



Deemed Exports & Technology Transfers: The Great Unauthorized Escape

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Deemed Exports and Technology Transfers

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Deemed Exports

- Obtain a license before releasing controlled technology to a foreign person.
- Releases of controlled technology to foreign persons in the U.S. are “deemed” to be an export to the person’s country or countries of nationality (EAR 734.13).



Deemed Exports: What is being targeted?

Nationally

- Biotechnology
- Pharmaceuticals
- Nanotechnology
- Quantum Computing
- Advanced Materials
- Communications & Encryption Technology
- Weapons Systems



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Methods Used to Target Technology

- Hacking/computer intrusions
- E-mail/telephone requests
- Compromise of laptop/phone while traveling overseas
- Surveillance of U.S. travelers while abroad
- Visits by scientific, research, & governmental delegations
- Attending/hosting conferences/trade shows



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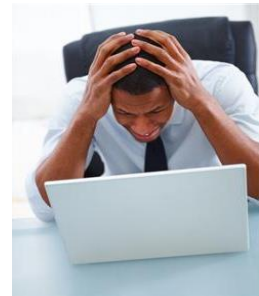
Evolving Threats & Tradecraft

- Incentives to relocate R&D facilities overseas
- Joint ventures involving foreign entities
- Liaisons with universities that have ties to defense contractors
- Offers to provide marketing services in order to gain access/entry
- Recruitment by foreign intelligence services in various guises
- Red Flags/Know Your Customer: Illegitimate companies, insufficient customer knowledge of technology, multiple intermediate parties

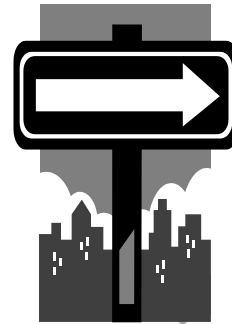
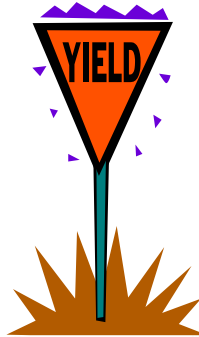


Recurring Compliance Issues

- Poor communications or disconnect with:
 - 1) Export Compliance Personnel,
 - 2) Human Resources,
 - 3) Hiring Managers.
- Lack of compliance training for handling foreign visitors.



**For Certain Nonimmigrant Worker Petitions
(DHS USCIS Form I-129): Certification for
Release of Controlled Technology to Foreign
Persons in the U.S. Must be Submitted**



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**Balancing U.S. Export Control Laws
with U.S. Antidiscrimination Laws**

**DOJ's 2016 hiring guidance for positions involving access
to EAR- or ITAR-controlled information:**

Employer may inquire about immigration status if:

- All applicants for that position are asked, &
- Such inquiry is only for compliance with export-licensing regulations.



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Case Studies/ Scenarios



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Deemed Exports in the Nuclear & Missile Technology Industries

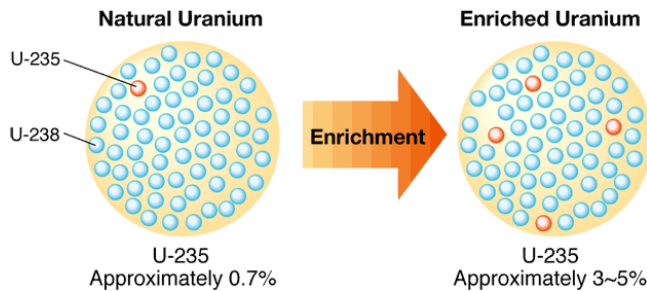
Tongele Tongele, General Engineer
Nuclear & Missile Technology Controls Division





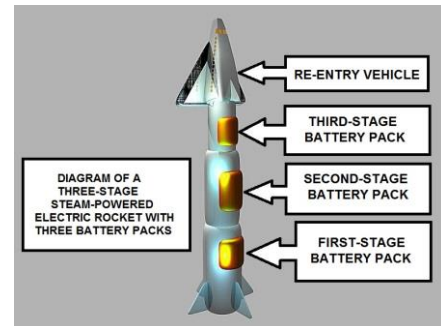
Nuclear and Missile Technology : A Great Unauthorized Escape About to Happen

Uranium enrichment



(<https://www.google.com/search?q=uranium+enrichment+picture>)

Multi-stage rocket



(<https://www.google.com/search?q=multi+stage+rocket+pics>)

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Nuclear Technology: Not an Easy Thing to Achieve

It is believed that Iran started its clandestine uranium enrichment program as early as 1992

(<https://www.bloomberg.com/quicktake/irans-uranium-enrichment>)



Iranian President Mahmoud Ahmadinejad visits the Natanz enrichment facility in 2008

(<https://www.timesofisrael.com/iran-plans-to-upgrade-uranium-enrichment-at-natanz/>)

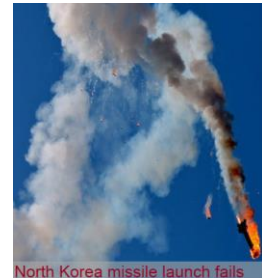
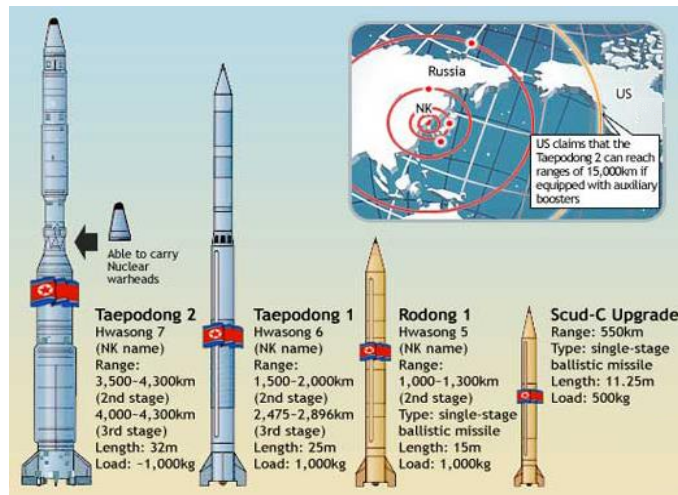
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Nuclear Technology: Not an Easy Thing to Achieve

North Korea's
multistage
rocket system

http://www.salem-news.com/articles/april042009/no_korean_rocket_4-4-09.php



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Stealing Nuclear / Missile Technology: Easy Way Out?

Accelerator Laboratory
for reactor-like
conditions simulation

Texas A&M
University's Department
of Nuclear Engineering

(<https://www.bing.com/images/search>)



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U.S. Educational Institutions

Best and brightest minds come from all over the world to attend U.S. educational institutions for engineering, science and technology

- The number of international students attending *U.S.* universities continues to increase
(<http://graphics.wsj.com/international-students/>)
- More foreign-born scholars lead U.S. Universities
(<https://www.nytimes.com/2011/03/10/education/10presidents.html>)
- Foreign nationals hold half of all U.S. patents annually
(<https://www.inc.com/jeremy-quittner/foreign-patents-and-united-states-innovation.html>)
- More U. S. scientists and engineers are foreign-born
(<https://www.prb.org/usforeignbornstem/>)

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Technology not Subject to the EAR

- **Published (EAR 734.7)**
 - Generally accessible to the interested public
 - Periodicals, books, print, electronic other media forms
 - Libraries (university, public, etc.)
 - Open conferences
- **Fundamental Research (EAR 734.8)**
 - Basic and applied research where resulting information is ordinarily published and broadly shared within scientific community
 - “Technology” or “software” that arises during, or results from, fundamental research and is intended to be published
- **Patent information (EAR 734.10)**
 - Published information available on patent applications

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Deemed Export as a Balancing Act

The vital role of foreign nationals in U.S. industry and academia

Foreign countries that seek to illegally acquire U.S. controlled technology/software through their nationals living, studying and/or working in the U.S.

How to prevent the diversion of sensitive dual use technologies through foreign nationals to countries and end users of concern while attracting bright minds from all over the world in U.S. academia and high tech industries?

Promote

Deemed export = A balancing act

Prevent

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Escape Case Analysis: Iranian PhD student in Nuclear Engineering, U. S. University

Nomenclature:

- Pharmaceutical company: Pharma Inc.
- Professor of Nuclear Engineering: Professor Nuc Smart
- Iranian PhD student: Ira Student
- Research Laboratory: Isotope Lab
- Research Lab ID: Isotope ID

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Escape Case Analysis: Iranian PhD student in Nuclear Engineering, U. S. University

Research Project:

- Pharma Inc. signed a research agreement with a U.S. university for the “Development of special radioisotopes that must emit gamma rays at a specific energy level for very rapid decay very soon after imaging is completed”
- Professor Nuc Smart, Department of Nuclear Engineering, is the main investigator
- Isotope Lab is the laboratory where the research project is to be conducted
- All students taking part in this research are to be U.S. nationals and must use Isotope ID to access the lab, and special passwords to access computers and equipment to be used for the research

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Escape Case Analysis: Iranian PhD student in Nuclear Engineering, U. S. University

Things to know about Isotope Lab:

- A highly sensitive high-tech lab where cutting-edge research is conducted. Multiple student teams work on multiple research projects in Isotope Lab simultaneously.
- Proper signs for secure area are displayed all over: no phone, no camera, no personal storage device or electronics in this area.
- Researchers must show student picture ID plus Isotope ID to access the Isotope Lab.
- Once inside, students must have codes and multiple passwords for computers and equipment access.
- Students in Isotope Lab often know only their team members.
- A student in Isotope Lab is assumed to have gained access through proper credentials and procedures.
- The name for Professor Nuc Smart is prominently displayed as Lab director, with contact information.

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Escape Case Analysis: Iranian PhD student in Nuclear Engineering, U. S. University

The Great Unauthorized Escape:

- Ira Student has a student picture ID, but has no Isotope ID, no codes or password used in Isotope Lab.
- Ira Student cannot access Isotope Lab.
- Professor Nuc Smart is preparing a paper for presentation at the International Conference on Nuclear Medicine and Radiation Therapy.
- Professor Nuc Smart's paper is based on Pharma Inc.'s sponsored research project. It is routine for professors to publish papers inspired by, and/or based on, sponsored research projects, but after prior review and authorization by the sponsoring company.
- Professor Nuc Smart has asked Ira Student to review the final draft of his paper.

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Escape Case Analysis: Iranian PhD student in Nuclear Engineering U. S. University

Ira Student's Unauthorized Access to Controlled Technology:

- Ira Student approaches one of the students working with Professor Nuc Smart on Pharma Inc.'s sponsored project, and shows him Professor Nuc Smart's draft paper for the conference.
- Ira Student explains that Professor Nuc Smart tasked him with the review of the draft paper to ensure that no sensitive information is inadvertently released at the conference.
- Ira Student asks for Isotope ID, codes and passwords to access Isotope Lab in order to review the draft paper against the original project to ensure that no sensitive information is contained in the paper.
- Isotope Lab student provides Ira Student with the requested Isotope ID, codes and passwords.
- Ira Student gains access to Isotope Lab and successfully accesses the computers, and learns all about the project, the new technology, and everything else.
- Ira Student reviews Professor Nuc Smart's paper and gives it back to him ready for presentation at the international conference.

A great unauthorized escape has happened and probably no one will ever know about it.

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A Great Unauthorized Escape Has Happened

CNN Breaking News:

An astonishing revelation about Iran's uranium enrichment program:

It is believed that Iran has successfully developed "technology," according to the Nuclear Technology Note, for the "development," "production," or "use" of uranium isotopes; and it is now only a matter of weeks or months for Iran to put together a deployable atomic device.

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A Great Unauthorized Escape Has Happened

Could this have been prevented?

**What are the possible flaws and
how can they be fixed ?**

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Deemed Exports in the Information Technology Industry

Aaron Amundson, Director
Information Technology Controls Division



Scenario

- IT company wants to have an “open environment” to allow engineers to collaborate freely.
- Company wants few restrictions on sharing information.
- Company has exported controlled technology in categories 3, 4, and 5.



Possible “Escapes”

- Foreign nationals could obtain access to controlled technology without the company’s knowledge.
- Employee could obtain access to important technology and then work for competitor.
- Employee could obtain technology, go back to his/her home country, and use the technology in programs of concern.

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Analysis

- U.S. Government is looking more carefully at how companies are restricting access to controlled technology.
- Having a strong technology control plan and sharing it with the U.S. Government can help alleviate concerns.
- Companies should also ensure they are not over- or under-controlling their technology.
- There is some overlap between a company’s interest in IP protection and the U.S. Government’s interest in deemed exports.

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Deemed Exports in the Aviation Industry

Michael Tu, Engineer
Sensors and Aviation Division



Scenario Part 1

- An aircraft manufacturer is streamlining its supply base for parts and components, including machining and finishing.
- Discussions will take place at corporate headquarters in the U.S. and will include nationals of all Country Groups.
- Company has export controlled technology in categories 7 and 9.



Possible “Escapes”

- Will the discussions between engineers and technicians continue after the meeting?
- How were notes taken during the meeting?
- Did all participants agree to non-disclosure?
- What was the scope of the discussion?

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Scenario Part 2

- A local university has published work on an automated assembly robot.
- The university has released a video of the robot assembling generic parts that are similar, but not identical.
- The university believes the robot provides decreased production anomalies and greater production throughput.
- The manufacturer would like to work with the university to evaluate the use of this robot on their production floor.

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Possible “Escapes”

- Does the university have a deemed export compliance program?
- Are the nationalities of the lab members and other university staff known?
- How much proprietary information will the university need?

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Analysis

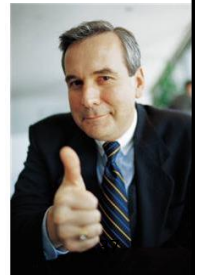
- The described scenarios are reasonable projects for a company to pursue.
- However, they introduce additional compliance questions.
- Classification of technology is the key.

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Technology Control Plan (TCP)

Essential elements:

- Management commitment to export compliance;
- Physical security plan;
- Information security plan;
- Personnel screening procedures;
- Training and awareness program;
- Self-evaluation program.



Technology Control Plan (TCP)

- Protect national security
- Protect company proprietary technical data essential to R&D
- Bring new products to market timely & efficiently

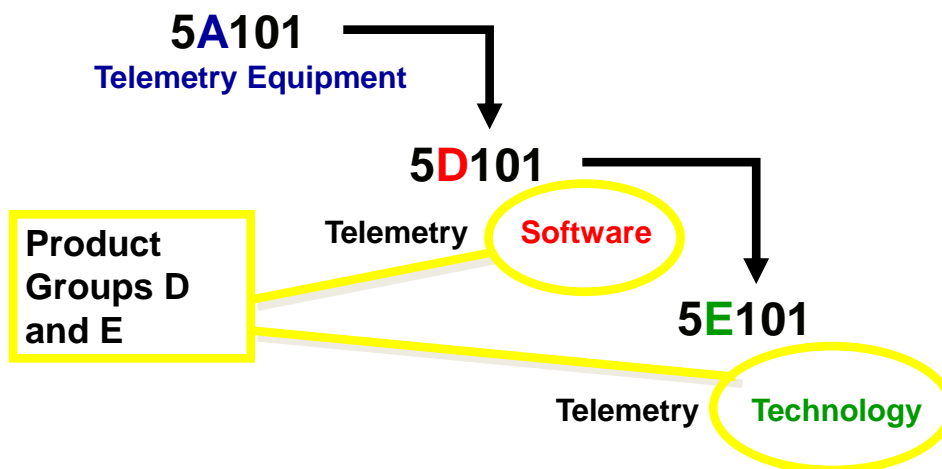


Recordkeeping for Communications with Foreign Nationals re: Controlled Technology

- Records should include:
 - Foreign party's name/nationality;
 - Organization;
 - Date of visit/exchange;
 - Company official involved in meeting/exchange;
 - Purpose, products or services discussed;
 - Visit/exchange summary;
- Establish SOP; document & maintain records of exchanges/meetings/communications.

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Technology and Software ECCNs: Have SOP for Classifications



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Special Topics Training Mo... x

<http://www.bis.doc.gov>

License Exception ENC Chart
Mass market Chart
Single country ELA standard conditions
Worldwide ELA CUESS condition

Deemed Exports Module:
Introduction to BIS Deemed Export Policies (35:24)
Transcript

Antiboycott Compliance Module:
Overview of the Antiboycott Provisions of the Export Administration Regulations (15:19)
Transcript

Note: These are full length Windows Media format videos narrated by BIS staff.
 Downloading may take a few minutes with certain internet connections.
 Please [email the BIS Webmaster](#) if you experience any difficulties.

The following archived webinar broadcasts are available for viewing free of charge. The slide presentation is also available in PDF format to download and print.

June 22, 2009
EAR Compliance Webinar in Automated Export System Electronic Export Information Filings
[Video](#) | [PDF](#)

May 28, 2008
Embargoes and Other Sanctions Webinar
[Video](#) | [PDF](#)

gov/index.php/policy-guidance/deemed-exports

Deemed Exports x

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 U.S. Department of Commerce
Where Industry and Security Intersect

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Deemed Exports

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 Deemed Exports FAQs
 Deemed Reexport Guidance
 Guidelines for Foreign National License Applications

Deemed Exports Links

DHS Non-Immigrant Form I-129 & Export Control Implications

 **Deemed Exports**

The obligation to obtain an export license from BIS before "releasing" controlled technology to a foreign person is informally referred to as a deemed export. Releases of controlled technology to foreign persons in the U.S. are "deemed" to be an export to the person's country or countries of nationality. "Deemed" exports are described in 734.13(b) of the EAR. Typical organizations using "deemed" export licenses include universities, high technology research and development institutions, bio-chemical firms, as well as the medical and computer sectors. Note that those organizations having persons with permanent residence status, U.S. citizenship, and persons granted status as "protected individuals" are exempt from the "deemed" export rule. 

Many of the licenses for "deemed" exports involve those conducting scientific research. Note that under section 734.8 of the EAR, fundamental research is defined as "basic and applied research in science and engineering where the resulting information is ordinarily published and shared broadly within the scientific community" and, as such, is exempt from EAR licensing requirements. Research conducted using publicly available information is also exempt from any license requirements.

The EAR defines a "release" of "technology" or source code in section 734.15 of the EAR, and defines activities that are not "deemed" reexports in section 734.20 of the EAR.



The screenshot displays the Bureau of Industry and Security (BIS) website. The header includes the BIS logo and the text "Bureau of Industry and Security U.S. Department of Commerce Where Industry and Security Intersect". A navigation bar contains links: Home, About BIS, Regulations, Licensing, Enforcement, Compliance & Training, Policy Guidance, Add'l Programs, Reform, and Data. The main content area is titled "Export Compliance Program (ECP)" and features a large banner for "Updated! Export Compliance Guidelines 2017". Below this, the text "Export Compliance Guidelines" is prominently displayed. The left sidebar, titled "Export Management & Compliance", includes a "Compliance Links" section with links to "Red Flags", "Know your Customer", and "Upcoming BIS Seminar Schedule". The right sidebar, titled "Contact Us", lists contact information for several staff members. A black box highlights the URL "www.bis.doc.gov/compliance" at the top of the main content area. Two red circles highlight the "Compliance Links" section on the left and the "ECP Resources" section on the right.

www.bis.doc.gov/compliance

Export Compliance Program (ECP)

Upcoming ECP Seminars

Updated! Export Compliance Guidelines 2017

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

Export Compliance Guidelines

The Elements of an Effective Export Compliance Program

Compliance Links

- Red Flags
- Know your Customer
- Upcoming BIS Seminar Schedule

ECP Resources

- Updated! Export Compliance Guidelines 2017
- Elements of an ECP
- Freight Forwarder Guidance
- Compliance Poster
- Upcoming ECP Seminars
- License Exception Strategic Trade Authorization (STA) Non-600 Series Sample Consignee Statement (per EAR § 740.20)



Questions/Comments/ Shared Experiences





THANK YOU!



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