



U.S. DEPARTMENT OF
ENERGY

Transfers of Civil Nuclear Technology

Report to Congress
April 2020

United States Department of Energy
Washington, DC 20585

Message from the Secretary

The United States controls the transfer of unclassified civil nuclear technologies pursuant to Section 57 b. of the *Atomic Energy Act (AEA) of 1954*, as amended, which prohibits U.S. persons from engaging or participating directly or indirectly in the production or development of special nuclear material outside the United States except as specifically authorized under an Agreement for Cooperation made pursuant to AEA section 123 (including a specific authorization in a subsequent arrangement under section 131) or as authorized by the Secretary of Energy pursuant to regulations codified at 10 CFR Part 810 (Part 810).

42 U.S.C. § 2077a(e) requires that the Department of Energy (DOE) send a report, concurrent with the President's Budget request to Congress, on DOE activities associated with the review of applications for authorization under section 57 b. of the AEA to transfer U.S. civil nuclear technology to any foreign country. This year's report shows that DOE has made significant improvements in streamlining the Part 810 process. Over the last four years, DOE has reduced processing times for approved Part 810 applications by nearly 50 percent, while still maintaining strong nonproliferation controls on transfers of U.S. nuclear technology.

Pursuant to statutory requirements, this report is being provided to the following Members of Congress:

- **The Honorable James Inhofe**
Chairman, Senate Committee on Armed Services
- **The Honorable Jack Reed**
Ranking Member, Senate Committee on Armed Services
- **The Honorable Deb Fischer**
Chairman, Subcommittee on Strategic Forces
Senate Committee on Armed Services
- **The Honorable Martin Heinrich**
Ranking Member, Subcommittee on Strategic Forces
Senate Committee on Armed Services
- **The Honorable Adam Smith**
Chairman, House Committee on Armed Services
- **The Honorable William "Mac" Thornberry**
Ranking Member, House Committee on Armed Services
- **The Honorable Jim Cooper**
Chairman, Subcommittee on Strategic Forces
House Committee on Armed Services

- **The Honorable Mike Turner**
Ranking Member, Subcommittee on Strategic Forces
House Committee on Armed Services
- **The Honorable Richard Shelby**
Chairman, Senate Committee on Appropriations
- **The Honorable Patrick Leahy**
Vice Chairman, Senate Committee on Appropriations
- **The Honorable Lamar Alexander**
Chairman, Subcommittee on Energy and Water Development
Senate Committee on Appropriations
- **The Honorable Dianne Feinstein**
Ranking Member, Subcommittee on Energy and Water Development
Senate Committee on Appropriations
- **The Honorable Nita M. Lowey**
Chairwoman, House Committee on Appropriations
- **The Honorable Kay Granger**
Ranking Member, House Committee on Appropriations
- **The Honorable Marcy Kaptur**
Chairwoman, Subcommittee on Energy and Water Development
House Committee on Appropriations
- **The Honorable Mike Simpson**
Ranking Member, Subcommittee on Energy and Water Development
House Committee on Appropriations
- **The Honorable James Risch**
Chairman, Senate Committee on Foreign Relations
- **The Honorable Bob Menendez**
Ranking Member, Senate Committee on Foreign Relations
- **The Honorable Eliot Engel**
Chairman, House Committee on Foreign Affairs
- **The Honorable Michael McCaul**
Ranking Member, House Committee on Foreign Affairs
- **The Honorable Richard Burr**
Chairman, Senate Select Committee on Intelligence
- **The Honorable Mark Warner**
Vice Chairman, Senate Select Committee on Intelligence
- **The Honorable Adam Schiff**
Chairman, House Permanent Select Committee on Intelligence

- **The Honorable Devin Nunes**
Ranking Member, House Permanent Select Committee on Intelligence
- **The Honorable Lisa Murkowski**
Chairman, Senate Committee on Energy and Natural Resources
- **The Honorable Joe Manchin**
Ranking Member, Senate Committee on Energy and Natural Resources
- **The Honorable Frank Pallone**
Chairman, House Committee on Energy and Commerce
- **The Honorable Greg Walden**
Ranking Member, House Committee on Energy and Commerce

If you have any questions or need additional information, please contact Mr. Christopher Morris, Deputy Assistant Secretary for House Affairs, or Mr. Shawn Affolter, Deputy Assistant Secretary for Senate Affairs, Office of Congressional and Intergovernmental Affairs, at (202) 586-5450, or Ms. Katie Donley, Associate Director for External Coordination, Office of the Chief Financial Officer, at (202) 586-0176.

Sincerely,



Dan Brouillette

Executive Summary

The Department of Energy (DOE), through section 57 b. of the Atomic Energy Act (AEA) of 1954, as amended, holds the statutory responsibility for authorizing the transfer of unclassified nuclear technology and assistance to foreign atomic energy activities within the United States and abroad. DOE, working with the Departments of State, Defense, and Commerce, the Nuclear Regulatory Commission, and, in certain cases, the Office of the Director of National Intelligence, may authorize technology transfers and assistance related to certain nuclear fuel-cycle activities, commercial nuclear power plants, and research and test reactors. Covered transfers may include the transfer of physical documents or electronic media, electronic transfers, or the transfer of knowledge and expertise.

Part 810 of Title 10, Code of Federal Regulations (Part 810), implements AEA section 57 b.(2) to control the export of unclassified nuclear technology and assistance and enable peaceful nuclear trade by helping to ensure that nuclear technologies exported from the United States will not be used for non-peaceful purposes. 42 U.S.C. § 2077a(e) requires DOE to submit a report on its activities associated with the review of applications for authorization under section 57 b. of the AEA to transfer U.S. civil nuclear technology to any foreign country.

For the period of October 1, 2018 through September 30, 2019, DOE:

- Received 36 applications for specific authorization;
- Closed out 48 applications for specific authorization, including 24 specific authorizations approved by the Secretary, 4 applications denied by the Secretary, 15 applications withdrawn at the request of the applicant, and 5 applications returned to the applicant without action; and
- Reviewed over 600 reports on generally authorized activities and over 75 reports on specifically authorized activities.

For the 24 specific authorizations approved in fiscal year (FY) 2019, the average time from the receipt of all necessary information from the applicant to issuance of the authorization by the Secretary was nine months. This represents a slight increase relative to the FY 2018 average of eight months. The increase is due to the approval of several applications for transfers to China that had been on hold prior to release of the U.S. Policy Framework on Civil Nuclear Cooperation with China in October 2018. Excluding these three cases, the average processing time in FY 2019 was six months.

The FY 2018 and FY 2019 average processing times reflect significant improvements relative to historical averages. In fact, over the last 4 years, DOE has reduced processing times for approved Part 810 applications by nearly 50 percent. DOE is committed to continuing to streamline the Part 810 process while maintaining strong nonproliferation controls on transfers of U.S. nuclear technology.



Transfers of Civil Nuclear Technology

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I. Legislative Language

This report responds to legislative language set forth in section 3136(e) of the *National Defense Authorization Act for Fiscal Year 2016* (FY 2016 NDAA) (P.L. 114-92), as amended, codified at 42 U.S.C. § 2077a(e), wherein it is stated:

(e) Report On Transfers To All Foreign Countries. —

(1) IN GENERAL.—Concurrent with the submission to Congress of the budget of the President for a fiscal year under section 1105(a) of title 31, United States Code, the Secretary of Energy shall submit to the appropriate congressional committees a report on the activities of the Department of Energy associated with the review of applications for authorization under section 2077(b) of this title to transfer United States civil nuclear technology to any foreign country.

(2) ELEMENTS.—The report required by paragraph (1) shall include—

(A) the number of applications for authorization under section 2077(b) of this title to transfer United States civil nuclear technology to a foreign country submitted during the year preceding the submission of the report;

(B) the length of time each such application was under review;

(C) for each such application, an identification of any officer to which the authorization under such section 2077(b) of this title was delegated pursuant to section 2201(n) of this title;

(D) the number of such applications that were granted; and

(E) a description of efforts to streamline the review of such applications, taking into account the proliferation and diversion potential of end-users in the country to which United States civil nuclear technology would be transferred pursuant to such applications.

II. Introduction

The Department of Energy (DOE) holds the statutory responsibility for authorizing the transfer of unclassified nuclear technology and assistance to foreign atomic energy activities within the United States or abroad. In accordance with section 57 b. of the Atomic Energy Act of 1954, as amended (AEA)(42 USC § 2077(b)), persons may engage, directly or indirectly, in the production or development of special nuclear material outside the United States only: (1) as specifically authorized under an Agreement for Cooperation made pursuant to AEA section 123 (including a specific authorization in a subsequent arrangement under section 131); or (2) upon authorization by the Secretary of Energy, with the concurrence of the Department of State (DOS) and after consulting with the Departments of Defense and Commerce, the Nuclear Regulatory Commission, and, in certain cases, the Office of the Director of National Intelligence.

This requirement, as implemented by DOE, applies to technology transfers and assistance related to certain nuclear fuel-cycle activities, commercial nuclear power plants, and research and test reactors. Covered transfers may include the transfer of physical documents or electronic media, electronic transfers, or the transfer of knowledge and expertise.

Part 810 of Title 10, Code of Federal Regulations (Part 810) implements AEA section 57 b.(2). Part 810 controls the export of unclassified nuclear technology and assistance and enables peaceful nuclear trade by helping to assure that nuclear technologies exported from the United States will not be used for non-peaceful purposes. The Secretary has granted a general authorization for certain categories of activities which the Secretary has found to be “non-inimical,” or not harmful, to the interest of the United States – including assistance or transfers of technology to the “generally authorized destinations” listed in Appendix A to Part 810. Whether a destination is determined to be generally authorized depends on a number of factors, including the existence of a bilateral “123 Agreement” with the United States, the country’s nonproliferation credentials, and the significance and scope of its nuclear trade relationship with the United States.

Other activities within the scope of Part 810 – including transfers of technology or provision of assistance to destinations not listed in Appendix A – require a case-by-case specific authorization from the Secretary. A specific authorization is also required for any assistance involving sensitive nuclear technologies (i.e., enrichment, reprocessing, and heavy water production), as well as certain other technologies defined in 10 CFR 810.7(c), regardless of destination.

DOE’s National Nuclear Security Administration (DOE/NNSA) is the Departmental element responsible for implementing the Part 810 process, including analyzing Part 810 applications, developing recommendations for the Secretary, and coordinating interagency reviews.

42 U.S.C. § 2077a(e) mandates that DOE send a report, concurrent with the President’s Budget request to Congress, on DOE’s activities associated with the review of applications for authorization under section 57 b. of the AEA to transfer U.S. civil nuclear technology to any foreign country.

III. Reportable Transfers

During FY 2019, DOE received 36 applications for specific authorization. During the same time period, DOE closed out a total of 48 applications, including 14 applications submitted in FY 2019 and 34 applications that were submitted in prior years. Of these 48 applications, 24 specific authorizations were issued by the Secretary, 4 applications were denied by the Secretary, 15 applications were withdrawn at the request of the applicant, and 5 applications were returned to the applicant without action. The Secretary did not delegate approval of any Part 810 authorizations in FY 2019.

Applications may be returned without action for several reasons, to include:

- DOE is unable to conclude the required interagency consultations;
- The applicant has not provided the information required for DOE to process the application;

- The requisite foreign government nonproliferation assurances are not received in a timely manner; or
- DOE has determined that the proposed activity is outside the scope of Part 810 and therefore does not require authorization under this regulation.

In addition to specific authorization processing activities, in FY 2019 DOE also reviewed over 600 reports on generally authorized activities and over 75 reports on specifically authorized activities for compliance with Part 810 regulations.

For the 24 approved specific authorizations, the average time from the receipt of all necessary information from the applicant to issuance of the authorization by the Secretary was nine months. This represents a slight increase relative to the FY 2018 average of eight months. The increase is due to the approval of several applications for transfers to China that had previously been on hold prior to release of the U.S. Policy Framework on Civil Nuclear Cooperation with China in October 2018. Excluding these three cases, the average processing time in FY 2019 was six months. The average processing time for each approved case is in Figure 1.

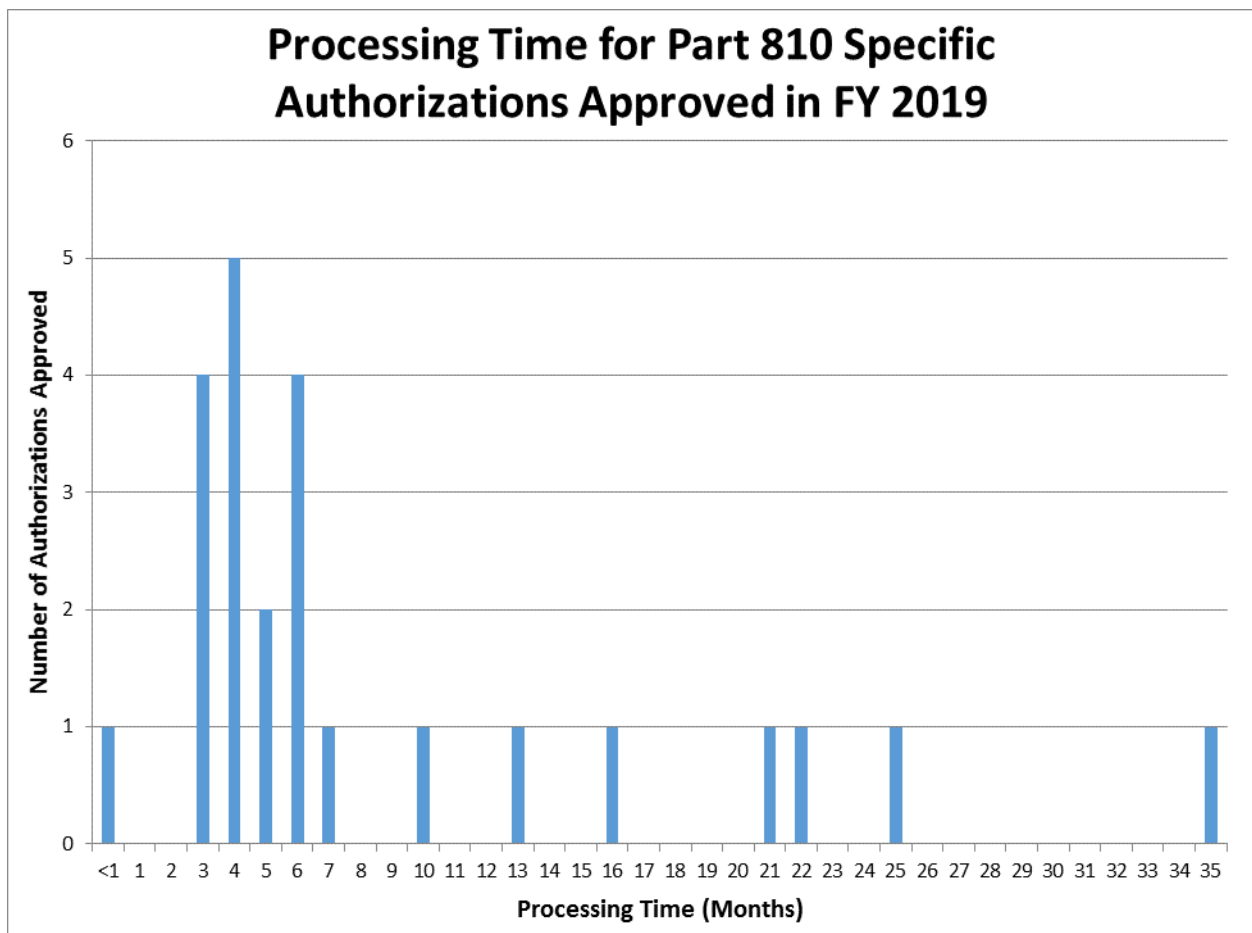


Figure 1

As DOE has reported previously, the most significant delays in application processing are caused by long wait times for DOS to receive written nonproliferation assurances from foreign governments, which DOS requires prior to providing concurrence (except in cases of “deemed exports” to foreign nationals in the United States). Notwithstanding these challenges, DOE is committed to streamlining the Part 810 process while maintaining strong nonproliferation controls on transfers of U.S. nuclear technology. Over the last 4 years, DOE has reduced processing times for approved Part 810 applications by nearly 50 percent, as delineated in Figure 2.

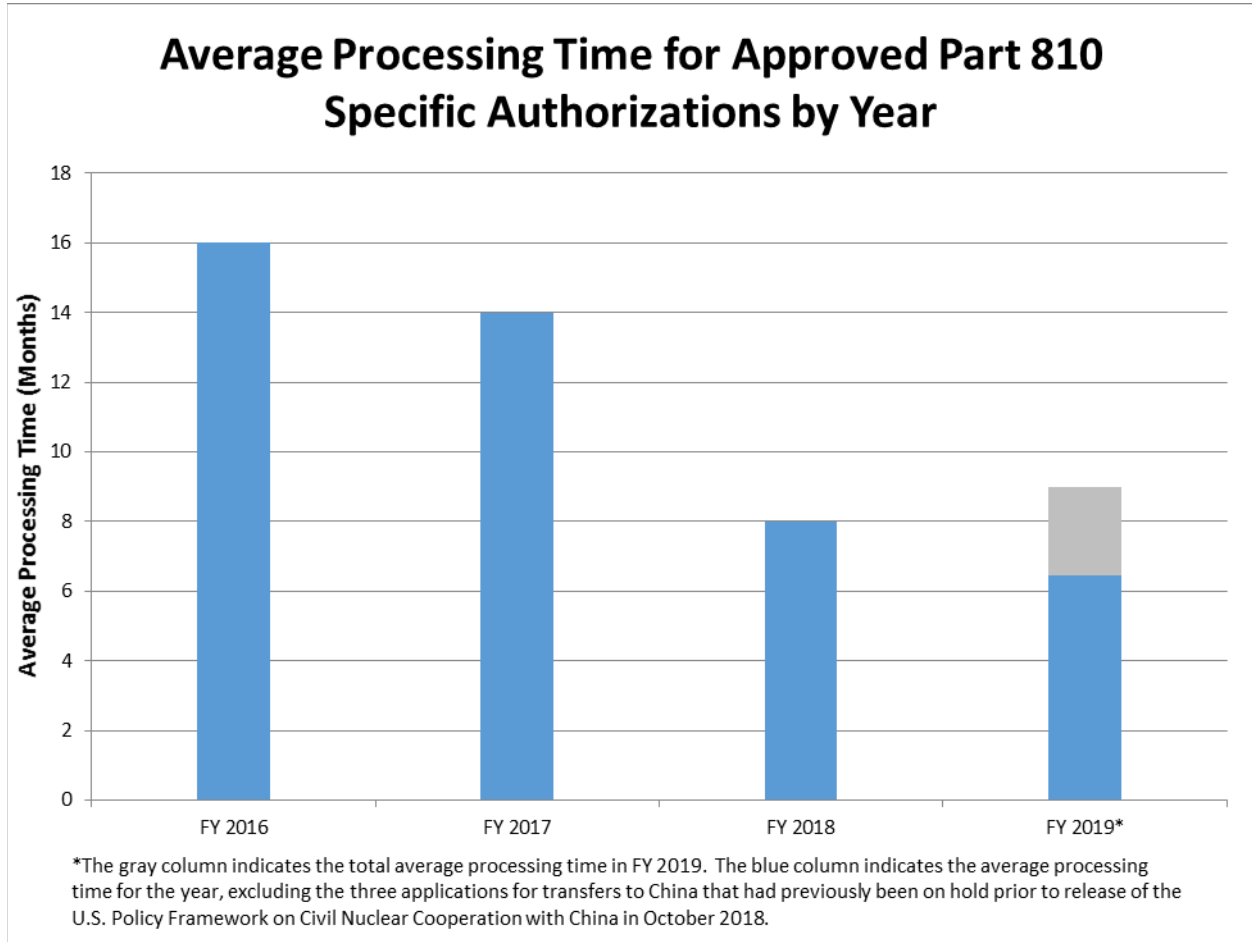


Figure 2

IV. Efforts to Streamline Reviews

In 2013, DOE/NNSA began developing a Process Improvement Plan (PIP) to identify key factors causing the delays in processing Part 810 applications and to identify possible process improvements. The PIP process was completed by an external team that included experts in Six Sigma™ methodology. The PIP team analyzed data from 1982 to 2015, interviewed several dozen key stakeholders, and developed a list of key factors contributing to the delays.

This PIP review led to the development of six broad recommendations to improve the Part 810 process:

- Improve process and data management;
- Reform the interagency process;
- Reduce DOE/NNSA time-in-process;
- Improve assistance to exporters;
- Expand enforcement and compliance monitoring; and
- Increase the use of risk-based decision-making.

DOE/NNSA has implemented a number of process improvements identified in the PIP. Key accomplishments include the following:

- Developed and deployed a web-based electronic system known as e810 that allows applicants to apply for specific authorization, file reports, and request determinations online rather than using an outdated paper process;
- Adopted standard templates for documents used in the application review process;
- Established a key single point of contact for inquiries;
- Established timely and realistic deadlines for internal reviews of Part 810 applications, which helps reduce processing times and increase the predictability of the review process;
- Streamlined the review process so that most reviews can be completed at the same time that DOS works to obtain the required nonproliferation assurances;
- Eliminated duplicative internal reviews; and
- Established regular online training sessions for the e810 electronic submissions portal.

DOE/NNSA continues to work with other DOE elements and U.S. interagency partners to reduce the time required to process Part 810 authorizations while maintaining strong nonproliferation controls on U.S. nuclear technology and assistance. Key activities in FY 2019 included the development of upgrades to the e810 electronic licensing system, publication of a comprehensive training document for companies that are subject to the Part 810 regulation, and the delivery of over 25 presentations to a total audience of over 650 people as part of ongoing outreach to exporters.

V. Conclusion

DOE is committed to reducing time-in-process for Part 810 applications, making guidance widely available to U.S. exporters to improve the Part 810 process, and removing unnecessary barriers to peaceful nuclear commerce and the dissemination of safe civilian nuclear technology. DOE made significant progress toward this goal in FY 2019.

DOE will continue to implement rigorous and thorough reviews prior to granting approval for specific authorizations, including receiving concurrence from DOS and completing consultations with the Department of Defense, Department of Commerce, and the Nuclear Regulatory Commission, as well as Office of the Director for National Intelligence for transfers to covered foreign countries as defined in the FY 2016 NDAA.