final review stage
Target review time	30 days	30 days	None
Median review time	71 days	105 days	125 days
Longest review	1,035 days	810 days	921 days
Shortest review	0 days ^a	12 days	14 days
Reviews exceeding 30 days	80 of 89	85 of 89	86 of 89

Source: GAO analysis of NNSA data | GAO-15-124

^aThe 0-day initial review was for an amended application whose initial review was completed the same date the amended application was submitted.

DOE’s targets are not comprehensive, as DOE has not established targets for the entire third stage of the Part 810 process, or for overall processing time. By comparison, NRC has established targets—which are part of its performance metrics—for processing export licenses. We have identified measurable, numerical targets as key attributes of

successful performance measures.²⁶ Furthermore, the rate at which DOE has missed its targets calls into question whether these targets are realistic and achievable. According to a 2007 executive order on improving government program performance,²⁷ program goals should be sufficiently aggressive but realistic in light of authority and resources assigned. Without measurable and realistic targets, DOE cannot determine whether its Part 810 process is meeting its goal of efficient regulation, which includes timeliness.

Realistic targets could also further DOE's goal of efficient regulation—another aspect of which is predictability—by giving exporters a sense of how long the application process may take. According to some nuclear exporters, the lengthy and unpredictable specific authorization process affects the competitiveness and hiring practices of their companies and universities. One company, in its comments on DOE's proposed changes to Part 810, noted that the Part 810 process is unpredictable, and that predictability is important for business planning. An industry organization representative we spoke to also emphasized the importance of predictability, stating that nuclear companies understand that nuclear matters may take a long time but that it is important to know how long things may take.

DOE and Representatives of U.S. Nuclear Exporters Stated That the Lengthy Part 810 Process Can Impose Business Risks

DOE, in its preamble to the proposed changes to Part 810, acknowledged nuclear exporters' concerns that the time frame for processing specific authorizations can impose business risks for companies. In comments on DOE's proposed changes to Part 810, the Nuclear Energy Institute (NEI), an industry group that represents hundreds of nuclear companies,²⁸ wrote in November 2013 that the specific authorization process was a cause of delay and uncertainty, and a distinct disadvantage, for U.S. exporters. Representatives of one U.S. nuclear exporter told us that Chinese clients

²⁶GAO, *National Laboratories: DOE Needs to Improve Oversight of Work Performed for Non-DOE Entities*, [GAO-14-78](#) (Washington, D.C.: Oct. 25, 2013); *Environmental Justice: EPA Needs to Take Additional Actions to Help Ensure Effective Implementation*, [GAO-12-77](#) (Washington, D.C.: Oct. 6, 2011); and *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002).

²⁷Exec. Order No. 13,450, 72 Fed. Reg. 64, 519 (Nov. 13, 2007).

²⁸NEI's mission includes providing a unified industry voice on the global importance of nuclear energy and nuclear technology. NEI has over 350 members in 17 countries.

had advised the company against submitting a bid if it would require a specific authorization. According to a representative from a second company, the delays in obtaining a Part 810 authorization inhibit the demonstration and deployment of reactor technology.

According to industry representatives and university officers, Part 810 processing times may also delay or restrict the work or study of foreign nationals in the United States. The Ad-Hoc Utilities Group, another industry group, described the “two equally unsatisfactory alternatives” where (1) companies can either delay hiring foreign nationals or (2) hire them but limit the scope of their work functions until approval of the authorization. For example, a representative from a nuclear company told us that an engineer from India employed at a U.S. nuclear plant was unable to carry out the full scope of duties without a specific authorization, which took 14 months to process. The engineer left the job before the authorization was granted. According to the Ad-Hoc Utilities Group, it is impractical for nuclear power operators to offer a foreign national a job that depends on a specific authorization that can take a year to obtain. The group added that Part 810 hinders utilities from hiring qualified foreign employees for positions that require access to certain nuclear-related materials. As a result, the group wrote, Part 810 can deter the hiring of workers who can safely operate nuclear power plants. In addition, a university officer whose institute offers a nuclear science and engineering program told us that Part 810 imposes a barrier for U.S. universities in recruiting faculty and students that the universities’ foreign competitors do not face.

DOE Has Begun Efforts to Improve the Part 810 Process, Including the Development of an E-Licensing System

DOE has begun efforts to reduce processing times of Part 810 applications. For example, NNSA officials said they plan to build an e-licensing system for the Part 810 process and are finalizing the details regarding the functionality of such a system. The e-licensing system would track applications as they proceed through the authorization process, allowing NNSA to monitor its performance in processing them. NNSA officials said that the e-licensing system would improve predictability by allowing applicants to track their applications throughout the process, including the interagency review. NNSA is also working to become compliant with the International Standards Organization (ISO)-

9001, a quality management standard,²⁹ and the Part 810 process is part of this initiative. NNSA officials told us that the agency has completed the initial interview phase of the ISO certification process, as well as the Lean Six Sigma process,³⁰ but NNSA's time frame for becoming compliant with the ISO-9001 standard is unclear.

Part 810 Is Unclear in Its Scope, and DOE's Inquiry Process Does Not Reasonably Assure Consistent Interpretation

Part 810 is unclear with regard to the activities it covers, among other things. DOE has not provided written guidance to help exporters interpret the scope of the regulation; instead, DOE encourages exporters to inquire with DOE officials for interpretation. DOE cannot reasonably assure that its responses to inquiries are consistent, however, because DOE officials do not routinely document these inquiries or DOE's responses. DOE has taken steps to clarify the regulation and is planning to develop guidance.

Part 810 Is Unclear in Its Scope

Part 810 is unclear with regard to the scope of activities covered and application requirements. For example, key definitions do not make it clear which activities are subject to the regulation. This affects, among other things, how companies conduct marketing activities related to nuclear reactors. Two executive orders identify clarity and consistency among the key principles of federal regulation.³¹ We identified the following three areas regarding the lack of clarity in the regulation:

- **Key definitions in Part 810 are broad.** The regulation's definition of "nuclear reactor" does not distinguish among reactor components

²⁹The ISO 9000 series is a quality management standard developed from the collective experience and knowledge of international experts who participate in the ISO Technical Committee. These standards are based on eight quality management principles, which senior management can use as a framework to guide their organizations toward improved performance. The quality management principles include, among others, customer focus, leadership, continual improvement, and a factual approach to decision making.

³⁰Lean Six Sigma is a data-driven approach based on the idea of eliminating defects and errors that contribute to losses of time, money, opportunities, or business.

³¹Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Sept. 30, 1993); Exec. Order No. 13,563, 76 Fed. Reg. 3,821 (Jan. 18, 2011). As previously noted, Executive Order 13,563 directs that regulations be accessible, consistent, written in plain language, and easy to understand.

based on their relative sensitivities. Representatives of nuclear exporters have said that the regulation’s definition of “nuclear reactor”—as “an apparatus, other than a nuclear explosive device, designed or used to sustain nuclear fission in a self-supporting chain reaction”—is overly broad and could be interpreted to encompass a wide variety of technologies unrelated to the production of special nuclear material. For example, NEI noted in its comments on DOE’s proposed revisions to Part 810 that nuclear reactors, under DOE’s definition, contain thousands of components and systems, only some of which, such as the reactor pressure vessel,³² relate to the production of special nuclear material.³³ The group raised concerns that absent a clearer definition of the technologies covered within the scope of “nuclear reactor,” companies would be forced to seek time-consuming advisory opinions for each item in a nuclear power plant. By contrast, NRC’s export control regulations provide an illustrative list of covered nuclear reactor components,³⁴ and representatives of exporters suggested in their public comments that DOE compile a similar list.

- **Part 810 does not explicitly address sales or marketing.** The regulation does not contain provisions that specifically address marketing and does not clearly delineate the types of marketing information that may require a general or specific authorization. A representative of an association for nuclear companies told us that this has created confusion and that exporters determine whether sales and marketing information is covered based on whether the information is public or proprietary. However, exporters noted in their public comments on DOE’s proposed revisions to Part 810 that marketing activities may entail the transfer of general design or price information that is proprietary but not sufficiently detailed to assist in production of special nuclear material. Nonetheless, such information may fall under the jurisdiction of Part 810 because it is not “public information,” which is generally authorized for transfer (and would be

³²Reactor pressure vessels contain the nuclear fuel in nuclear power plants.

³³These comments were made on DOE’s 2011 proposed revisions to Part 810, but the definition in question is unchanged from its current version.

³⁴NRC provides an “Illustrative List of Nuclear Reactor Equipment under NRC Export Licensing Authority” at 10 C.F.R. Part 110 Appendix A.

exempt under the proposed rule).³⁵ A company representative told us that absent greater clarity, companies are limited in marketing a design and advancing a contract because customers request detailed information—which may be proprietary—to understand how much they would be willing to pay for a product. Representatives of another company told us that it took 2 years to get the specific authorization to disclose the information needed for a marketing activity. While DOE has proposed to adjust its definitions related to public information,³⁶ it has declined to specify what marketing activities may be exempt from authorization—stating that the regulation’s applicability depends on the data transferred rather than the activity—and has instead noted in its Supplemental Notice of Proposed Rulemaking that companies can seek guidance from the department on a case-by-case basis.

- **The regulation does not clearly specify the information and documents that applicants are required to submit.** DOE’s review of Part 810 applications may be prolonged because applicants may not submit all of the information required, which may occur because it is sometimes unclear to applicants what information is required. For example, a university export control officer told us that she applied for a specific authorization for a course being developed on operating a nuclear power plant. More than 5 weeks after submitting the application, a DOE official requested additional information from the applicant—specifically, résumés for the foreign nationals involved. The university officer said that, unlike with other export control regimes, DOE does not provide guidance on the application materials necessary for Part 810, and that she would have included the résumés at the beginning of the process if she had known she needed

³⁵Under the regulation, “public information” includes information generally available in print or electronic media; libraries, archives, and university courses; information that has been presented in open meetings; and certain information that has been filed with the United States Patent and Trademark Office or which has been made available under the Freedom of Information Act. It does not include any technical embellishment, enhancement, explanation or interpretation which in itself is not public information.

³⁶ Specifically, DOE has proposed to replace its definition of “public information” with definitions of “publicly available information” and “publicly available technology.”

to provide them.³⁷ Section 57(b) of the AEA states that, to the extent practicable, an applicant should be advised of all the information required at the beginning of the process. NNSA officials told us that Part 810 contains the application requirements; however, the regulation does not list, for example, résumés among the requirements. The university officer said she submitted the additional information to DOE, and DOE officials informed her 4 weeks later that the activity would not require specific authorization.

DOE Does Not Provide Exporters with Supplemental Guidance and Its Inquiry Process Does Not Reasonably Assure Consistency

DOE does not provide supplemental guidance to help exporters interpret the scope and requirements of Part 810. According to an OMB bulletin, agencies increasingly have relied on guidance documents to inform the public and to provide direction to their staffs as the scope and complexity of regulatory programs have grown.³⁸ According to this bulletin, guidance documents, used properly, can channel the discretion of agency employees, increase efficiency, and enhance fairness by providing the public clear notice of the line between permissible and impermissible conduct, while ensuring equal treatment of similarly situated parties. We found that the other agencies that regulate civilian nuclear exports—NRC and Commerce—do provide written guidance, such as frequently-asked-questions documents, to clarify their interpretation of the regulations to

³⁷Part 810 specifies that each application shall contain (a) the name, address, and citizenship of the applicant, and complete disclosure of all real parties in interest; if the applicant is a corporation or other legal entity, where it is incorporated or organized, the location of its principal office, and the degree of any control or ownership by any foreign person or entity; (b) a complete description of the proposed activity, including its approximate monetary value, the name and location of any facility or project involved, the name and address of the person or legal entity for which the activity is to be performed, and a detailed description of any specific project to which the activity relates; (c) any information the applicant may wish to provide concerning the factors the Secretary must take into account in considering a grant of specific authorization; and (d) designation of any information considered proprietary for which public disclosure would cause substantial harm to the competitive position of the applicant.

³⁸Office of Management and Budget: *Final Bulletin for Agency Good Guidance Practices* (72 Fed. Reg. 3,432 (Jan. 2007) defines “guidance document” as an agency statement of general applicability and future effect, other than a regulatory action (as defined in Executive Order 12866, as further amended), that sets forth a policy on a statutory, regulatory, or technical issue or an interpretation of a statutory or regulatory issue.

exporters.³⁹ Nuclear exporters said that such guidance would be helpful for Part 810. According to one company, a more comprehensive explanation of activities that require specific authorization would afford U.S. businesses the opportunity to adequately plan for international commitments.

DOE's practice is to provide guidance on a case-by-case basis on its interpretations of various Part 810 provisions, but this guidance is provided only to the specific party and is not made public. One company wrote in its public comments on DOE's proposed revisions to Part 810 that, rather than requiring companies to obtain advisory opinions with respect to proposed activities, DOE and the nuclear industry would benefit from DOE's establishment of clearer boundaries for the applicability of Part 810. University export officers also said that DOE declined their request to clarify which types of university activities would require authorization, but encouraged the officers to inquire or apply so that DOE could make a case-by-case determination. These officers raised concerns that the lack of clarity in Part 810, together with the uncertainty about DOE's decisions regarding what activities require authorization, may restrict scientific communication by creating confusion about what universities may share openly.

Without established written guidance, exporters uncertain about the scope of Part 810 must inquire with DOE for interpretation. Under Part 810, potential applicants may request advice on, among other things, whether a proposed activity falls within the scope of the regulations or requires specific authorization. According to DOE's Part 810 procedures, DOE receives numerous inquiries from U.S. persons and firms regarding activities that may fall under the scope of Part 810 regulations. NNSA officials told us they receive approximately two inquiries in the form of letters and more than 10 inquiries by phone each week. According to DOE's Part 810 procedures, most of these inquiries are requests for interpretation of the regulation or requests for review of proposed financial ventures with foreign entities. These inquiries require the input of a wide range of expertise from various sources inside DOE and elsewhere that

³⁹NRC provides an "Illustrative List of Nuclear Reactor Equipment under NRC Export Licensing Authority" at 10 C.F.R. Part 110 Appendix A. Commerce maintains the Commerce Control List, which describes the characteristics and capabilities of the dual-use items and certain military items that may require export licenses at 15 C.F.R. Part 774 Supplement 1, and the agency also provides an online list of frequently asked questions.

are consolidated into informal written or oral guidance or for formal correspondence. DOE's responses to these inquiries are significant, because, as DOE acknowledges, the specific-authorization process can be protracted, and its approval time frames can impose business risks for U.S. companies.

Several representatives of nuclear exporters told us that DOE responded promptly to inquiries, but that the need to consult DOE to clarify the scope and applicability of the regulation contributed to a process that was too dependent on individual interpretation. For example, one company representative told us that there was no way of knowing whether other companies were getting the same response—with regard to what type of authorization would be needed—for the same set of circumstances. A university export officer said that a definition provided by DOE in the course of an inquiry appeared to be “made up on the spot.” Another company representative suggested that a potential applicant could get a different answer depending on which official at DOE takes the call, based on an individual interpretation with no basis in the regulation. This representative said that DOE's inquiry system provides companies with an incentive to proceed with the activity in question without consulting DOE. Specifically, the representative noted that an inquiry could lead to a response that the transaction could not proceed without waiting for an authorization. If the company proceeds without inquiring, however, and DOE later determines that the transaction required authorization, this representative believes that the company would be able to defend itself against any enforcement action because DOE would not be able to point to the specific regulatory language on which it based its determination.

DOE officials do not consistently document inquiries or their responses, and cannot analyze them for consistency or to identify parts of the regulation that may need clarification. Part 810 does not require exporters to submit inquiries for interpretation of the scope of the regulation, or for

DOE to respond to them, in writing or electronically.⁴⁰ However, DOE's internal procedures state that DOE is to maintain a database that includes a listing of and files for all inquiries, and other export-control agencies such as State and Commerce do require written or electronic submissions and responses for inquiries regarding jurisdiction.⁴¹ DOE officials said that they do not document all inquiries or responses because some inquiries are vague, and DOE's responses are predecisional. However, as noted earlier, DOE's responses to these inquiries are significant because of the time frames of the specific authorization process; they determine whether or not an activity is subject to the regulation and whether an exporter has to engage in the time-consuming authorization process. Documenting all inquiries and responses would provide DOE with the information needed to reasonably assure that the agency's responses are consistent under similar circumstances, and to identify aspects of the regulation that may need clarification. Under the federal standards for internal control, agencies are to accurately record and appropriately document transactions.⁴² Documentation of transactions is also important because gaps can develop in an organization's institutional knowledge and leadership as experienced employees leave.⁴³ Some nuclear exporters expressed concerns in this regard, stating that, while the staff that

⁴⁰Specifically, 10 C.F.R. § 810.5 provides that, "A person may request the advice of the Director, Nuclear Transfer and Supplier Policy Division (NN-43), on whether a proposed activity falls outside the scope of this part, is generally authorized under § 810.7, or requires specific authorization under § 810.8; however, unless authorized by the Secretary of Energy, in writing, no interpretation of the regulations in this part other than a written interpretation by the General Counsel is binding upon the Department. When advice is requested from the Director, Nuclear Transfer and Supplier Policy Division, or a binding, written determination is requested from the General Counsel, a response normally will be made within 30 days and, if this is not feasible, an interim response will explain the delay." However, there is no requirement that inquiries be handled formally.

⁴¹If companies have determined that their items are Commerce-controlled but are uncertain of export licensing requirements, they may request a classification from Commerce through the commodity classification process. Commerce can refer classification requests to State and DOD to confirm that the items are Commerce-controlled. If companies are unsure of which department has jurisdiction over their items, they can request a determination through the commodity jurisdiction process from State, which consults with Commerce and Defense. For more information, please see GAO, *Export Controls: Processes for Determining Proper Control of Defense-Related Items Need Improvement*, [GAO-02-996](#), (Washington, D.C.: Sept. 20, 2002).

⁴²[GAO/AIMD-00-21.3.1](#).

⁴³GAO, *Federal Workforce: Recent Trends in Federal Civilian Employment and Compensation*, [GAO-14-215](#) (Washington, D.C.: Jan. 29, 2014).

currently implements Part 810 is competent and helpful, the system should not rely on individuals, and that a change of staff could make the process more difficult.

DOE Has Taken Steps to Clarify the Regulation

DOE has taken steps to clarify Part 810, recognizing in its Supplemental Notice of Proposed Rulemaking that the scope of activities regulated under Part 810 could be clearer.⁴⁴ For example, DOE is proposing to define some key terms, such as “technical assistance,” and to refine its definitions of other terms, for example by replacing its prior definition of “public information” with definitions of “publicly available information” and “publicly available technology,” so that potential applicants would have a clearer description of activities and technology subject to Part 810. However, DOE’s proposed rule neither clarifies the scope of the regulation by refining the definitions of other broad terms, such as “nuclear reactor,”⁴⁵ or by providing an illustrative list of reactor components, nor more clearly delineates sales and marketing activities subject to Part 810. DOE officials have said that they plan to develop guidance once the proposed changes to the regulation are finalized, but the proposed changes are an ongoing effort whose time frame and eventual impact are unclear.

DOE Has Taken Limited Actions to Enforce Its Nuclear Export Controls

DOE has taken limited actions to enforce its export controls for nuclear technology, assistance, and services, even though DOE must enforce Part 810 to achieve one of its goals for the regulation—effective threat reduction by mitigating the risk of proliferation. One way that DOE seeks to mitigate this risk is through conditions included in Part 810 specific authorizations; most authorizations are subject to common sets of conditions. DOE’s primary method for monitoring compliance with the conditions is for NNSA officials to read required reports from exporters and in some cases to conduct a more in-depth analysis of the reports. However, NNSA officials report that they typically conduct an in-depth analysis for compliance with the authorizations on less than 10 percent of

⁴⁴Assistance to Foreign Atomic Energy Activities. 78 Fed. Reg. 46,829 (Aug. 2, 2013).

⁴⁵The definition of “nuclear reactor” in DOE’s proposed rule is the same as that in the current rule. DOE’s proposed rule does not change the definition or clarify it with an illustrative list. The final rule, which has not yet been issued, may differ from the proposed rule, and DOE has not communicated its content to us.

the reports, and they do not have risk-based procedures for prioritizing which reports to analyze. DOE does not provide guidance for companies to self-identify and self-report violations. DOE has not determined whether it has the authority to impose civil penalties for violations of Part 810 and has not referred any potential violations to the Department of Justice (DOJ) for investigation or criminal prosecution within the last 6 years, the period covered by our review.

Most Part 810 Authorizations Are Subject to Common Sets of Conditions

On the basis of our analysis of all 89 specific authorizations approved between 2008 and 2013, we identified two common sets of conditions—one for deemed exports, another for all other exports—that DOE imposes on specific authorizations. These conditions are enumerated in “Secretarial Determinations”—the authorization letters signed by the Secretary that state a determination that the proposed export is not inimical to the interest of the United States, as long as the conditions are met. The conditions on each authorization reflect the actions that DOE, State, Commerce, NRC, and DOD judge sufficient to mitigate the risk of proliferation in a given circumstance and which result in the export benefiting U.S. interests.

The common set of conditions on specific authorizations for deemed exports—in this case, foreign nationals who access nuclear technology in the United States—includes five conditions that appear in nearly all of the 18 authorizations for such exports (see table 3). These conditions require the company or other applicant seeking the authorization to (1) ensure that the foreign national maintains a current passport and work visa, (2) notify DOE promptly upon termination or change in immigration status for the foreign national, (3) submit to DOE for prior approval changes in the foreign national’s work duties, (4) report annually to DOE on activities pursued by each foreign national covered by the authorization, and (5) obtain a signed nonproliferation or nondisclosure statement from the foreign national. In addition, there are other conditions that have been imposed less frequently; for example, DOE imposed conditions on some specific authorizations involving transfers of certain technologies related to reactor operations to certain foreign nationals in the United States. These conditions state that these individuals cannot have access to

sensitive nuclear technology⁴⁶ or software programming language (see app. II).

Table 3: Common Conditions for Specific Part 810 Authorizations for Deemed Exports, 2008-2013

Condition	Responsibility	Frequency
Ensure that the foreign national maintains a current passport and visa	U.S. company	16 of 18 ^a
Notify DOE promptly upon termination or change in immigration status for the foreign national	U.S. company	17 of 18
Submit to DOE for prior approval changes in the foreign national's work duties	U.S. company	17 of 18
Report annually to DOE on activities pursued by each foreign national under the authorization	U.S. company	17 of 18
Obtain from the foreign national a signed nonproliferation or nondisclosure statement	U.S. company, foreign national	17 of 18 ^b

Source: GAO analysis of DOE information. | GAO-15-124

^aTwo authorizations did not contain this condition. In one, the foreign nationals were being employed through a German affiliate. The other authorization was for the transfer of technology to a company in India, as well as Indian nationals in the company's U.S. affiliate. The latter authorization also did not have the next two common conditions shown in the table and required quarterly, rather than annual, reports.

^bOne authorization, for the transfer of mixed oxide fuel fabrication technology to a South African national, did not require a nonproliferation statement or a nondisclosure statement.

The common set of conditions for specific authorizations (other than deemed exports) includes four conditions that appear in nearly all of the 72 authorizations for these types of exports (see table 4). The first two conditions—a requirement to use the technology for peaceful (nonmilitary and nonnuclear weapons) purposes and a requirement to obtain permission before re-exporting the technology to a country other than the United States—are the responsibility of the importer and the importing country's government to implement, and they are known collectively as "foreign government assurances." The other two conditions are the responsibility of the exporter. These include requirements to (1) report to DOE on the activities conducted under the authorization on a quarterly, semiannual, or annual basis and (2) submit for prior DOE approval the names of any companies or individuals, beyond those listed in the original application, to which the exporter proposes transferring the technology. There are other conditions that have been imposed less frequently; for

⁴⁶Sensitive nuclear technology is any information that is not available to the public and is important to the design, construction, fabrication, operation, or maintenance of a uranium enrichment or nuclear fuel reprocessing facility or a facility for the production of heavy water.

example, about 20 percent of the authorizations (13 of the 72) contain a condition that requires the importer and the importing country to take all measures necessary to maintain adequate protection of the technology and, in some cases, also to ensure adequate physical protection of any items derived from it (see app. II).

Table 4: Common Conditions for Specific Part 810 Authorizations Other Than for Deemed Exports, 2008-2013

Condition	Responsibility	Frequency
Peaceful (nonmilitary, nonexplosive) use	Importing country, importing company or other entity	70 of 72 ^a
Re-export permission required ^b	Importing country, importing company or other entity	70 of 72 ^c
Submit for prior DOE/NNSA approval names of additional companies or individuals to which the exporter proposes transferring the technology	Exporter (U.S. company or other entity)	70 of 72 ^d
Report to DOE/NNSA on activities conducted under the authorization	Exporter (U.S. company or other entity)	70 of 72 ^e

Source: GAO analysis of DOE information. | GAO-15-124

^aTwo authorizations for exports to China did not explicitly contain conditions on peaceful use. However, the authorizations stated that the transferred technology would be subject to the Agreement for Cooperation between the Government of the United States of America and the Government of the People's Republic of China Concerning Peaceful Uses of Nuclear Energy of July 23, 1985. This agreement provides that transferred technology may not be used for any nuclear explosive device, for research specifically on or development of any nuclear explosive device, or for any military purpose.

^bSome authorizations state that prior written permission is required for re-exports, while in other cases, they do not state that written permission be "prior." In one authorization, the condition required "prior coordination," without defining what coordination would entail.

^cTwo authorizations for exports to China did not explicitly contain conditions on re-export. However, the authorizations stated that the transferred technology would be subject to the Agreement for Cooperation between the Government of the United States of America and the Government of the People's Republic of China Concerning Peaceful Uses of Nuclear Energy of July 23, 1985. This agreement provides that transferred technology may not be retransferred outside the parties' boundaries unless the parties agree.

^dTwo authorizations for exports to the UAE did not contain this condition.

^eTwo authorizations, one for the export of sensitive nuclear technology to Germany and the other for computer codes to China, did not contain any reporting requirements.

DOE Does Not Use a Risk-Based Procedure to Determine Which Reports to Analyze for Compliance

NNSA officials, who implement Part 810, draw on various information sources to monitor compliance with the conditions on authorizations. NNSA officials said their primary source of information is the reports submitted by exporters. These reports are required by the conditions on the specific authorizations, as described above, as well as by Part 810, which contains reporting requirements for all specifically authorized

exports and certain generally authorized exports.⁴⁷ Exporters who are required to report on generally authorized activities must do so no more than 30 days after they begin.⁴⁸ According to an NNSA official, some generally authorized activities would trigger frequent reports, so NNSA negotiates a filing frequency for the exporters to report all of their generally authorized activities on a consolidated basis instead of requiring reports for each activity. For specific authorizations, exporters must also report no more than 30 days after they initiate activities,⁴⁹ and, depending on the conditions contained in their authorization, they are also required to submit ongoing reports that detail their activities conducted under the authorization on a quarterly, semiannual, or annual basis.

NNSA officials stated that they read and categorize each report as it is received. If they decide that a particular report merits further attention, they conduct follow-up analysis, which includes checking that the activities and individuals listed are consistent with the application and the authorization. However, NNSA officials stated that they currently do not conduct such an analysis for every report to determine compliance or to identify trends; the officials estimate that they currently conduct follow-up analysis on less than 10 percent of reports. They also stated that they do not have procedures for determining which reports merit in-depth analysis and that their current practice is to decide on a case-by-case basis according to the type of technology and parties involved. As a result, NNSA may be missing important information that could lead to identification of violations and provide a fuller understanding of the degree of compliance with Part 810.

We requested information on the number of reports NNSA received from 2008-2013 for generally and specifically authorized exports. For generally authorized exports, NNSA officials stated that they had a gap in their data

⁴⁷For some categories of generally authorized exports, such as furnishing public information as defined in the regulation, there are no reporting requirements.

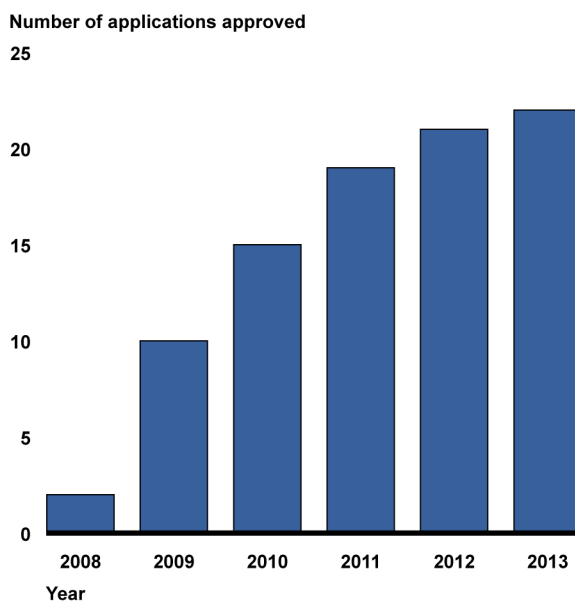
⁴⁸Part 810 requires reports submitted for general authorizations to include the following elements: (1) the name, address, and citizenship of the person submitting the report; (2) the name, address, and citizenship of the person or entity for which the activity is being performed; and (3) a description of the activity, the date it began, its location, status, and anticipated date of completion.

⁴⁹Part 810 requires reports submitted for specific authorizations to include the same elements we described for generally authorized exports, with the addition of a copy of DOE's letter authorizing the activity.

that prevented them from providing complete information during these 6 years, but according to their data, they received at least 50 reports per year from 2009-2013. For specifically authorized exports, NNSA officials stated that providing information on the number of reports received would be challenging.

NNSA officials said that their report analysis process is not as systematic as they would like, but noted that they do not have the staff to analyze the reports more thoroughly. According to NNSA officials, they employ two people who work full-time on Part 810 authorizations, as well as six people who work on the authorizations as part of their broader responsibilities. Officials at the national laboratories also assist with reviewing reports, based on the end user and the type of technology being transferred, according to NNSA officials. Staffing levels in the NNSA office that processes these authorizations and reviews the reports have remained level over the last 6 years, but the number of specific authorizations granted each year has increased (see fig. 4). An NNSA official noted that the office is looking into changes that could be made to the report analysis process to facilitate monitoring for compliance, such as linking the reports to the authorizations in the proposed e-licensing system.

Figure 4: Specific Authorizations by Year, 2008-2013



Source: GAO analysis of National Nuclear Security Administration data. | GAO-15-124

NNSA officials said they have other sources of information for monitoring compliance with Part 810 authorizations, including the national laboratories, trade publications, and newsletters from a variety of sources, as well as the companies themselves (NNSA periodically asks companies for briefings). They stated that they also receive support from the intelligence community, including DOE's Office of Intelligence and Counterintelligence. In addition, according to a State official, U.S. embassies play a role in monitoring the extent to which the importing country and company or other entity, as well as the exporter, are complying with the conditions associated with Part 810 authorizations.

DOE Has Not Determined Its Authority to Impose Civil Penalties and Does Not Provide Guidance for Companies to Self-Identify and Self-Report Possible Violations

DOE has not determined whether it has legal authority to impose civil penalties for violations of Part 810 and does not provide guidance for companies to self-identify and self-report possible violations. Part 810 contains a statement about the actions that DOE can take to prevent violations under the authority of the AEA (temporary injunctions and restraining orders) and a description of penalties for criminal violations. However, Part 810 does not indicate that DOE can impose civil penalties for violations, and DOE officials told us that the issue of whether the department has the authority to impose civil penalties was “unsettled.”⁵⁰ We have previously found that civil penalties are an important element of regulatory enforcement, allowing agencies to punish violators appropriately and to serve as a deterrent to future violations.⁵¹ Without a clear position on whether DOE has authority to impose such penalties for violations of Part 810, DOE may not have access to a tool for enforcing its export controls.

Furthermore, DOE does not provide any external guidance to exporters on enforcement of Part 810, such as a voluntary disclosure policy, internal compliance guidelines, or an enforcement manual, in the

⁵⁰Officials from DOE's Office of General Counsel initially told us that the AEA provision for civil penalties regarding violations of Section 57—which authorize the imposition of a civil penalty of no more than \$100,000 for each violation—applied to violations of Section 57(b) and thus Part 810. However, DOE officials later told us that they were uncertain whether the Department had authority under the AEA to impose civil penalties, because the matter had not come up prior to their receipt of portions of our draft report. DOE officials also said that they were uncertain of when they may determine whether the Department has this authority.

⁵¹GAO, *Civil Penalties: Agencies Unable to Fully Adjust Penalties for Inflation Under Current Law*, [GAO-03-409](#) (Washington, D.C.: Mar. 14, 2003).

regulation, or, according to DOE officials, elsewhere. In contrast to DOE, other government agencies that regulate nuclear or nuclear-related exports have established procedures, as well as policies and guidelines on enforcement of their export controls. As discussed below, NRC, State, and Commerce provide a variety of resources for companies to understand the enforcement policies for their respective export control regimes and to provide incentives for companies to recognize and address violations. These resources are publicly available on the agencies' websites. In addition, information on civil and criminal enforcement is stated in the regulations governing their respective export control regimes.

- **NRC has an enforcement policy and enforcement manual.** NRC has a publicly available enforcement policy document that lays out the general principles governing its enforcement efforts and information on the process it uses to deal with violations. NRC also has an enforcement manual that contains specific processes and guidance for implementing the enforcement policy. The stated goals of NRC's enforcement policy are to (1) deter noncompliance by emphasizing the importance of compliance with regulations and other NRC requirements, and (2) encourage prompt identification and prompt comprehensive correction of violations. The policy clearly describes the factors that NRC takes into consideration when assessing the significance of the violation and describes how prompt self-identification of violations can decrease consequences for violators. In addition, NRC publishes on its website Notices of Violation, which can serve as examples of how violations are assessed and fines are determined. Its website also contains the Part 110 regulations, which describe, among other things, the civil penalties and the procedures through which they would be applied, in the case of violations.
- **State's website contains compliance resources, including guidelines for comprehensive compliance programs.** State's Directorate of Defense Trade Controls (DDTC) maintains a website with a variety of compliance-related resources and documents for exporters, including a list of significant export control enforcement cases. The site contains the International Traffic in Arms Regulations (ITAR), of which Parts 127 (Violations and Penalties) and 128 (Administrative Procedures) lay out State's enforcement policies, including its voluntary disclosure policy, the aim of which is to strongly

encourage self-disclosure of violations by noting that such disclosures may be considered as mitigating factors in determining penalties.⁵²

The site also provides guidelines that exporters can use to create comprehensive operational compliance programs. The guidelines do not promote a certain type of program; instead, they list the important elements of effective programs, including organizational structure; corporate commitment and policy; identification, receipt and tracking of controlled items and technical data; re-exports; and internal monitoring, and training, among other elements.

- **Commerce’s website provides a variety of compliance and enforcement information.** Commerce’s Bureau of Industry and Security (BIS) has an Office of Export Enforcement (OEE) that works with companies to prevent export control violations and is responsible for enforcement actions in response to such violations. OEE’s website contains, among other things, information on compliance, penalties, and voluntary self-disclosures, including voluntary self-disclosure cases. The BIS website contains the Export Administration Regulations, which govern the export of dual-use items and certain military items. Part 764, “Enforcement and Protective Measures,” provides readers with information on enforcement, including voluntary self-disclosure and civil penalties, and Part 766, “Administrative Enforcement Proceedings,” describes the administrative enforcement process and includes guidance on how BIS makes penalty determinations.

While DOE’s export controls and their regulatory basis may differ in some aspects from those administered by NRC, State, and Commerce, these other agencies provide information to companies and individuals to help them understand how to comply with their rules and the consequences of violating those rules. Several exporters told us that other agencies provide guidance that is more comprehensive. By not establishing policies or creating guidance that encourages companies to create strong

⁵² The International Traffic in Arms Regulations (ITAR) provide that the Department of State may impose civil penalties for violations of the ITAR. As discussed above, DOE has not determined whether it has the legal authority to impose civil penalties for violations of Part 810. In 2013, the ITAR was revised so as not to apply to certain nuclear-related items to the extent that they are under the export control of the Department of Energy or the Nuclear Regulatory Commission. To the extent that those items were previously controlled by the Department of State and are now controlled by the Department of Energy, they were moved from a system with clear administrative enforcement authority to one without such clear authority.

compliance programs and self-identify and self-report violations, DOE is missing an opportunity to leverage exporters' potential to play a greater role in monitoring their own compliance.

DOE and DOJ Have Not Taken Any Formal Actions to Enforce Part 810

Neither DOE nor DOJ have taken formal actions—such as revoking an authorization or prosecuting an exporter—to enforce Part 810 within the last 6 years, even though there have been violations of Part 810 within this period. Between 2008 and 2013, NNSA received at least 11 notices of voluntary disclosures of violations of the Part 810 regulations, mostly related to deemed exports to India or China—but according to an NNSA official, any time NNSA knows of a violation of the Part 810 regulations, NNSA tries to deal with it internally, generally meeting with the company to discuss the issue. This official reported that NNSA has not identified any willful violations of Part 810,⁵³ and consequently, NNSA has not referred any potential criminal violations to the DOJ for investigation or prosecution. According to DOE and NNSA officials, NNSA has never taken any formal action, such as revoking an authorization, against companies that have violated Part 810. DOE's internal procedures for administering Part 810 contain no information on DOE enforcement of the regulation. DOJ, which is charged with investigating and prosecuting suspected criminal violations, reports that of the cases charged under the AEA in the last 6 years, it is not aware of any related to Part 810 violations.

Conclusions

The renewed interest in nuclear power worldwide could provide increased opportunities for U.S. companies. The highly competitive global nuclear market underscores the importance of an efficient authorization process for U.S. nuclear technology exports. DOE has stated that its goals for the Part 810 process are efficient regulation (defined by an efficient, timely, transparent, and predictable process); effective nuclear trade support; and effective threat reduction by better addressing proliferation challenges. DOE and NNSA have taken steps toward a more efficient regulatory process, including developing an e-licensing system. However, DOE and NNSA's current implementation of Part 810 raises questions as to whether the agencies are administering the process in accordance with

⁵³An example of a non-willful violation, according to DOE officials, is an employee inadvertently leaving export-controlled material in open places where non-U.S. persons may access them.

DOE's goals and with key principles of federal regulation, which include clarity and consistency.

DOE rarely meets its existing target time frames for processing Part 810 applications, which calls into question whether these targets are realistic and achievable in light of its resources and authorities. Furthermore, DOE has not established target time frames for obtaining the Secretary's determination in the third stage of the process, or for the overall Part 810 authorization process. Without realistic and achievable targets for the entire Part 810 process, DOE cannot provide U.S. nuclear exporters with a timely and predictable regulatory process, which could impair their competitiveness.

DOE has taken steps to clarify the scope of Part 810, but DOE officials plan to continue to rely on a case-by-case inquiry process. DOE currently does not document all inquiries, contrary to agency procedures. Without a documented inquiry process, DOE does not have the information it needs to provide reasonable assurance that its responses are consistent, and DOE officials are not documenting information that could identify parts of the regulation that may need clarification.

DOE must enforce Part 810 to achieve one of its goals for the regulation—effective threat reduction by mitigating the risk of proliferation. However, DOE may be missing opportunities to enforce its nuclear export controls. Civil penalties are an important element of regulatory enforcement, but DOE has not determined whether it has the legal authority to impose civil penalties for violations of Part 810. In addition, NNSA does not conduct in-depth analysis on all reports from exporters on activities authorized under Part 810 and does not have a risk-based procedure for prioritizing which reports to analyze. As a result, NNSA may be missing important information that could lead to identification of violations and allow the agency to take enforcement actions when warranted. Moreover, unlike other agencies that administer nuclear-related export controls, DOE does not have policies or guidance for exporters about self-identifying, self-reporting, and correcting possible violations. Consequently, DOE is missing an opportunity to encourage exporters to recognize and address violations.

Recommendations for Executive Action

We are making six recommendations to improve the administration of 10 C.F.R. Part 810.

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- To better align the Part 810 process with its stated goal of efficient regulation, we recommend that the Secretary of Energy, working with the Administrator of the National Nuclear Security Administration, take the following two actions:
 - Review existing targets for processing Part 810 applications and determine the extent to which they align with DOE’s resources and authorities. Based on the results of this review, establish realistic and achievable targets for each stage of the Part 810 process, including the third stage, as well as the overall process.
 - As DOE moves forward with the e-licensing system, integrate these targets into the system to monitor agency performance against them to ensure that the targets remain realistic and achievable and that they improve predictability for exporters.
 - To promote clarity and consistency in administering Part 810, we recommend that the Administrator of the National Nuclear Security Administration ensure that all inquiries about the scope of Part 810, together with NNSA’s responses to these inquiries, are documented, in accordance with existing DOE procedures.
 - To facilitate enforcement of Part 810 and encourage compliance, we recommend that the Secretary of Energy, working with the Administrator of the National Nuclear Security Administration, take the following three actions:
 - Determine whether DOE has legal authority to impose civil penalties for violations of the regulation and develop procedures accordingly.
 - Develop a risk-based procedure for selecting exporters’ reports on authorized activities for in-depth analysis.
 - Assess the need to establish and articulate export compliance policies that encourage and reward exporters who self-identify, self-report, and correct violations, and provide guidance to exporters on such policies.

Agency Comments and Our Evaluation

We provided a draft of this report to DOE, NRC, State, Commerce, DOD, and DOJ for review and comment. NNSA provided written comments for DOE, which are presented in appendix III. In addition, NNSA, NRC, State, Commerce, and DOJ provided technical comments that we incorporated, as appropriate.

In its written comments, NNSA agreed with all six of our recommendations and noted several actions and initiatives it is planning or undertaking to implement our recommendations. For example, NNSA stated that as part of its ongoing process improvements, the agency is

working to identify gaps, overlaps, and inefficiencies in the Part 810 authorization process and will establish new, achievable targets for each stage of the Part 810 process. Among other things, NNSA also stated that it plans to consult with other regulatory agencies, such as NRC, to determine what risk-based procedures the agency has for analyzing reports on authorized activities and whether they could be modified to work for Part 810 reports. NNSA also stated that it would consult with regulatory agencies such as NRC and Commerce to determine what export compliance policies they have for encouraging and rewarding self-disclosure and whether they could be modified for Part 810 self-reporting.

NNSA also provided general comments on some of our findings. For example, NNSA stated that the draft report frequently draws comparisons between DOE's Part 810 process and other agencies' export control regimes. NNSA stated that, unlike the other regimes, DOE's export authorization process involves other agencies and diplomatic engagements with foreign governments, whose responsiveness the U.S. government cannot control. We note that our analysis considered relevant differences in the export control regimes. As noted above, NNSA concurred with our recommendations and stated that it would consider whether the processes of these agencies could be adapted for Part 810.

NNSA also stated that the ability to devise "creative solutions" for unique or new situations remains an important aspect of the Part 810 authorization process, and that consistent guidance in light of such situations is inapplicable. However, as noted in the report, DOE must reasonably assure that its interpretation of Part 810 is consistent in responding to wide-ranging questions from exporters.

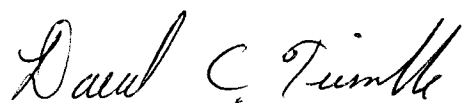
In addition, NNSA stated that the Department clearly took seriously the recommendations from our report, *Nuclear Commerce: Governmentwide Strategy Could Help Increase Commercial Benefits from U.S. Nuclear Cooperation Agreements with Other Countries* (GAO-11-36), as evidenced by the current rulemaking, process improvements, and the creation of an e-810 system. We noted the actions DOE took in response to these recommendations in the current report. However, because the rulemaking and process improvements were ongoing at the time of our audit, we could not evaluate the extent to which these initiatives will address the findings and recommendations in this report. NNSA said that our draft report stated that DOE had not proposed revising its inquiry process, but noted that its initiatives will address the inquiry process, and that the inquiries we referred to are exploratory and informal. We clarified the language in the report to address NNSA's comment. However, as we

say in the report, several exporters whom we interviewed expressed concern about the consistency of the responses DOE was providing to their inquiries. We could not evaluate whether DOE's responses to inquiries were consistent because DOE does not document all inquiries. Without such documentation, DOE cannot reasonably assure that the interpretations offered in response to these inquiries are consistent.

Finally, in its written comments, NNSA stated that it is true that it has not referred any suspected Part 810 violations to the Department of Justice for criminal investigation or revoked any authorizations for cause but that it has not received reports of illicit technology transfers or seen evidence of violations of Part 810 authorization restrictions. We recommend in this report, as a step in strengthening export controls through Part 810, that DOE take a risk-based approach to reviewing reports for in-depth analysis from exporters and assess the need for guidance and incentives to exporters for self-identifying, self-reporting, and correcting possible violations. NNSA agreed with these recommendations.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretary of Energy, the Administrator of the National Nuclear Security Administration, the Secretary of State, the Chairman of the Nuclear Regulatory Commission, the Secretary of Defense, the Secretary of Commerce, and other interested parties. The report also will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff members have any questions about this report, please contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov or Thomas Melito at (202) 512-9601 or melitot@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.



David C. Trimble
Director, Natural Resources and Environment



Thomas Melito
Director, International Affairs and Trade

Appendix I: Scope and Methodology

In this report, we examine (1) Part 810 processing times, compared with the Department of Energy's (DOE) targets, for over the last 6 years; (2) the extent to which Part 810 is clear and DOE can reasonably assure consistent interpretation; and (3) the extent to which DOE enforces Part 810.

To examine DOE's processing times for Part 810 applications over the last 6 years compared with its own targets, we reviewed DOE's 10 C.F.R. Part 810 Assistance to Foreign Atomic Energy Activities Part 810 Program Elements and the National Nuclear Security Administration's (NNSA) procedures for processing, reviewing, and approving specific authorizations¹ to determine DOE's internal targets. We analyzed DOE data on the processing times for the 89 specific authorizations granted from 2008 through 2013.² For each authorization, the analysis included a calculation of the number of days between the date of each application for authorization and the date of the Secretary's determination, which encompasses the entire Part 810 process. We also calculated the number of days between each of the three stages of the process—initial review, interagency review, and final review. We calculated the duration of the internal review stage based on the number of days between the date on the application and the date NNSA forwarded the application to the interagency. This date marked the beginning of the interagency stage, which ended when NNSA received the last interagency concurrence with the application package. The final review stage started from the date of the last interagency concurrence and ended on the date of the Secretary of Energy's determination. To ensure the analysis was as accurate as possible, we reviewed the data, identified irregularities, and contacted NNSA officials to clarify and correct those irregularities. For example, when we noticed an application in which the Department of Commerce's concurrence date preceded the date NNSA submitted the application to the interagency, we notified NNSA officials of this inconsistency, and they provided us with the correct date. Moreover, we interviewed the NNSA officials who collected and recorded the data, about the procedures they follow to ensure the data are accurate, complete, and reliable. On the

¹"Amendment to Procedures Established Pursuant to the Nuclear Nonproliferation Act of 1978." 49 Fed. Reg. 20,780 (May 16, 1984).

²Our analysis excluded one application that DOE approved in 2008, because that application preceded DOE's electronic data collection system on which we based our aggregate data analysis.

basis of our review, we concluded that the data were sufficiently reliable for purposes of analyzing trends in processing times.

To identify factors affecting the processing times for specific authorizations, we selected a nonprobability sample of eight applications that represented a range of processing times. Specifically, for each stage in the Part 810 process as well as for the entire process, we selected (1) one case from among applications with short processing times, defined as processing times in the 25th percentile (that is, processing times shorter than those for 75 percent of all applications), and (2) one case representing long processing times, defined as applications in the 75th percentile (that is, processing times longer than those for 75 percent of all applications). Among applications with long processing times, we considered those with over twice the median processing time. We used the median—rather than the mean—because outliers in the data unduly impact the size of the mean, making it a less valid representation of the typical processing time. From applications with long and short processing times, we selected cases that represented a range of countries and types of exports or assistance, such as computer codes, consulting services, and advanced reactor technologies.

The small number of cases selected precluded us from generalizing the results, but the case study analysis provided examples of factors that may explain the varying processing times. To identify these factors, we reviewed application packets NNSA provided to us, including technical assessments and intra- and inter-agency correspondence. When reviewing case study documents, we noticed that some of the correspondence dates differed from the dates recorded in the spreadsheet.³ Because these discrepancies are small, they do not significantly impact the results of our aggregate data analysis, which measures the duration (i.e., number of days) between each stage of the process and the overall process. The small discrepancies also do not impact the findings of our case study analysis, which focuses on the causes of long and short processing times. We also interviewed agency officials to better understand these factors. For seven of the eight applications in our case study, as well as for the three applications that

³In seven cases, the dates in the aggregate data NNSA provided to GAO for applications processed from 2008-2013, on which we based our aggregate data analysis, differed from the dates on formal and informal correspondence, on which we based our case study analyses.

NNSA provided to us as samples, we were able to determine, based on the last internal concurrence among DOE and NNSA staff, the earliest date that the recommendation could have been provided to the Secretary upon receipt of interagency comments to determine whether the recommendation was provided to the Secretary within 30 days—the target time frame. In one case, the correspondence was not dated, and we could not determine the date of the recommendation to the Secretary. In nine other cases, we were able to determine whether the time elapsed between the receipt of interagency comments and the last internal concurrence among DOE and NNSA staff—which must precede the recommendation to the Secretary—exceeded 30 days.

To examine the impacts of Part 810 processing times on U.S. nuclear exporters, we interviewed representatives of these exporters and reviewed public comments submitted in response to DOE's proposed changes to Part 810,⁴ as well as DOE's response to comments made in response to the Notice of Proposed Rulemaking, as articulated in the preamble to the Supplemental Notice of Proposed Rulemaking. The representatives we interviewed included representatives of companies, as well as representatives of four associations (the Nuclear Energy Institute (NEI), American Nuclear Society (ANS), Nuclear Infrastructure Council (NIC), and Association of University Export Control Officers (AUECO)),⁵ and reviewed the public comments of a fifth (the Ad-Hoc Utilities Group)). The companies were either identified through interviews with association representatives—we requested that they identify nuclear exporters with experience with the Part 810 authorization process for us to interview—or by GAO (for example, at public meetings and other forums on nuclear export issues, or through their public comments). We then interviewed five exporters, including reactor designers and manufacturers, engineering service providers, and fuel companies, and obtained written comments from a nuclear energy technology company. We also selected for interviews, based on recommendations from industry associations and on our reviews of public comments and letters, representatives from a

⁴We reviewed all public comments submitted (on www.regulations.gov) in response to the proposed rule changes. We conducted a double-blind content analysis of the 75 comments submitted to identify those pertinent to the scope of our work. We used the public comments to provide illustrative examples (and to identify additional exporters to interview). We did not analyze the contents of the comments to quantify exporter views on the regulation.

⁵AUECO representatives are university export control officers.

consulting group that exports nuclear services and from a utility company, which is the largest commercial nuclear generator in the United States, and from two law firms. The law firms were selected because of their expertise and experience in U.S. nuclear export controls. To learn more about the relevance of regulation of civilian nuclear technology to nonproliferation more generally, we interviewed five nonproliferation experts.

To examine the extent to which the scope of Part 810 is clear, we consulted and analyzed the Atomic Energy Act, as well as executive orders and Office of Management and Budget bulletins related to government regulation. We also reviewed the Part 810 regulation. We interviewed DOE officials and a variety of entities regulated or potentially regulated under Part 810, as well as various groups representing these entities—as described above—for their views on the clarity of the regulation. We also consulted public comments submitted in response to DOE’s proposed changes to Part 810, as well as DOE’s response to the comments received in response to the Notice of Proposed Rulemaking as articulated in the preamble to the Supplemental Notice of Proposed Rulemaking. To examine the extent to which DOE can reasonably assure that the regulation is consistently interpreted, we consulted DOE’s 10 C.F.R. Part 810 Assistance to Foreign Atomic Energy Activities Part 810 Program Elements and the federal standards for internal control,⁶ and interviewed DOE officials and a variety of entities regulated or potentially regulated under Part 810, as well as various groups representing these entities, as described above.

To examine the extent to which DOE enforces its nuclear export controls, we first determined the activities DOE undertakes to monitor conditions imposed through authorizations by interviewing DOE and NNSA officials. We then conducted an analysis of the conditions imposed through the 89 Part 810 authorizations approved from 2008-2013. The conditions for each authorization are documented in determination letters signed by the Secretary of Energy, and we conducted a double-blind content analysis of the 89 letters to determine the range and frequency of conditions. Specifically, two analysts independently reviewed the 89 letters and recorded the range and frequency of conditions in separate documents. Then the analysts compared their assessments and resolved any

⁶GAO/AIMD-00-21.3.1 (“Green Book”) (Washington, D.C.: November 1999).

differences through discussion. To describe DOE's authorities to enforce these conditions, as well as the actions DOE has taken to enforce them, we reviewed the Atomic Energy Act and 10 C.F.R. Part 810. We also interviewed DOE, NNSA, Federal Bureau of Investigation, and Department of Justice officials and obtained information on enforcement actions. To describe the information DOE provides on its enforcement of Part 810, we reviewed DOE's 10 C.F.R. Part 810 Assistance to Foreign Atomic Energy Activities Part 810 Program Elements and interviewed DOE and NNSA officials. We also interviewed representatives from entities regulated or potentially regulated under Part 810, as described above. To determine the information provided by other agencies that administer related export control regimes, we reviewed relevant regulations and publicly available information on NRC and the Departments of State and Commerce's enforcement policies, including enforcement manuals and voluntary disclosure guidelines; and interviewed NRC officials. We also interviewed two export-control compliance experts, recommended to us based on their expertise, and representatives from two law firms with expertise and experience in U.S. nuclear export controls.

We conducted this performance audit from August 2013 to October 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Enforcement Tables

Tables 5 and 6 contain information on the common conditions imposed on specific authorizations for exports of nuclear technology under 10 C.F.R. Part 810 granted from 2008 through 2013, as well as examples of less common conditions.

Table 5: Conditions Imposed through Specific Authorizations for 18 Deemed Exports, 2008 - 2013

Condition	Responsibility	Frequency	Relevant notes
Common conditions			
Ensure that the foreign national maintains a current passport and visa	U.S. company	16 of 18	Two authorizations did not contain this condition. In one, the foreign nationals were being employed through a German affiliate. The other authorization was for the transfer of technology to a company in India, as well as Indian nationals in the company's U.S. affiliate.
Notify Department of Energy (DOE) promptly upon termination or change in immigration status for the foreign national	U.S. company	17 of 18	The one authorization without this condition was for the transfer of technology to a company in India, as well as Indian nationals in the company's U.S. affiliate.
Submit to DOE for prior approval changes in the foreign national's work duties	U.S. company	17 of 18	The one authorization without this condition was for the transfer of technology to a company in India, as well as Indian nationals in the company's U.S. affiliate.
Report annually to DOE on activities pursued by each foreign national under this authorization	U.S. company	17 of 18	In one case, for the transfer of technology to a company in India, as well as Indian nationals in the company's U.S. affiliate, the authorization required quarterly reports.
Obtain from the foreign national a signed nonproliferation or nondisclosure statement.	U.S. company, foreign national	17 of 18	In one case, for the transfer of mixed oxide fuel fabrication technology to a South African national, neither a nonproliferation statement nor a non-disclosure statement was required.
Examples of less common conditions			
Ensure that the foreign national has access to technology governed by Part 810 only through fulfillment of contracts and projects described in the authorization.	U.S. company	12 of 18	It appears that DOE meant to include this condition in one authorization (not counted in the 12), but omitted the word "only," which potentially renders the provision meaningless. ^a
Ensure that the foreign national will not access sensitive nuclear technology.	U.S. company	3 of 18	These three authorizations involved exports of nuclear power plant technology and training tools to either Indian or Chinese nationals.
Ensure that the foreign national will only have access to executable code (i.e., not source code).	U.S. company	3 of 18	The three authorizations pertained to transfers of nuclear power plant technology and training tools to either Indian or Chinese nationals.

Source: GAO analysis of DOE information. | GAO-15-124

Note: We analyzed all authorizations from 2008-2013; the 18 authorizations for deemed exports were signed in 2010 or later.

Appendix II: Enforcement Tables

^aThe condition requires that the company ensure that each foreign national approved under the authorization be allowed access to the nuclear technology described in its application during fulfillment of the company's contracts and projects.

Table 6: Conditions Imposed through Specific Authorizations for 72 Technology Exports (Other Than Deemed Exports), 2008-2013

Condition	Responsibility	Frequency	Relevant notes
Common conditions			
Peaceful (non-military or non-explosive) use	Importing country, importing company or other entity	70 of 72	Two authorizations for exports to China did not explicitly contain conditions on peaceful use. However, the authorizations stated that the transferred technology would be subject to the Agreement for Cooperation between the Government of the United States of America and the Government of the People's Republic of China Concerning Peaceful Uses of Nuclear Energy of July 23, 1985. This agreement provides that transferred technology may not be used for any nuclear explosive device, for research specifically on or development of any nuclear explosive device, or for any military purpose.
Re-export permission required:	Importing country, importing company	70 of 72	Two authorizations for exports to China did not explicitly contain conditions on re-export. However, the authorizations stated that the transferred technology would be subject to the Agreement for Cooperation between the Government of the United States of America and the Government of the People's Republic of China Concerning Peaceful Uses of Nuclear Energy of July 23, 1985. This agreement provides that transferred technology may not be retransferred outside the parties' boundaries unless the parties agree. In one case, an export to Ukraine in 2013, retransfer required "prior coordination."
prior written permission		42 of 72	
written permission		10 of 72	
prior permission		17 of 72	
prior coordination		1 of 72	
Submit for prior DOE approval names of additional companies or individuals to which the exporter proposes transferring the technology	Exporter	70 of 72	The two authorizations that did not include this condition were for exports to the United Arab Emirates in 2009 and 2010.
Report to DOE on activities conducted under the authorization:	Exporter	70 of 72	Two authorizations did not contain any explicit reporting requirement. One authorization was for an export to Germany of specifications and requirements for procuring components, equipment and services for construction of a centrifuge plant. The other was for an export to China of computer codes.
quarterly		5 of 72	
semi-annually		19 of 72	
annually		46 of 72	
Examples of less common conditions			
Implement necessary physical protections	Importing country, importing company	13 of 72	The 13 authorizations with this condition involved exports to China (7), Russia (4), Germany (1), and Armenia (1).

Appendix II: Enforcement Tables

Condition	Responsibility	Frequency	Relevant notes
The identified recipients of the transferred technology are authorized to receive the technology.	Importing country, importing company	12 of 72	This condition was imposed for 12 of the 21 authorizations for exports to China.
Prior to any third party transfer, the United States and China mutually agree in writing on conditions associated with the transfer.	U.S. government, importing government, importing company	12 of 72	This condition was imposed for 12 of the 21 authorizations for exports to China. ^a
In case of possible re-export, the principles stipulated in IAEA document INFCIRC/254/Part1 will be applied. ^b	Importing country, importing company	6 of 72	This condition was imposed in six authorizations for exports to Russia.

Source: GAO analysis of DOE information. | GAO-15-124

^aThe 12 authorizations that contained this condition are not the same 12 authorizations that contained the prior condition requiring that the identified recipients of the technology are authorized to receive it.

^bFor example, see INFCIRC/254/Rev.9/Part1, "Communication Received from the Permanent Mission of Brazil regarding Certain Member States' Guidelines for the Export of Nuclear Material, Equipment and Technology," 7 November 2007. This communication lays out the Nuclear Suppliers Group (NSG) guidelines.

Appendix III: Comments from the Department of Energy



Department of Energy
Under Secretary for Nuclear Security
Administrator, National Nuclear Security Administration
Washington, DC 20585



October 3, 2014

Mr. David Trimble
Director, Natural Resources
and Environment
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Trimble:

Thank you for the opportunity to review the Government Accountability Office's (GAO) draft report titled, "*NUCLEAR COMMERCE: Additional Actions Needed to Improve DOE's Export Control Process*" (GAO-15-124). The National Nuclear Security Administration (NNSA) concurs with and has already begun addressing all six of the recommendations provided in the draft report. In particular, part of our ongoing Process Improvement Plan involves working to identify gaps, overlaps, and inefficiencies in the Part 810 authorization process.

The enclosure to this letter provides the specific milestones and timelines for addressing each recommendation. We have also provided general and technical comments for GAO's consideration to enhance the clarity and the factual accuracy of the report.

If you have any questions regarding this response, please contact Dean Childs, Director, Office of Audit Coordination, at (301) 903-1341.

Sincerely,

Frank G. Klotz

Enclosure



Enclosure

NATIONAL NUCLEAR SECURITY ADMINISTRATION
Response to Report Recommendations

*NUCLEAR COMMERCE: Additional Actions Needed to Improve DOE's
Export Control Process (GAO-15-124)*

Recommendation 1: *Review existing targets for processing Part 810 applications and determine the extent to which they align with DOE's resources and authorities. Based on the results of this review, establish realistic and achievable targets for each stage of the Part 810 process.*

Management Response: Concur

As part of our ongoing Process Improvement Plan (PIP), NNSA is working to identify gaps, overlaps, and inefficiencies in the Part 810 authorization process. This effort aims to reduce the amount of time required to process an export request application, while maintaining the strongest nuclear nonproliferation controls in the interest of U.S. national security. As part of the PIP, NNSA will establish new, achievable targets for each stage of the Part 810 process. The most significant processing delays are caused by long wait times to receive the required written nonproliferation assurances from foreign governments. While the U.S. Government cannot control how long a foreign government takes to provide nonproliferation assurances, NNSA has initiated discussions with governments to streamline the process where possible.

In parallel, NNSA is performing a quantitative analysis as a part of a Six Sigma-based effort, to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in business processes. NNSA as a whole, and the Part 810 team specifically, is working towards ISO 9001 compliance. ISO 9000 is a series of standards developed and published by the International Organization for Standardization (ISO) that define, establish, and maintain an effective quality assurance system for manufacturing and service industries. Based upon the outcome of a quantitative analysis of the current Part 810 authorization process, NNSA will incorporate, where possible, those efficiencies.

The third prong of the PIP involves a comprehensive study currently underway led by industry experts under contract to DOE that will result in a report and set of recommendations for improvement to NNSA. This study includes interviews with all relevant stakeholders impacted by Part 810 including DOE/NNSA staff, the U.S. interagency, industry, and non-governmental organizations.

Estimated completion date: We anticipate this effort will be complete by June 2015.

Recommendation 2: *Integrate these targets into DOE's new Part 810 e-licensing system to monitor agency performance against them to ensure that the targets remain realistic and achievable and that they improve predictability for exporters.*

Management Response: Concur

NNSA is in the process of developing an electronic processing system ("e810 system") and case management web portal for Part 810 applications that has both internet and intranet components. This portal will: (1) help make the Part 810 process ISO 9001 compliant by developing a records management function; (2) make the Part 810 application process easier for applicants to complete; (3) align with industry's request for Part 810 procedural reforms; (4) increase transparency in the application process to provide more insight into the status of each application throughout the review; (5) shorten the processing time for Part 810 authorizations; and (6) enable NNSA to monitor performance against new target processing times for each stage of the Part 810 process.

For the past year, NNSA has been working with the NNSA Chief Information Officer (CIO) to develop in stages, the e810 system. The initial phase will allow U.S. companies to submit and track the progress of their Part 810 application or request through the e810 system. This will facilitate NNSA coordination with the interagency to obtain the requisite concurrence (State Department) and conduct the required consultations (Departments of Defense and Commerce, and the Nuclear Regulatory Commission). Future phases will focus on streamlining the internal, back-end processing and adding administrative enhancements to the existing site, including a database of previous authorization decisions.

Estimated completion date: The NNSA CIO's office estimates that the e810 system will be available for public use around May 2015. However, development will continue, to make the system increasingly more sophisticated and helpful.

Recommendation 3: *Determine whether DOE has authority to impose civil penalties for Part 810 violations and develop procedures accordingly.*

Management Response: Concur

DOE has under active consideration whether the Department has statutory authority under section 234 of the Atomic Energy Act (AEA) to assess civil penalties for violation of AEA section 57 b. and its implementing regulations at 10 CFR Part 810.

Estimated completion date: At the conclusion of the review process, we will take any action deemed appropriate.

Recommendation 4: *Develop a risk based procedure for selecting exporters' reports on authorized activities for in-depth analysis.*

Management Response: Concur

NNSA plans to consult with other regulatory agencies such as the Nuclear Regulatory Commission (NRC) to determine what risk-based procedures they have in place for analyzing reports on authorized activities they receive, if any, and to evaluate whether such a process could be modified to work for Part 810 reports. We also intend to consult with the DOE Office of Intelligence and Counterintelligence to explore collaborate on developing a risk-based assessment tool. If we determine it is possible and useful to create such a system, we anticipate including this as part of the previously discussed PIP. We do note that 810 general authorizations already are risk-informed and are limited to technology, information, and foreign country destinations that the Secretary of Energy already has determined to be "non-inimical" to the interest of the United States.

Estimated completion date: We anticipate determining whether risk-based procedures should be included in the PIP by December 31, 2014.

Recommendation 5: *Assess the need to establish export compliance policies that encourage and reward exporters who self-identify and correct violations, and develop guidance to exporters on such policies.*

Management Response: Concur

NNSA plans to consult with other regulatory agencies such as the NRC and the Department of Commerce to determine what export compliance policies they have in place for encouraging and rewarding self-disclosure and to evaluate whether such a process(es) could be modified for Part 810 self-reporting.

Additionally, for the issuance of the final rule, NNSA has developed a strategic plan for outreach and communications. Through digital media, face-to-face meetings, and third party partnerships, NNSA will be informing the public how we plan to manage the transition to the final rule internally, developing guidelines to facilitate understanding of the final rule, as well as creating channels to answer questions promptly. Our main goals with the communications plan are to:

- Ease the transition to and promote understanding of the final rule;
- Present a responsive NNSA;
- Create transparency to allay concerns raised in public comments on the proposed Part 810 regulatory amendments; and
- Remind industry of its obligation with regard to self-reporting, and offer assistance to any company or individual that would like to discuss its export compliance program with NNSA.

NNSA will undertake speaking engagements with the press and industry to discuss the regulatory changes, develop and maintain website content with updated guidelines and FAQs, and will reach out to those affected by the final rule to help them to submit necessary information required to be submitted before the expiration of the transition period after the final rule becomes effective. Information on how to self-report will be included in the FAQs.

Estimated completion date: We anticipate consulting with the various offices by the end of calendar year 2014. While the public roll-out for the e810 system will likely be around May 2015, we do not anticipate that the initial stage of the system will incorporate a self-reporting mechanism. That will likely be incorporated in subsequent modifications in the late 2015-early 2016 time frame.

Recommendation 6: *Ensure that all inquiries about the scope of part 810, including NNSA's responses, are documented in accordance with existing DOE procedures.*

Management Response: Concur

The e810 system will be structured so that anyone who applies for specific authorization or reports on a general authorization activity must register in order to do so. We will encourage registration from anyone who comes to the Department with a Part 810-related question for purposes of documentation. NNSA will document (for internal NNSA purposes, not for public consumption) when there is an inquiry or contact from anyone registered on the e810 system, thus ensuring memorialization of all contacts. NNSA will continue to consider such inquiries "informal." Only written interpretations of the Department's General Counsel in response to formal requests, therefore, are binding on the Department.

Estimated completion date: We anticipate the ability to add information on inquiries to the files of registered users on the e810 system to be part of the initial public roll-out of the e810 system in the May 2015 timeframe.

General Comments

The draft report frequently draws comparisons between the DOE Part 810 export control regime and the export control regimes of the Nuclear Regulatory Commission (NRC), the Department of Commerce (DOC), and the Department of State (DOS). Unlike all of the other regimes, DOE's export authorization process mandated by section 57 b. of the Atomic Energy Act (AEA) prescribes the involvement of five different executive departments/agencies, and includes diplomatic engagements with a host of individual foreign governments, whose responsiveness to U.S. Government requests for nonproliferation assurances the U.S. Government cannot control. Clarification of this point maybe beneficial to the average reader of the report.

DOE guidance must be able to address rapid change in the global civil nuclear market. With the global nuclear market expanding exponentially, Part 810 requests have become more complicated in recent years. There are occasions when we receive a request that presents a unique situation, making "consistent" guidance inapplicable. NNSA is taking steps in the current Part 810 rulemaking to make the rule as comprehensive as possible, and aspects of the PIP will provide guidance as well. Specifically, the proposed revision, among other things, proposes to: conform Part 810 to the Nuclear Suppliers Group Guidelines; replace the list of specifically authorized destinations with a list of generally authorized destinations (this positive list is consistent with the President's export control reform initiative); provide a technical description of the activities that are generally authorized; clarify the use of the "operational safety" fast track approval; identify required information for all specific authorization applications; and embody the Department's practice for authorizing "deemed exports" of technology to lawful permanent residents of the United States and protected individuals under the Immigration and Naturalization Act working for U.S. nuclear employers. NNSA believes that, if adopted, these revisions will address many concerns expressed by commenters related to consistency and clarity. However, the ability to devise creative solutions for unique and/or new situations remains an important aspect of the Part 810 authorization process.

NNSA is revising the inquiry process. The draft report states (on the first page) that DOE has not proposed revising the inquiry process. As described below, various aspects of the PIP will address the inquiry process and the website will contain both written guidance on reporting for general authorizations and applying for specific authorizations. Additionally, there will be FAQs and case studies (with any identifying or proprietary information redacted). NNSA believes that, taken together, these steps will greatly improve the inquiry process by reducing the need for potential applicants to contact NNSA with questions about the Part 810 authorization process. NNSA representatives stated this position at public meetings regarding the proposed new rule and PIP, which was a 2010 GAO recommendation. The Department clearly took seriously the 2010 GAO audit recommendations on Part 810, as is evidenced by the current rulemaking, process improvement plan, and creation of an e-810 system.

Additionally, with regard to informal inquiries, the current Part 810 rule states that only a written interpretation of the Department's General Counsel (or an interpretation authorized in writing by the Secretary) is binding upon the Department. NNSA staff provides written guidance approximately 15 times every month. We believe GAO is referring to informal conversations by members of the public with NNSA staff, which are generally exploratory in nature. This type of interaction with the regulated community is consistent with NRC and DOC practice and is in keeping with the best practices of regulatory authorities in that it assists with maintaining open lines of communication.

Part 810 authorization enforcement. It is true that NNSA has not referred any suspected Part 810 violations to the Department of Justice for criminal investigation, or revoked any authorizations for cause. However, for clarification NNSA has not received reports of illicit technology transfers or seen evidence of companies violating Part 810 authorization restrictions. Thus, while we are taking steps to evaluate how we can strengthen our administration of Part 810, we believe we have been diligent in assuring nuclear technology and information are properly controlled.

Appendix IV: GAO Contacts and Staff Acknowledgments

GAO Contacts:

David C. Trimble, (202) 512-3841, or trimbled@gao.gov and
Thomas Melito, (202) 512-9601, or melitot@gao.gov

Staff Acknowledgments:

In addition to the individual named above, Glen Levis (Assistant Director), Jeff Phillips (Assistant Director), Alisa Beyninson, Antoinette Capaccio, Pamela Davidson, R. Scott Fletcher, Grant Mallie, Cynthia Norris, John Rastler, and Jennifer Young made key contributions to this report.

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