

U.S. Nuclear Export Controls and Proposed Changes to the Part 810 Regulations

DC ANS Speaker Series

Ajay Kuntamukkala & Darshak Dholakia
Hogan Lovells US LLP

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Agenda

- Overview of Nuclear Export Controls
- Structure of Legal Regime
 - DOE Part 810 Regulations: Current and Proposed Revisions
 - NRC Part 110 Regulations
 - DOC Regulations
- Section 123 Agreements
- Other Current Issues
- Questions?

Overview of Nuclear Export Controls

- *Why are they relevant?*
 - U.S. companies may need to work collaboratively with non-U.S. companies during the course of a project
 - U.S. companies may have foreign national employees or consultants
 - U.S. companies may have foreign affiliates that participate in projects for U.S. nuclear power clients
 - U.S. companies may have projects abroad
 - International suppliers with projects in the United States may need to receive U.S.-origin controlled technology
 - International suppliers may also establish U.S. offices
 - DOE or Defense Department contractors

Overview of Legal Framework

- Multiple international agreements and organizations restrict the export of nuclear equipment, material, and technology, including:
 - Treaty on the Non-Proliferation of Nuclear Weapons (NPT)
 - International Atomic Energy Agency Safeguards Agreement
 - Nuclear Suppliers Group
 - Zangger Committee
 - Wassenaar Arrangement
- U.S. statutes and bilateral agreements also provide authority for domestic export control regulations, including:
 - Atomic Energy Act
 - Nuclear Non-Proliferation Act of 1978
 - Bilateral Agreements on Peaceful Nuclear Cooperation (Section 123 Agreements)
 - Other authorities include IEEPA, AECA, EAA (expired)

Overview of U.S. Export Control Laws

- U.S. export control laws and regulations:
 - Define whether and under what conditions U.S.-origin goods, software, technology and services may be legally exported or re-exported to specific destinations or persons
 - Prohibit or restrict certain types of activities by U.S. companies and U.S. individuals
 - Are extra-territorial and follow U.S.-origin goods, software and technology, when located abroad and handled by non-U.S. persons
- Support the U.S. Government's objectives of protecting U.S. national security and furthering foreign policy interests
- U.S. nuclear export controls are administered by various agencies, including the Nuclear Regulatory Commission, Department of Energy, Department of Commerce, and Department of State
- Other countries also have export controls – this is a global issue

Penalties

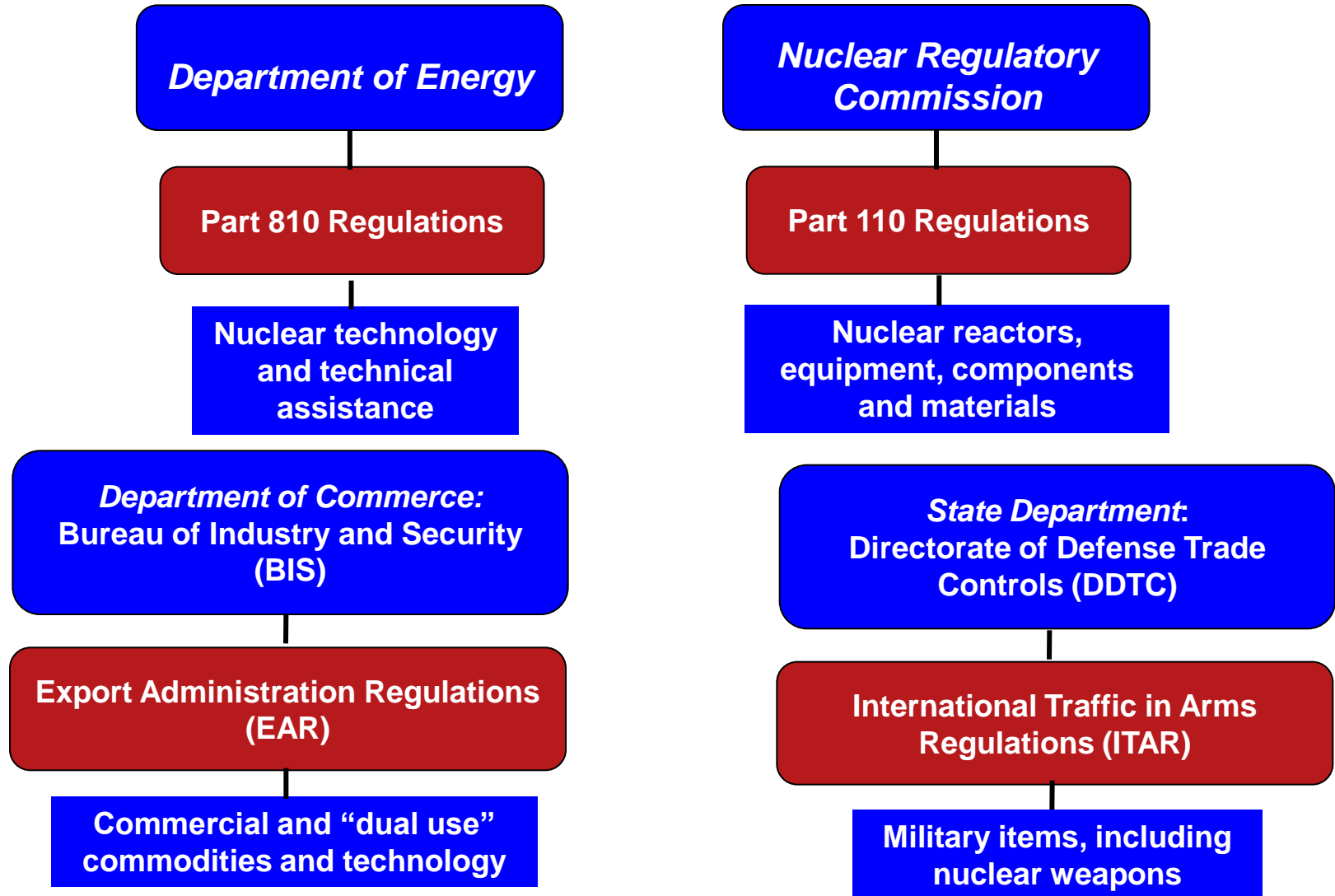
- Severe criminal and civil risks are associated with the improper export and re-export of controlled goods, technology, software or services
- The U.S. Government has discretion to impose severe penalties, including
 - Up to \$1 million per violation in fines and imprisonment for individuals
 - Up to \$1 million per violation in fines for companies
 - Suspension or loss of export privileges, and debarment from government procurements for companies
- Reputational risk should also be considered

Controlled Transactions

- Transfers of nuclear-related technology to non-U.S. persons located in the United States or worldwide (e.g., transfer of nuclear design information to a foreign national employee or consultant located in the United States)
- Consulting and engineering services, technical assistance or training to foreign countries or foreign persons regarding engineering, construction, and design of nuclear reactors and fuel cycle plants
- Export or re-exports of nuclear reactors, components, equipment, software, nuclear material, as well as “dual-use” items
- Imports of nuclear reactors, components, equipment, and nuclear material

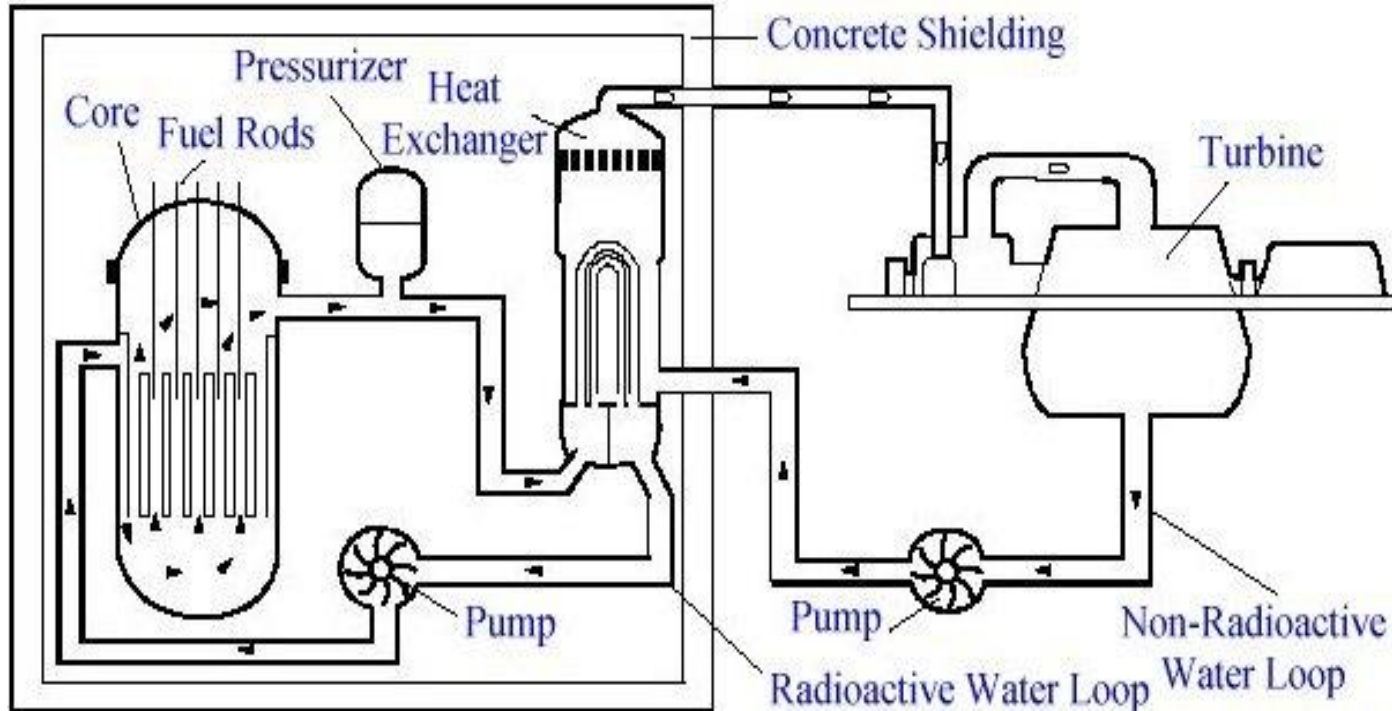


Structure of U.S. Nuclear Export Controls



Nuclear Power Facility

Simplified Rendering of a PWR



Nuclear Steam Supply System (NSSS)

“Balance of Plant”

Jurisdictional Summary

- In very summary terms:
 - NRC**: NSSS items - nuclear reactors, other nuclear facilities, materials and related items
 - DOE**: NSSS technology, software and services
 - DOC**: “Balance of plant” technology or items
 - DOS**: Nuclear weapons and naval nuclear propulsion technology and items

Jurisdictional issues must be reviewed on a case-by-case basis given the ambiguity of the regulations

CURRENT PART 810 REGULATIONS

DOE Part 810 Regulations

- The DOE administers controls over the export of technology related to “special nuclear materials” through its Part 810 Regulations (10 C.F.R. Part 810)
- Examples of controlled activities include:
 - Exports of any technology, software and assistance (including services and training) related to nuclear reactors, and related equipment and components
 - Exports of any technology, software and assistance related to nuclear fuel cycle facilities, and related equipment and components
 - Exports of any technology and assistance related to special nuclear materials
- Controlled activities require either a General Authorization or Specific Authorization from DOE

DOE Regulations: General Authorization

- **General Authorization** - Permits exports or transfers of controlled technology, software or services without prior written authorization from DOE under limited circumstances
 - Advance notification to the DOE may be required depending on the nature of the activities at issue
 - Exports of technology, software or services related to nuclear power generation permitted to certain countries without prior written authorization; not available for:
 - “Restricted Countries”
 - “Sensitive nuclear technology”
 - Information related to the design, construction, fabrication, operation, or maintenance of production reactors, accelerator-driven subcritical assembly systems, enrichment, reprocessing, fabrication of nuclear fuel containing plutonium, production of heavy water, or research reactors, or test reactors

DOE Regulations: Specific Authorization

- Prior DOE approval required for all other controlled transactions not eligible for General Authorization, including:
 - Engaging in any activities related to production of special nuclear material involving “restricted countries” (unless permitted under a general authorization)
 - Engaging in any activities involving “sensitive nuclear technology” in any foreign country
 - Engaging in or providing assistance or training to any foreign country with regard to the design, construction, operation or maintenance of
 - production reactors;
 - accelerator-driven subcritical assembly systems, or facilities for the separation of isotopes of source or special nuclear material (enrichment);
 - chemical processing of irradiated special nuclear material (reprocessing);
 - fabrication of nuclear fuel containing plutonium; or
 - the production of heavy water

DOE Regulations: Specific Authorization

- Applications for specific authorization must be submitted to DOE, which may approve an application if it decides, with the review of other agencies, that the application is “not inimical” to the interest of the United States
- In making this determination, DOE will take into account a number of factors, including:
 - Whether the United States has an agreement for nuclear cooperation with the nation(s) involved
 - Whether the country involved is a party to the NPT, or a country for which the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) is in force
 - Whether the country involved has entered into a safeguards agreement with the IAEA
 - Whether the country involved, if it has not entered into such an agreement, has agreed to accept IAEA safeguards applicable to the proposed activity
 - Other factors based on U.S. political, economic, or security interests
- DOE generally seeks government-to-government assurances from the recipient country
- Timeline – Anywhere from 3 months to over one year

Part 810 Restricted Countries

§ 810.8 Activities requiring specific authorization.

Unless generally authorized by § 810.7, a person requires specific authorization by the Secretary of Energy before:

(a) Engaging directly or indirectly in the production of special nuclear material in any of the following countries. Countries marked with an asterisk (*) are non-nuclear-weapon states that do not have full-scope IAEA safeguards agreements in force.

Afghanistan
Albania
Algeria
Andorra*
Angola*
Armenia
Azerbaijan*
Bahrain*
Belarus
Benin*
Botswana*
Burkina Faso*
Burma (Myanmar)
Burundi*
Cambodia*
Cameroon*
Cape Verde*

Central African Republic*
Chad*
China, People's Republic of
Comoros*
Congo* (Zaire)
Cuba*
Djibouti*
Equatorial Guinea*
Eritrea*
Gabon*
Georgia*
Guinea*
Guinea-Bissau*
Haiti*
India*
Iran
Iraq*
Israel*
Kazakhstan
Kenya*
Korea, People's Democratic Republic of*
Kuwait*
Kyrgyzstan*
Laos*
Liberia*
Libya
Macedonia
Mali*
Marshall Islands*

Mauritania*
Micronesia*
Moldova*
Mongolia
Mozambique*
Niger*
Oman*
Pakistan*
Palau*
Qatar*
Russia
Rwanda*
Sao Tome and Principe*
Saudi Arabia*
Seychelles*
Sierra Leone*
Somalia*
Sudan
Syria
Tajikistan*
Tanzania*
Togo*
Turkmenistan*
Uganda*
Ukraine
United Arab Emirates*
Uzbekistan
Vanuatu*
Vietnam
Yemen*
Yugoslavia

**SEPTEMBER 2011
PROPOSED RULE TO REVISE
PART 810 REGULATIONS**

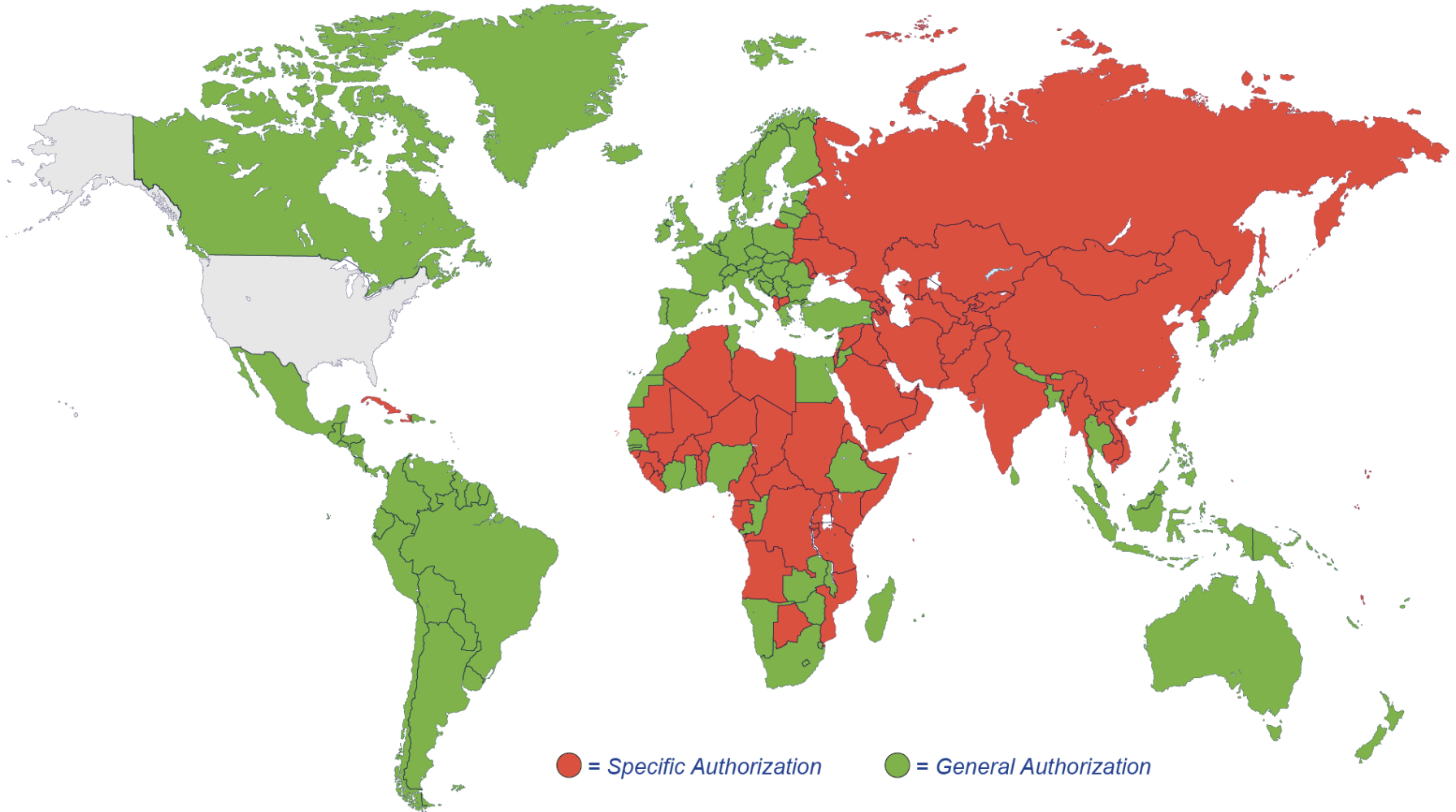
Proposed Revisions to DOE Part 810 Regulations

- On September 7, 2011, DOE published a proposed rule that would significantly revise the current structure of the Part 810 Regulations (76 Fed. Reg. 55278)
- With respect to the nuclear power industry, the most significant proposed changes relate to:
 - Changes in countries eligible for general authorization
 - Clarification of “deemed exports” of Part 810-controlled technology to non-U.S. persons located in the United States
 - Other changes
- DOE is expected to issue a revised version of the proposed rule in the near future

Proposed Changes to Countries Eligible for General Authorization

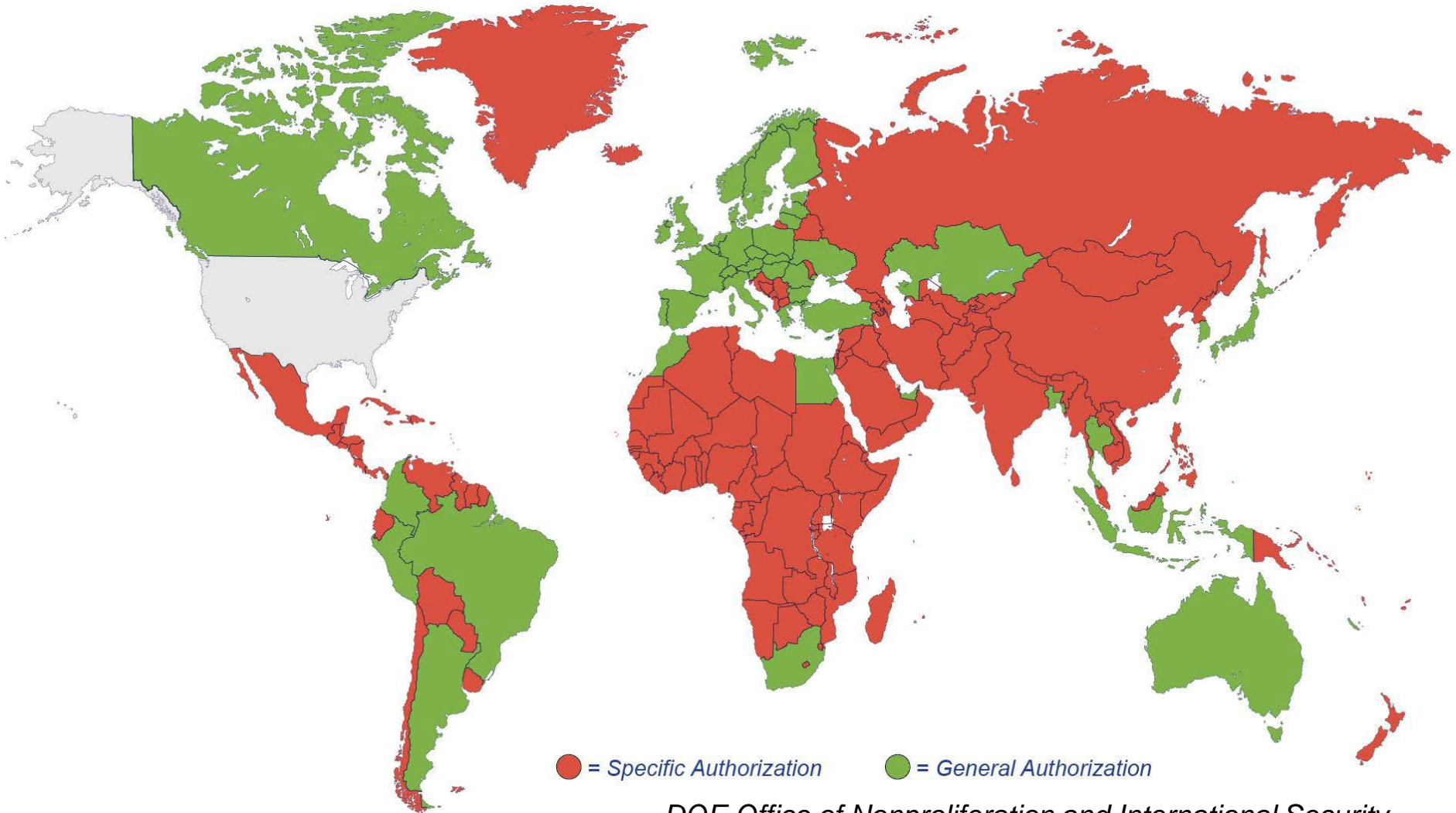
- Currently, the Part 810 Regulations identify a negative list of “Restricted Countries” in 10 C.F.R. 810.8(a) for which a specific authorization is required, meaning that U.S. persons must receive approval from the DOE prior to engaging in the covered activity
 - The proposed rule would remove the list of “Restricted Countries” and instead include a positive list of countries that are eligible for general authorization
- Certain countries that currently are considered to be “restricted countries” would be eligible for general authorization under the proposed rule, including Kazakhstan, Ukraine, and the UAE (all of which have Section 123 Agreements with the United States)
 - However, certain countries that currently are eligible for general authorizations (as a result of not being identified as "restricted countries") do not appear on the proposed list of countries eligible for general authorization, including Mexico and the Philippines

Country Restrictions Under Current Part 810 Regulations



- DOE Office of Nonproliferation and International Security

Country Restrictions Under Proposed Revisions to Part 810 Regulations



● = Specific Authorization ● = General Authorization

- DOE Office of Nonproliferation and International Security

Deemed Exports Under Proposed Part 810 Revisions

- “Deemed exports” involve the release of controlled technology to non-U.S. persons located in the United States
- Consistent with current DOE practice, the proposed rule formally states that the Part 810 Regulations apply to transfers of technology to foreign nationals located in the United States, in addition to assistance and technology provided to foreign persons located outside of the United States
 - The DOE formally has confirmed that foreign nationals who are legal permanent residents of the U.S. (green card holders) or are protected persons, such as asylees, are not considered "foreign persons" and do not require specific authorization

Deemed Exports Under Proposed Part 810 Revisions

- For transfers of technology to foreign nationals that require specific authorization (based on the nationality of the employee or the technology at issue), the rule contains a list of information that must be provided for the foreign national at issue, including:
 - Background information regarding the employee
 - A description of the technology
 - The purpose of the proposed release
 - Copies of confidentiality agreements and assurances from the foreign national regarding compliance with the Part 810 Regulations

Other Revisions

- The proposed Part 810 revisions would expressly include certain additional technologies within the scope of Part 810:
 - Transportation and storage of irradiated nuclear materials, including specially designed containers for such purposes (which are currently on the Commerce Department's Commerce Control List)
 - Hot cell facilities (shielded nuclear radiation containment chambers)
 - Processing of high-level radioactive waste
- Revised/new factors for specific authorizations (including for uranium enrichment related requests)
- Grandfathering/savings clause
- Time limit (5 years) on specific authorizations

Open Issues in Proposed Part 810 Revisions

- The proposed rule does not explicitly address a number of important issues that affect U.S. and non-U.S. nuclear companies, including:
 - Treatment of dual/third-country national employees
 - Deemed re-exports
 - Visits to nuclear power production facilities in the United States by foreign nationals
 - “Americanization” of foreign technology
 - “Foreignization” of U.S.-origin technology
 - No de minimis rule for commingled technology
- Some of these issues may be addressed in the revised proposed rule or through other channels

NRC Regulations

- The NRC regulates the export and import of nuclear reactors, other nuclear facilities, related equipment and certain nuclear material (10 C.F.R. Part 110)
 - Exports of related technology and software subject to DOE not NRC control
- In general, the NRC requires export/import licenses for the export/import of **nuclear reactors**, certain **plants or facilities related to the nuclear fuel cycle**, related **assemblies or components** and certain **nuclear materials**
- The NRC has two types of licenses: a General License and a Specific License
 - Under certain limited circumstance, a General License under the NRC Regulations authorizes selected exports or imports without the need to request written authorization
 - For all other exports of items subject to NRC jurisdiction, a Specific License is required from the NRC

Commerce Department Regulations

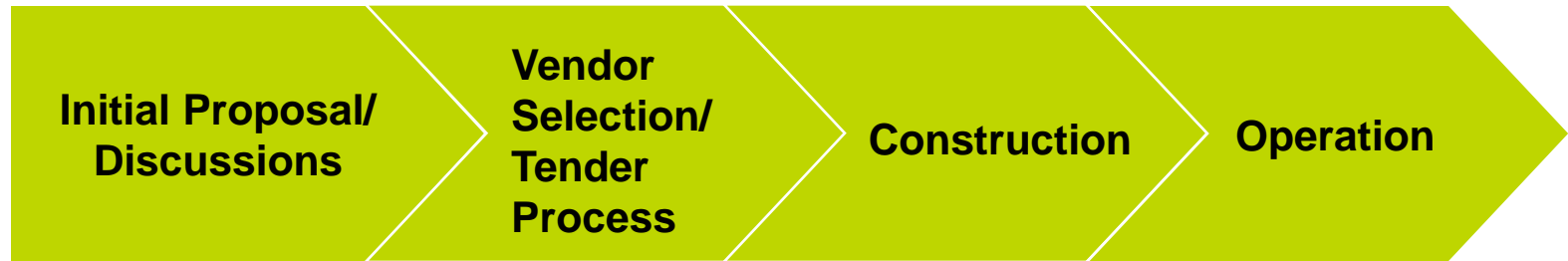
- Under the Export Administration Regulations (“EAR”), the Commerce Department has jurisdiction over the export of “dual-use” commodities, software or technology, including certain items related to nuclear power activities (“balance of plant”) such as:
 - Certain valves controlled for nuclear nonproliferation reasons (ECCN 2A226)
 - Generators, turbines and other equipment specially designed, prepared, or intended for use with nuclear plants (ECCN 2A290)
 - Snubbers, airlocks, pumps and other parts specially designed for use with nuclear plants, including N-stamped components (ECCN 2A291.d)
 - Technology and information related to the development, production, or use of these items (e.g., ECCNs 2E001, 2E002, 2E201, and 2E290)
- Depending on the nature of the commodities, software or technology at issue, they may be controlled at different levels (e.g., NP column 1 or NP column 2)



Commerce Department Regulations (cont.)

- The Commerce Department controls certain items and technology for nuclear nonproliferation reasons, including:
- **Licensing** - Whether a particular commodity, software or technology subject to the EAR requires an export license depends on
 - the export classification of the item (“ECCN”),
 - its reason for control, and
 - the destination country or foreign person at issue
- **End-Use Controls** – Except for certain countries, a license is required to export ANY items or services subject to the EAR that will be used directly or indirectly in support of certain restricted nuclear end uses (e.g., any nuclear weapons activities, any activities with unsafeguarded nuclear facilities, and certain nuclear fuel cycle activities)
- **Restricted Parties Lists** – A license is required to engage in transactions with entities listed on the Specially Designated Nationals List, Entity List, Denied Persons List and other similar lists maintained by the U.S. Government

Lifecycle of a Foreign Nuclear Power Project



DOE:	Specific Authorization for Nuclear Technology/Services (if Required)	Specific Authorization for Nuclear Technology/Services	Specific Authorization for Nuclear Technology/Services	Specific Authorization for Nuclear Technology/Services
NRC:			Specific License for Nuclear Reactors, Equipment and Nuclear Material	Specific License for Nuclear Reactors, Equipment and Nuclear Material
DOC:	Licenses for Dual-Use Technology, if Required	Licenses for Dual-Use Technology, if Required	Licenses for Dual-Use Commodities, Software and Technology, if Required	Licenses for Dual-Use Commodities, Software and Technology, if Required

Applies to Transactions with **Customers, Suppliers, Contractors/Subcontractors,** and **Foreign National Employees**

Section 123 Agreements

- The U.S. must negotiate bilateral “Section 123 Agreements” to establish a legal framework for cooperation and commerce in civilian nuclear energy with foreign countries
- The U.S. currently has 123 Agreements with over 20 countries
- However, the fact that a Section 123 Agreement has been negotiated does not authorize the release of controlled technology to these countries or foreign nationals of these countries
 - Licenses or other authorizations may be required from the NRC, DOE or DOC
 - Substantive discussions with foreign persons can involve the release of controlled technology
 - Basic marketing information, cost data, or scheduling information generally does not constitute controlled technology



Section 123 Agreements (cont.)

- List of current Section 123 Agreements:

Argentina	Colombia	Thailand	South Africa
Australia	Egypt	Turkey	South Korea
Bangladesh	European Atomic Energy Committee (EURATOM)*	Japan	Switzerland
Brazil	India	Kazakhstan	Taiwan
Canada	Indonesia	Morocco	Ukraine
China	International Atomic Energy Association (IAEA)	Norway	UAE

* EURATOM is composed of the following Member States: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom

Section 123 Agreements (cont.)

- The U.S. Government currently is in negotiations for three new Section 123 Agreements with:
 - Jordan
 - Saudi Arabia
 - Vietnam
- In addition, a number of existing Section 123 Agreements will expire in the next few years and must be renewed, including agreements with:
 - South Korea
 - China
 - Taiwan
- The main issue for future negotiations related to Section 123 Agreement is whether the partner country will agree to forego enrichment and reprocessing technology, which is the preferred approach by the U.S. Government

Other Current Issues

- Determining jurisdiction between agencies for nuclear-related equipment, components, software and technology
- Deemed exports
- “Americanization” of foreign-origin technology
- “Foreignization” of U.S.-origin technology
- Compliance programs

QUESTIONS?

Ajay Kuntamukkala

Partner

Hogan Lovells US LLP

202-637-5552

ajay.kuntamukkala@hoganlovells.com

Darshak Dholakia

Associate

Hogan Lovells US LLP

202-637-3588

darshak.dholakia@hoganlovells.com

www.hoganlovells.com

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