

OFFICE OF NONPROLIFERATION AND ARMS CONTROL (NPAC)

Introduction to 10 CFR Part 810

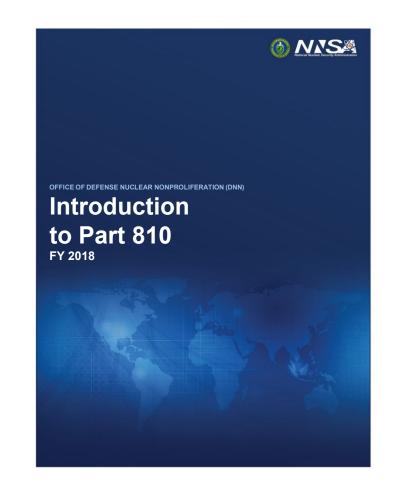
SAFEGUARD NUCLEAR MATERIALS TO PREVENT THEIR DIVERSION OR THEFT

> NONPROLIFERATION AND ARMS CONTROL CHALLENGES AND OPPORTUNITIES

Disclaimer: This is guidance provided by NPAC pursuant to 810.5 and subject to the limitation in 810.5.

Training Overview

- Part 810 history and background
- Key definitions and concepts
- Determining applicability
- General authorization (GA) or specific authorization (SA)?
- GA activity reporting
- SA activity reporting
- Requests for determinations



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Part 810 History and Background

Since 1980, DOE has approved 385 requests for specific authorization under 10 CFR Part 810 (as of July 2019).

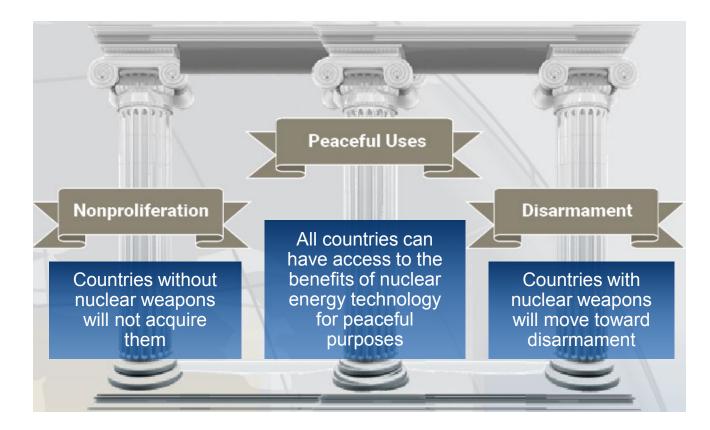
Background – Nuclear Non-Proliferation Treaty (NPT)

• The cornerstone of the international nonproliferation regime

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• Entered into force in 1970; 191 member states



Background – Nuclear Suppliers Group (NSG)







NSG Guidelines for Nuclear Transfers (Part 1 Guidelines) are implemented in domestic regulations and national legislation. The United States implements its NSG Part 1 commitments through 123 Agreements, DOE Part 810 authorizations, and NRC Part 110 licenses.

- The NSG is a voluntary, consensus-based group of 48 supplier governments
- The NSG was formally established in 1974, and the Guidelines and Trigger List were adopted in 1978.
- The group seeks to establish a level commercial playing field based on sound nonproliferation principles for nuclear supply.
- NSG Part 1 Guidelines control equipment, material and technologies "especially designed or prepared" for the development, production, or use of "source or special fissionable material."
 - Part 1 Technology includes, but is not limited to, assistance, expertise, software, codes, and controlled data.

Part 1 Guidelines – Conditions of Supply

- Peaceful use
- Safeguards in perpetuity
- IAEA full scope safeguards
- Adequate physical protection
- Consent prior to alteration in form or content
- Consent over retransfer
- Additional conditions for enrichment and reprocessing (ENR) transfers



Background - U.S. Export Regulations



Background – Atomic Energy Act (AEA)

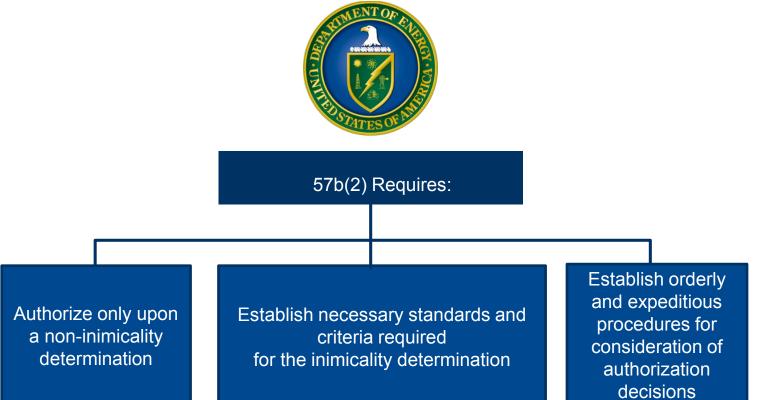
- Legal foundation for Part 810 is the Atomic Energy Act, as amended
- § 57 b.(2) prohibits all direct or <u>indirect</u> engagement or participation in the production/development of SNM outside the United States, unless:
 - Authorized by the Secretary of Energy following a determination that such activity will not be inimical to the interests of the United States.





Background – 10 CFR Part 810 (Part 810)

 DOE implements AEA § 57b.(2) through Part 810 "Assistance to Foreign Atomic Energy Activities."





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Key Definitions and Concepts

Definitions – Persons

Person (10 CFR 810.3)

Individuals



Public and Private Institutions



Business Entities



Federal, State and Foreign Government Entities Except DOE



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Key Definition – Special Nuclear Material (§ 810.3)

- Special Nuclear Material means:
 - Plutonium,
 - Uranium-233, or
 - Uranium enriched above 0.711 percent by weight in the isotope uranium-235.

Key Definition – Sensitive Nuclear Technology (§ 810.3)

- Sensitive Nuclear Technology means:
 - Any information (including information incorporated in a production or utilization facility or important component thereof) which is not available to the public and which 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, but shall not include Restricted Data.
 - The information may take a tangible form such as a model, prototype, blueprint, or operation manual or an intangible form such as assistance.



Key Definition – Technology (§ 810.3)

- Technology means:
 - Assistance or technical data required for the development, production or use of any plant, facility, or especially designed or prepared equipment for the activities.



Key Concept – Non-Inimicality Determination

- A threshold determination that a Part 810covered activity will not be inimical to the interests of the United States.
 - The Secretary of Energy must make a non-inimicality determination before any Part 810 authorization (general or specific) can be issued.
 - 10 CFR 810.9 lays out some factors that the Secretary considers in making a non-inimicality determination for an activity that requires specific authorization.



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Determining Applicability

Is an Activity Controlled?

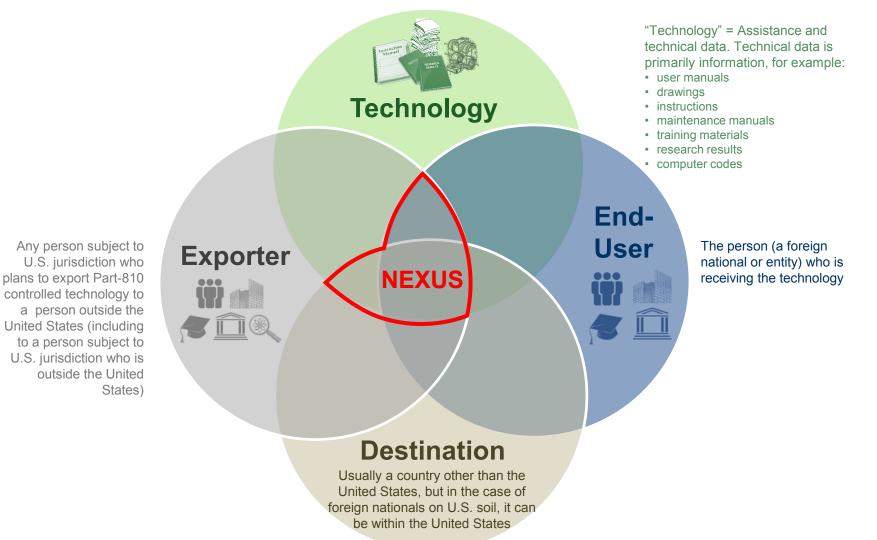


Determining Applicability – Five Key Questions





Key Definitions and Concepts - Nexus





Determining Applicability – Five Key Questions





Determining Applicability – Who are Exporters?

U.S. Citizens/Nationals



U.S. Business Entities or U.S. subsidiaries of foreign entities



Federal State and local Government Entities Except DOE



U.S. Institutions



U.S. lawful permanent residents or protected asylees



9/17/2019

The Misunderstanding

I wasn't technically working for a foreign company...

I was working as a consultant to a U.S. company, which was providing consulting work to the foreign company.

The Reality

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- Consultants are responsible for ensuring that any technology or assistance they provide to a U.S. company is not ultimately being passed to a foreign end user, unless that foreign end user is duly authorized to receive it under Part 810.
- When working through a U.S. company to provide assistance to a foreign entity, ask about the authorization, get a copy of it, and make sure your scope is included. Also, make sure you understand who is responsible for reporting your activities.
- If in doubt, ask DOE/NNSA for a determination.



Determining Applicability – Who are End-Users?

Foreign Nationals

inside and outside the United States



Foreign company or entity

including foreign subsidiaries of U.S. companies



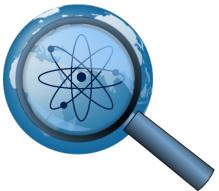
Foreign Government



Foreign Institutions



Research Groups



Does not apply to transfers to U.S. citizens/nationals, lawful permanent residents, protected asylees or U.S. legal entities within the United States



The Misunderstanding

The foreign company said it had the proper authorizations, so I thought I was good to go.

The Reality

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- Specific authorizations must be requested by the exporter. Foreign entities seeking to receive U.S. nuclear technology or assistance cannot request or obtain specific authorizations.
- If a foreign client claims to have requested and received a specific authorization, contact DOE/NNSA.

The Misunderstanding

Isn't my private consulting work with this foreign company covered by the existing authorization that a U.S. company already has with the same foreign company for this project?

The Reality

 Specific authorizations are exclusive to the company, the end user, and the technology. They do not extend to other contracts between the end user and other companies.

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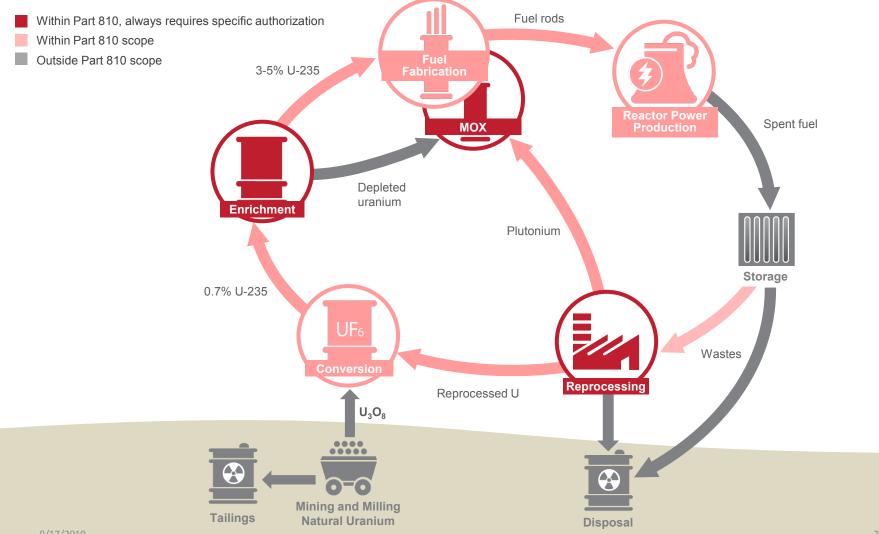
 Unless the work is being done under the auspices of the authorized U.S. company and it has confirmed that your work is within its scope, you should assume that you are required to obtain a separate authorization for the scope of work.



Determining Applicability – Five Key Questions







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Determining Applicability – What Kind of Technology? – Medical Isotopes Involving SNM

Extraction of Molybdenum-99 for medical use from irradiated targets of enriched uranium is generally authorized, provided that:

- 1. The activity does not also involve purification and recovery of enriched uranium materials, and
- 2. The technology used does not involve significant components relevant for reprocessing spent nuclear reactor fuel.



Determining Applicability – What Kind of ARMS CONTROL (NPAC) Technology – Is it Publically Available? 10 CFR 810.2(c)(2)



Published in a textbook, paper, or other publication OR has been prepared for publication Note: Info found on Wikipedia or via online sources may not be considered "published".

Privately funded OR may not be published <u>publicly</u>



PART 810 POTENTIALLY CONTROLLED

The Misunderstanding

This an industry standard. I thought it was common knowledge and not covered by the regulation.



The Reality

- If a company is paying you for information, then it is unlikely that the information is already publicly available.
- DOE/NNSA also does not consider information available only through search engines or Wikipedia to be "public" for the purposes of Part 810.
 Few people would base any significant work on information from unknown sources.
- Training on industry standards, or other common knowledge may be considered publicly available, but consult with DOE/NNSA to make sure your planned activity/assistance is not covered.

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Determining Applicability – Other Technology Outside the Nuclear Fuel Cycle

Controlled

- Development, production, or use of production accelerator-driven subcritical assembly systems (§ 810.2(b)(6))
- Heavy water production and hydrogen isotope separation (§ 810.2(b)(7)

Not controlled

- Exports authorized by NRC, DOS, and DOC (§ 810.2(c)(1))
- Nuclear fusion reactors
 (§ 810.2(c)(4))
- Radiopharmaceutical Isotopes not involving SNM (§ 810.2(c)(5))

The Misunderstanding

It was only a verbal transfer of information, so I didn't think it was covered by the regulation.



The Reality

- Verbal transfers of information, even in the context of informal conversations, can still constitute "assistance" that is controlled by Part 810.
- Anytime you are meeting with employees or individuals connected with non-U.S. entities or foreign citizens, be aware of falling into conversations about nuclear technology.
- Pay particular attention to questions that are not "on topic" during conferences or training sessions.

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The Misunderstanding

They already had all of the documents, so I didn't know that my teaching them how to use or understand them would be a problem.

The Reality

 Teaching someone how to use equipment or software or interpret the results of tests or calculations is considered assistance and may be covered by the rule.

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 This holds true regardless of whether the recipient already has manuals or other instructional materials.

The Misunderstanding

Will I be in compliance with Part 810 if I just separate my employer's proprietary information from my private consulting work?

The Reality

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- Proprietary information is an issue between you and the owner of such information. DOE/NNSA is only concerned with transfer of, or assistance with, nuclear technology.
- While proprietary information is more likely to be covered under the rule, material developed in private consulting may also by covered.



Determining Applicability – Five Key Questions



Determining Applicability

The Part 810 regulation applies to:

All persons subject to the jurisdiction of the United States who directly or indirectly engage or participate in the development or production of any special nuclear material outside the United States; and

The transfer of technology that involves any of the activities listed in paragraph (b) of this section (see slides 24-34) either in the United States or abroad by such persons or by licensees, contractors or subsidiaries under their direction, supervision, responsibility, or control.

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Determining Applicability – Five Key Questions





Determining Applicability – What is the Destination and End-Use of the Technology?

Outside the United States, to an end-user that is not **Inside the United** subject to U.S. States, but to a jurisdiction foreign national **Outside the United** States, to an end user subject to **U.S. jurisdiction**

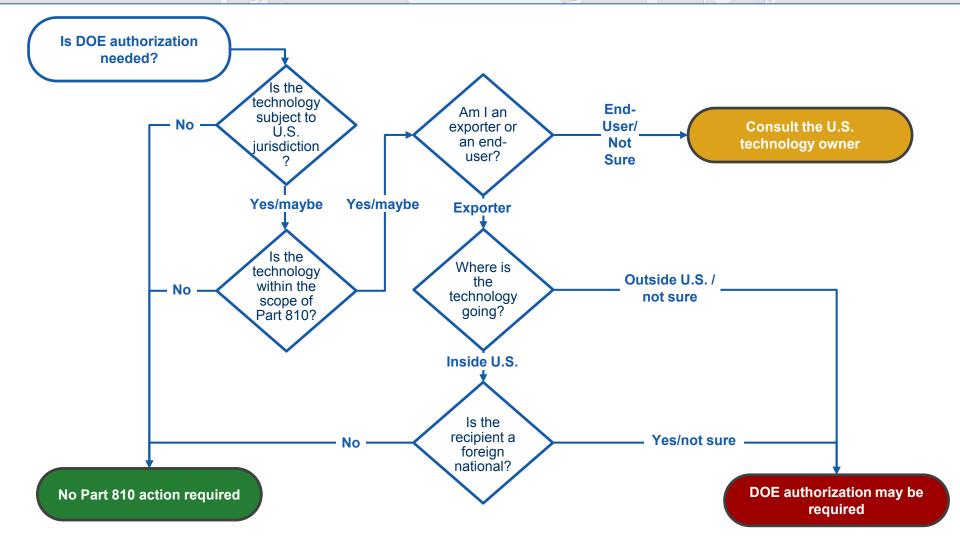


Determining Applicability – Five Key Questions



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Suggested Decision Tree

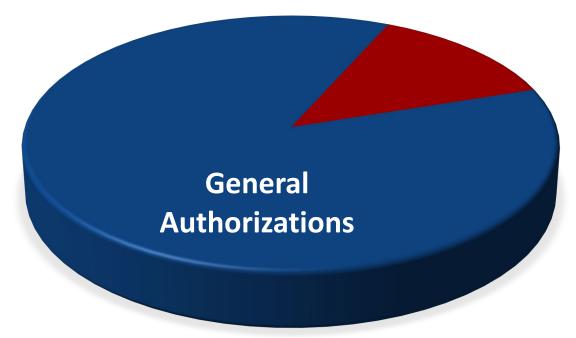


Disclaimer – Suggested decision tree only. FINAL DETERMINATION AS TO PART 810 APPLICABILITY MADE BY DOE/NNSA



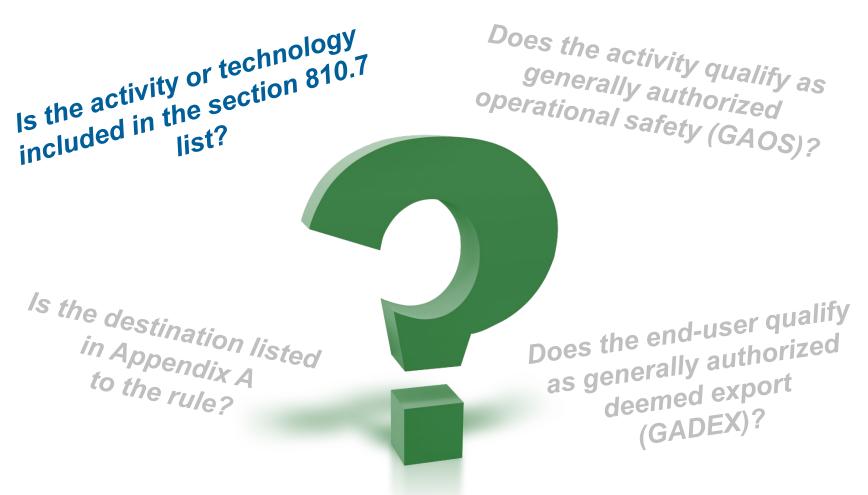
Volume of Part 810 Submissions







Activity Classification – General or Specific Authorization?

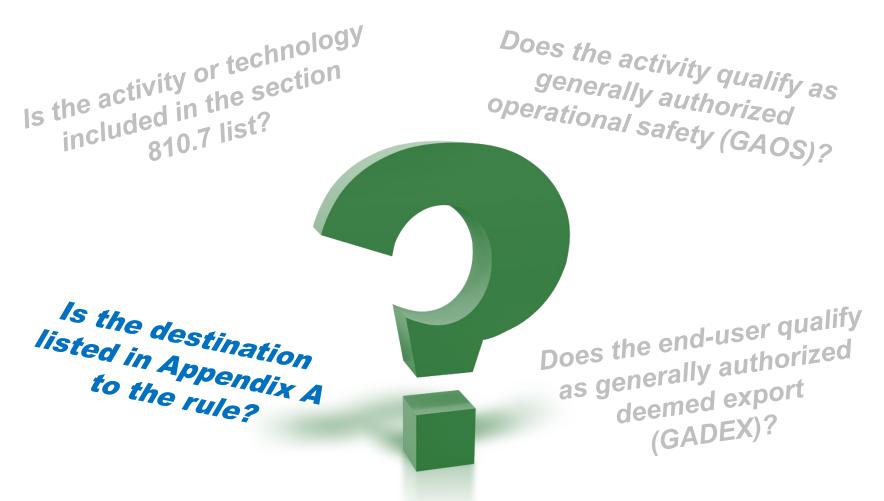


Activity Classification – § 810.7 (Activities Requiring Specific Authorization)

- Providing or transferring sensitive nuclear technology
- Pu and U isotope separation (U enrichment), or isotope separation of any other elements (including stable isotope separation) when the technology or process can be applied directly/indirectly to U or Pu
- ✓ Fabrication of nuclear fuel containing Pu
- Heavy water production, and H isotope separation, when the technology or process has reasonable potential for large-scale separation of deuterium (²H) from Protium (¹H)
- Development, production or use of a production accelerator-driven subcritical assembly system
- $\checkmark\,$ Development, production or use of a production reactor
- ✓ Reprocessing of irradiated nuclear fuel or targets containing SNM
- Exception under § 810.6(g) Production of Mo-99 under specified conditions



Activity Classification – General or Specific Authorization?



Is the Destination Listed in Appendix A?





Special Provisions Regarding Ukraine (810.14)

- Even though Ukraine is a GA destination, exports to Ukraine are subject to special reporting requirements.
 - These pre-notification requirements do not apply to deemed exports to Ukrainian citizens/nationals.



- Pre-Activity Notification: to be provided at least 10 days before beginning an activity.
 - Name, address, and citizenship of the person submitting the notification;
 - Name, address, and citizenship of the person for which the activity is to be performed;
 - A description of the activity, the date it is proposed to begin, its location, status, and anticipated date of completion; and
 - Written assurances that the end-user has agreed with the person that is to perform the activity that the end-user will not retransfer the technology to a non-Appendix A country.
- Post-Activity Reporting: to be provided within 10 days after the transfer is complete.
 - Written confirmation that transfer was completed consistent with what was described in the pre-activity notification (See Slide 48 for reporting requirements).

9/17/2019



Activity Classification – General or Specific Authorization?



Does the End-User Qualify as a Generally Authorized Deemed Export (GADEX) § 810.6(b))?

OK

Foreign National

of country not listed on Appendix A

is <u>lawfully employed by or contracted</u> to work for a U.S. employer in the United States at an NRC-licensed facility.

AND

executes <u>a confidentiality agreement</u> with the U.S. employer to safeguard Part 810-controlled technology from unauthorized use or disclosure

AND

has been granted unescorted access in accordance with NRC regulations at the NRC-licensed facility in question

AND

The foreign national's U.S. employer authorizing access to the technology <u>complies with the reporting</u> <u>requirements in § 810.12(g)</u>

U.S. Employer

report to DOE that the foreign national's access has been granted to the facility in question.

AND

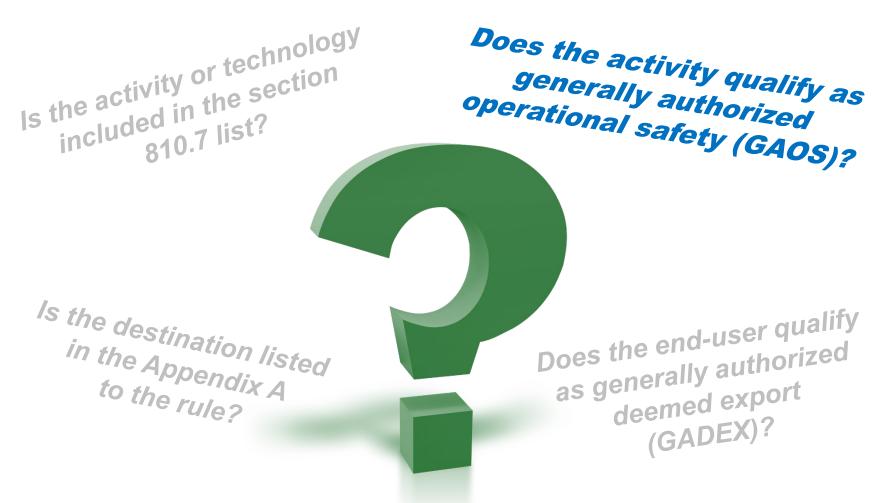
U.S. employer has adequate controls to prevent improper use or disclosure of the transferred technology that will be generally authorized

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Activity Classification – General or Specific Authorization?





Does the Activity Qualify as Generally Authorized Operational Safety (GAOS)?

- Fast Track GAOS activities § 810.6c
- Covers three types of activities at safeguarded or NRC-licensed facilities:



GAOS

Operational Safety Outside the U.S. § 810.6(c)(2)

- 45 day notice to & approved by DOE/NNSA
- Existing IAEA safeguarded civilian reactors
- Standard GA reporting after activity begins



GAOS

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Operational Safety Inside the U.S. § 810.6(c)(3)

- 45 day notice to & approved by DOE/NNSA
- Any existing or proposed new-build civilian nuclear facility in the U.S
- Standard GA reporting after activity begins



GAOS Radiological Emergency § 810.6(c)(1)

- Potential or actual imminent radiological danger to off-site population
- Notify DOE/NNSA as soon as possible before beginning activity
- If DOE/NNSA does not object within 48 hours, activity can proceed
- Post activity GA standard reporting required



Other GA Activities

§ 810.6(d)

Participation in exchange programs approved by DOS in consultation with DOE/NNSA



§ 810.6(e)

Activities carried out in the course of implementation of the "Agreement between the United States and IAEA for the Application of Safeguards in the United States"



§ 810.6(f)

Activities carried out by persons who are full-time employees of the IAEA or whose employment by or work for the IAEA is sponsored or approved by DOE/NNSA or DOS

NONPROLIFERATION

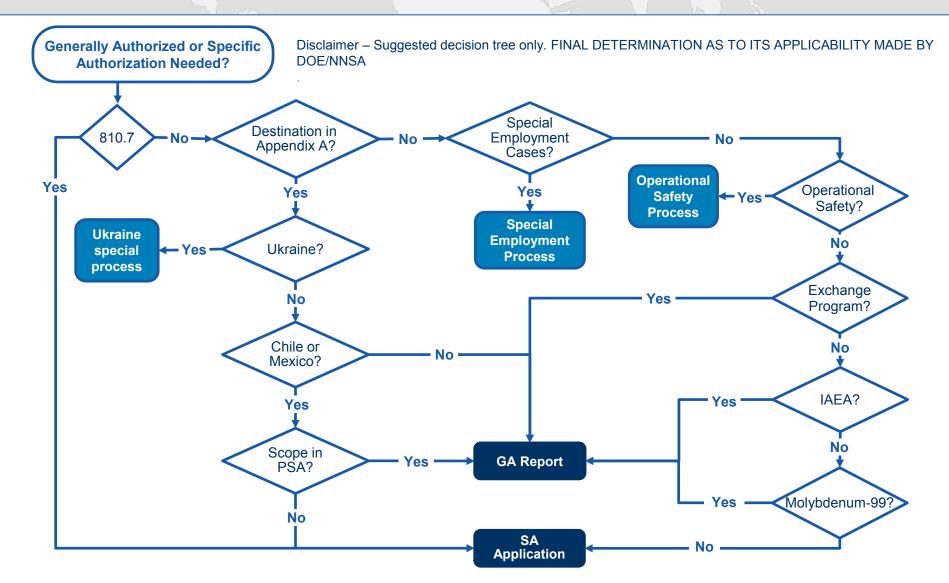
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IAEA International Atomic Energy Agency



GA or SA Decision Process Overview





GA Reports (§ 810.12 (e))

Each person, within 30 calendar days after beginning any GA activity, must provide to DOE:



- 1. Information about person submitting the report
 - ✓ Name
 - ✓ Address
 - ✓ Citizenship

2. Information about person for whom or which the activity is being performed

- ✓ Name
- ✓ Address
- ✓ Citizenship

3. Activity details

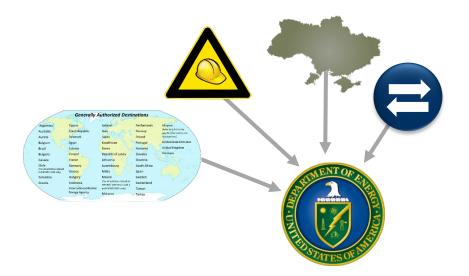
- ✓ Description
- ✓ Date activity began
- ✓ Location of activity
- ✓ Status
- ✓ Anticipated date of completion

4. A written assurance that:

the applicant has an agreement with the recipient ensuring that any subsequent transfer of materials, equipment or technology transferred under GA when the conditions in § 810.6 would not be met will take place only if the applicant obtains DOE's prior written approval.

GA Reports (cont.)

- Individuals engaging in GA activities as employees of persons required to report are not themselves required to submit the reports. (§ 810.12 (f))
- DOE/NNSA policy is that persons engaging in activities under a GA do not need to file a termination or completion report unless directed to do so by DOE/NNSA.



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GA Reports – Deemed Exports

Reports on technology transfers to employees

MUST REPORT

Employers <u>do</u> have to report when they make transfers to foreign nationals that are generally authorized. Do not have to report

Employers <u>**do not**</u> have to report transfers to employees who are:

- U.S. citizens (including dual citizens)
- Lawfully admitted permanent residents
- Individuals protected under the Immigration & Naturalization Act



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Information to Include in Applications for a Specific Authorization

For Transfers to Foreign Entities and Destinations



Applying for a Specific Authorization – § 810.11(a) or (b)

Required information:



Applicant/Information



Recipient Country and End-User Information



Project Description – including description of the project and the assistance or technology to be provided



Applying for a Specific Authorization – Applicant Information § 810.11(a)(1)



- 1. Name
- 2. Address
- 3. Citizenship of the applicant
- 4. Complete disclosure of all real parties in interest.
- 5. If the applicant is a corporation or other legal entity
 - a. Location where it is incorporated or organized
 - b. Location of its principal office
 - c. Degree of any foreign control



Types of Entities Requiring Specific Authorization to Receive Controlled Technology

Foreign Entities

- Companies
- Non-U.S. affiliates of U.S. companies
- Governments
- Universities
- National Labs

Foreign Nationals

- Foreign nationals of non-GA countries
 - Employees
 - Contractors
- Could be in United States or NOT



Applying for a Specific Authorization – End-User Information § 810.11(a)(2)



End-User Information

- 1. Each country/entity to receive the assistance/technology
- 2. Name and location of **all** facilities and/or projects involved
- 3. Name and address of the person for which or whom the activity is to be performed
- 4. It is also helpful to provide a foreign government point of contact (POC) for the activity to be performed



Applying for a Specific Authorization – Assistance Description § 810.11(a)(3)



Project Information

- 1. Description of the assistance or technology to be provided, including a complete description of the proposed activity and its approximate monetary value
- 2. Detailed description of any specific project to which the activity relates

Suggested Additional Information

- 1. Description of the contractual terms of proposed activity
- 2. Discussion of any risk mitigating factors



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Additional Information to Include in an Application for a Specific Authorization

Deemed Exports



Applying for a Specific Authorization – Foreign National Information § 810.11(b)



Foreign National Information

- 1. Name
- 2. Citizenship (all countries)
- 3. All countries where the individual has resided for more than 6 months
- 4. Training/educational background
- 5. All work experience
- 6. Affiliations with persons engaged in Part 810controlled activities
- 7. Immigration or visa status in the U.S.
- 8. Foreign national's signed statement of compliance, non-disclosure and peaceful use commitment



Applying for a Specific Authorization – Assistance Description § 810.11(b)



Assistance Information

- 1. Description of the assistance or technology to be made available
- 2. Purpose of the proposed transfer
- 3. Description of the applicant's technology control program
- 4. Any NRC standards applicable to the employer's grant of access to the technology



Specific Authorization Application Process





DOE Assessment of Application for a Specific Authorization

§810.9(b) Factors considered for Secretarial Determination

- 123 Agreement in force?
- Party/adheres to the NPT?
- In good standing with acknowledged nonproliferation commitments?
- In full compliance with its obligations under the NPT?
- Accepted IAEA safeguards obligations on all peaceful use nuclear materials?
- Existence of other controls on the proposed activity, including duly authorized recipient?

- Significance of transfer relative to the existing nuclear capabilities of the country.
- Part of an existing cooperative enrichment enterprise or its supply chain?
- Availability of comparable assistance or technology from other sources?
- Any other factors that may impact political, economic, competitiveness, or security interests of the United States,
- Additional factors apply for proposed SNT transfers § 810.9(c)



Specific Authorization – Reporting Requirements – § 810.12(a)

Initial report within 30 calendar days after beginning a specifically authorized activity, must include:

- The name, address, and citizenship of the person submitting the report;
- The name, address, and citizenship of the person for whom or which the activity is being performed;
- A description of the activity, the date it began, its location, status, and anticipated date of completion; and
- A copy of the DOE/NNSA letter authorizing the activity.



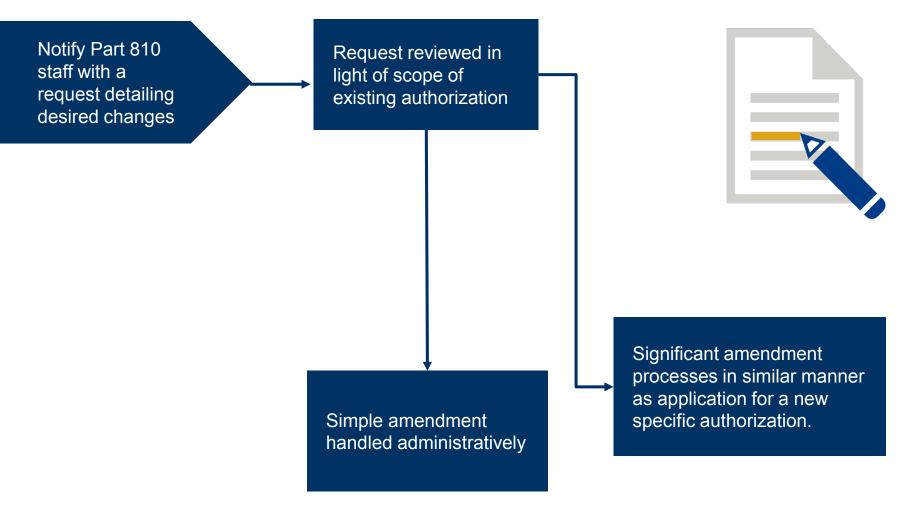


Specific Authorizations – Termination Report § 801.12(b)

- Exporter files a report within 30 calendar days after the activity is terminated, completed or abandoned.
- DOE/NNSA requests that all reports provide a reason for and effective date of termination.



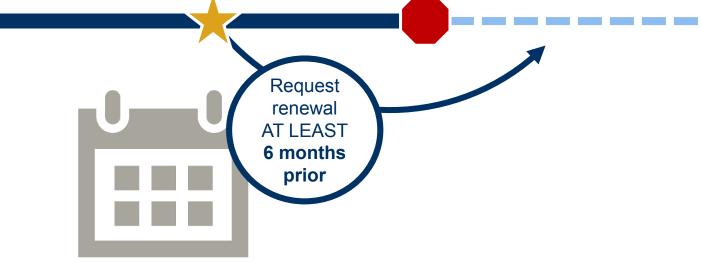
Specific Authorization – Amendment Process



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Specific Authorization - Renewals

- All SAs are granted for a specific term.
- As a best practice, a request for renewal should be submitted to DOE/NNSA not less than 6 months prior to the expiration of the current authorization (even then, DOE/NNSA cannot guarantee that a renewal will be completed before expiration).





Requesting Interpretations § 810.5

- Contact DOE/NNSA team:
 - Part810@nnsa.doe.gov
 - (202) 586-1007
- Include in request:
 - Requestor information
 - Proposed activity
 - Type of guidance sought
 - Technical assistance or informal guidance (nonbinding advice from DOE/NNSA staff)
 - Request for determination (binding determination made by DOE/GC)





is up and running to help you comply with Part 810 requirements!



- Submit applications online
- Track applications
- Manage workflow
- Find ongoing Part 810 activities and reports in one place

Our office

https://nnsa.energy.gov/aboutus/ourprograms/ nonproliferation-0/npac/policy/10cfr810

e810 https://e810.energy.gov/

FAQs

https://nnsa.energy.gov/sites/default/files/nnsa/inlinefiles/ nei_faqs_final_9-12-16_final_gc-53_adh.pdf

Guidance

https://nnsa.energy.gov/sites/default/files/nnsa/inlinefiles/ Guidance_to_the_Revised_Part_810_Regulation_0.pdf

e810 FAQs

https://e810.energy.gov/FAQ/Index

Register at https://e810.energy.gov

Questions? Contact:

PART810@nnsa.doe.gov

202-586-1007