

Export Control

Energy Facility Contractors Group Safeguards & Security Working Group



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Introduction to Export Controls and Strategic Dual-Use Goods

What are Export Controls?

Export Controls are designed to:

- Protect the National Security of the United States.
- Protect Foreign Policy.

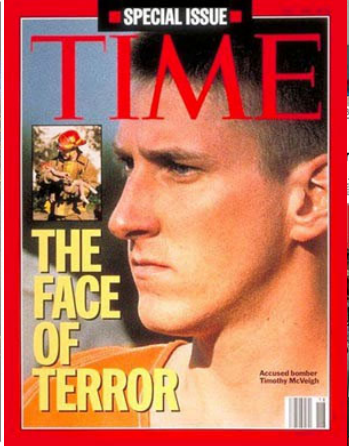
US Export Controls are administered by multiple agencies.



What's The Threat?



- Regional Conflict
- Proliferation of WMD
- Terrorism
- Political Instability



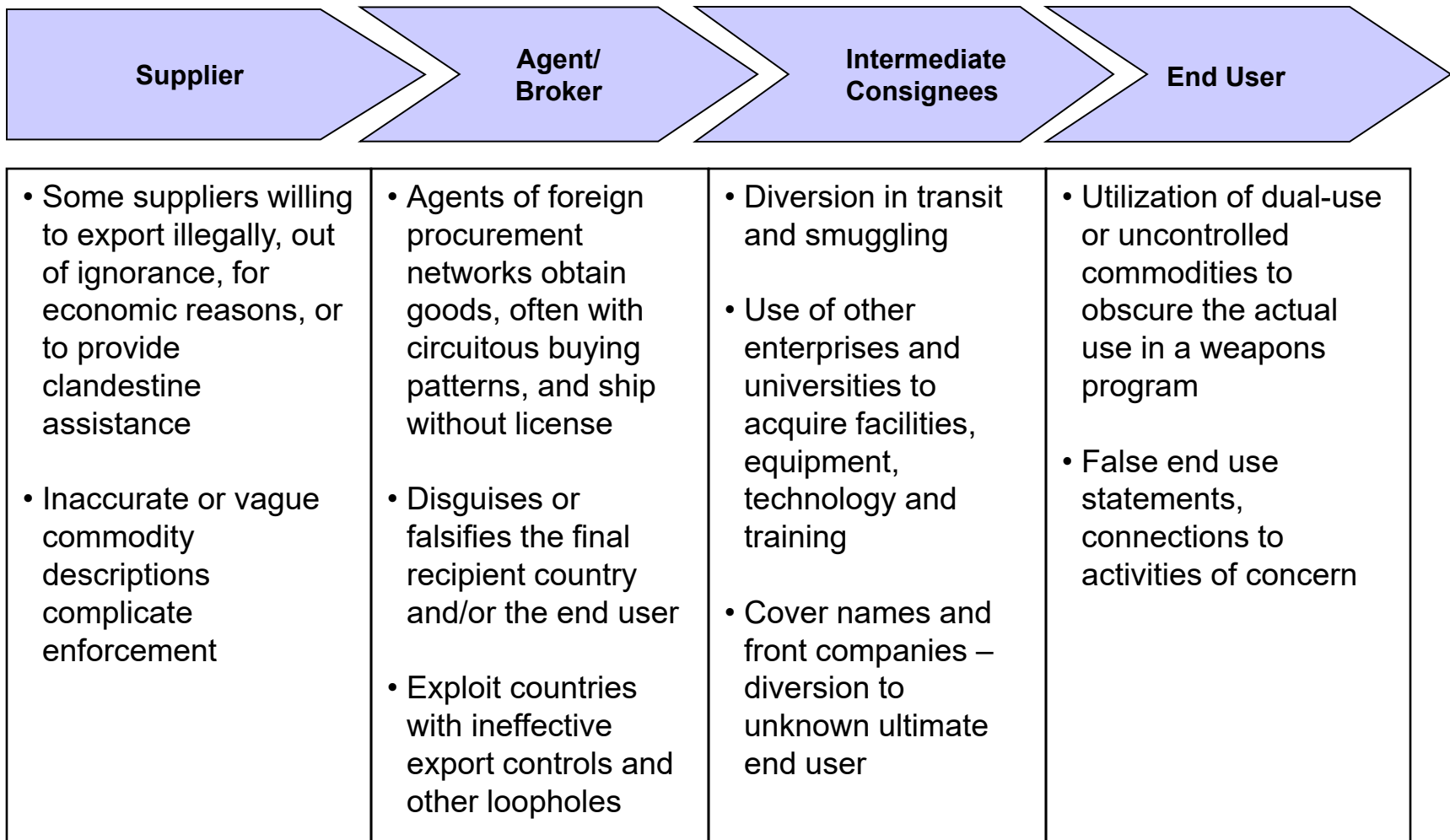
Nonproliferation Objective

Prevent proliferation of items and technologies **associated** with:

- Weapons of Mass Destruction
 - Nuclear
 - Chemical
 - Biological
 - Delivery Systems
- Conventional Weapons
 - Munitions
 - Military Items

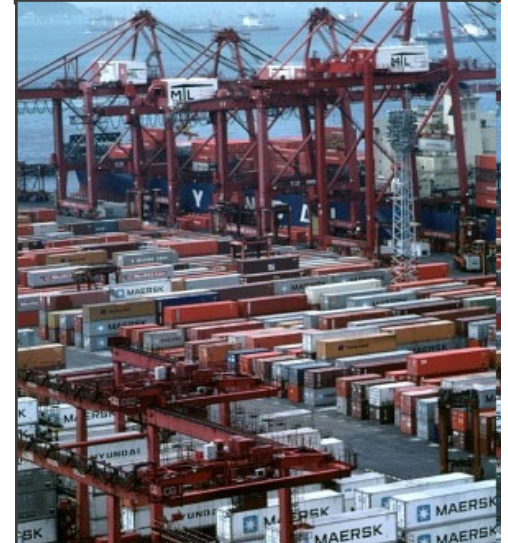


Proliferators Attack Export Control Weaknesses



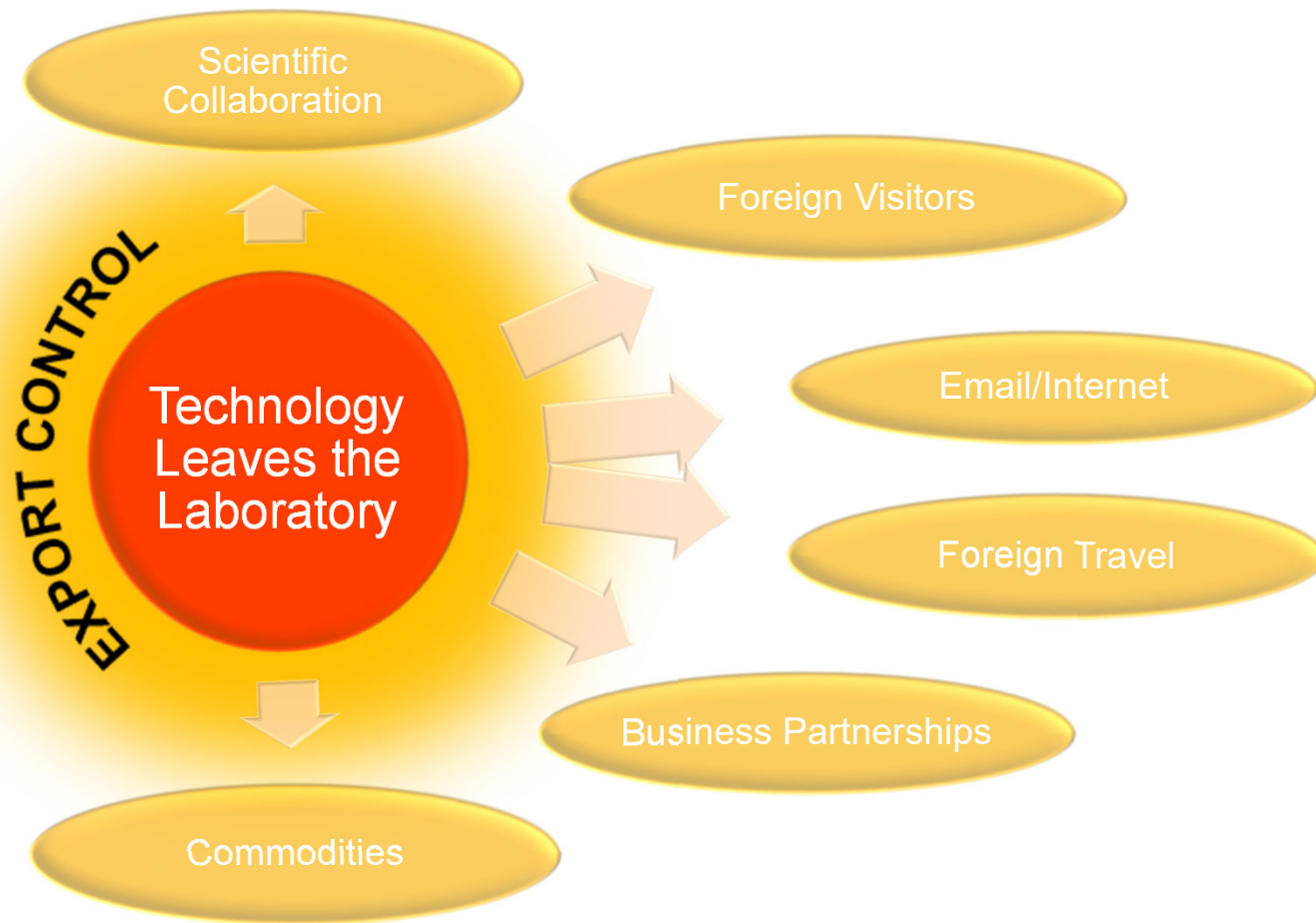
Current Trends are Intensifying Proliferation Threats

- **Globalization**
 - Increasing transshipment trade
- **Modernization**
 - Technology advances and ease of intangible transfer of technology
- **WMD Brokering**
 - Front companies, “offshore” procurement networks and black-market supply networks
- **Terrorism**
 - Threat of development and use of WMD by sub-national groups
- **Secondary Proliferation**
 - Proliferants are themselves now suppliers of WMD commodities and know-how.



What is an Export?

- An export is a transfer of equipment, material, software, or technology (information) to a foreign national either inside or outside of the United States by any means



Challenges of Controlling Technology

- **U.S. exporters must be aware that technology related to controlled commodities can be controlled to the same extent as the commodity**
- **Technology is information necessary for the development, production, or use of a commodity. It can take the form of**
 - Technical Data
 - e.g., technical reports, calculations, experimental results, engineering design data and specifications (drawings, diagrams, and blueprints), and operating manuals
 - Technical Assistance
 - e.g., transfer of working knowledge or “know how”, instruction, consulting
- **Exemptions**
 - Information in the public domain or intended for public release
 - e.g., published literature, conference proceedings
 - Fundamental research
 - Basic and applied research where the resulting information is ordinarily published and shared broadly within the scientific community

Effective internal compliance programs incorporate procedures to protect technology

Challenges of Controlling Technology



DefenseTradeLaw.com

U.S. Export Controls

- **Military Goods**

- International Traffic in Arms Regulations (ITAR)
- Licensing Entity: Directorate of Defense Trade Controls – Department of State

- **Dual-Use Goods**

- Export Administration Regulations (EAR)
- Licensing Entity: Bureau of Industry and Security – Department of Commerce

- **Nuclear Technology**

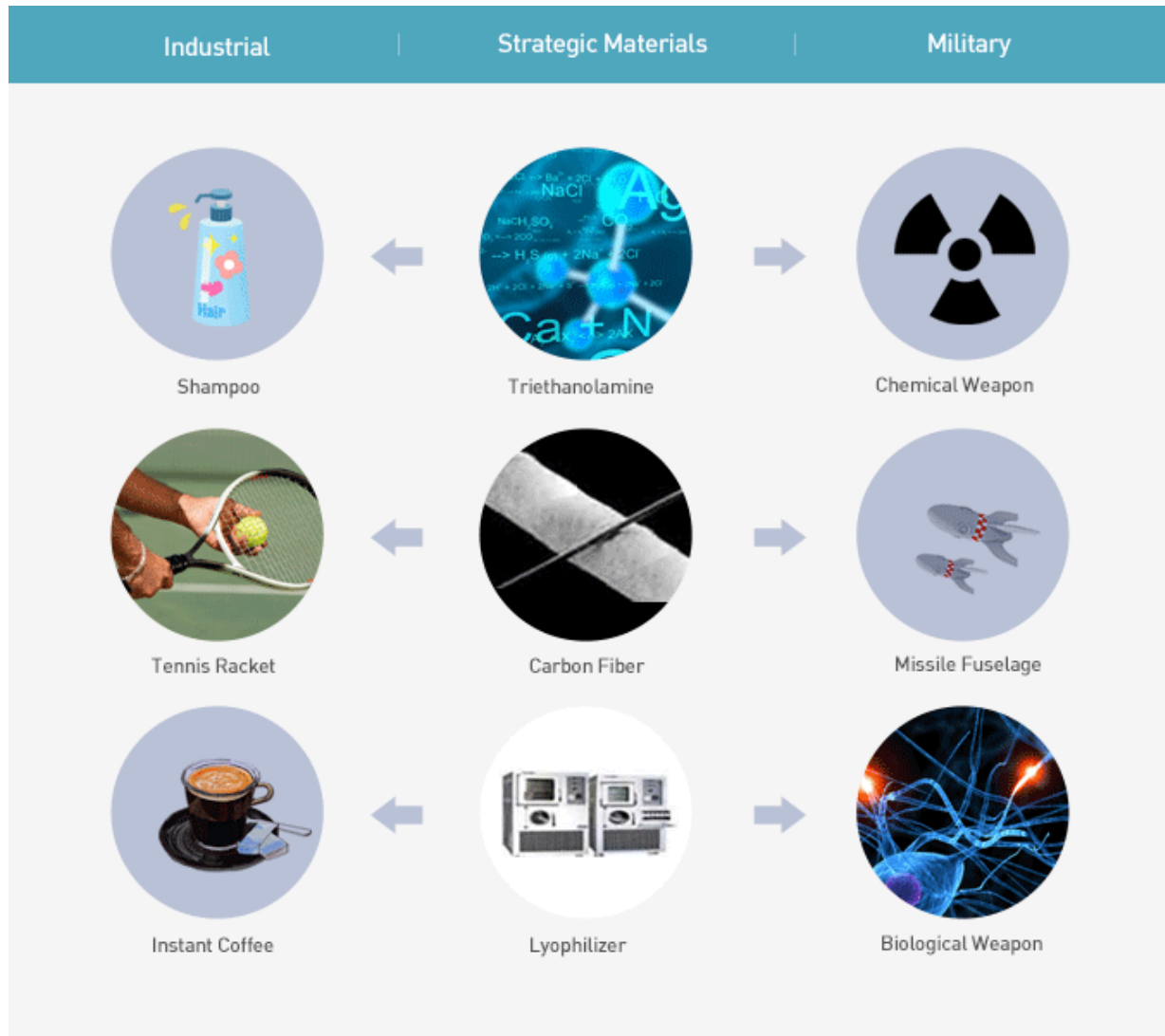
- Technology requiring license enumerated in Code of Federal Regulations (10 CFR 810)
- Licensing Entity: Department of Energy

- **NSG Trigger List Items**

- Technology requiring license enumerated in Code of Federal Regulations (10 CFR 110.8, 110.9)
- Licensing Entity: Nuclear Regulatory Commission

The U.S. Export Control System has its basis in Multilateral Export Control Regimes and their Lists

Dual Use vs Defense Article



Weapons of Mass Destruction

Chemical Weapons

Biological Weapons

Nuclear Weapons

Delivery Systems



All of these require dual-use items

Dual-Use Example: Induction and Metallurgical Melting and Casting Furnaces

- **Nuclear Use**

- Melting, casting, and processing U and Pu parts
- Heat treating maraging steel for gas centrifuge rotor assemblies
- Nuclear-related metallurgical research

- **Non-WMD Use**

- Non-nuclear metallurgical research
- Production of specialty steels (e.g., maraging steel) or superalloys for the aerospace industry
- Melting and casting reactive metals such as titanium and zirconium
- Jewelry-making
- Semiconductor fabrication and coating

Vacuum induction furnaces (2B226) are used to melt and cast metal using the heat of induction current



Arc remelt, electron beam, and plasma furnaces (2B227) are used to re-melt metals to achieve high purity, or to combine different alloying materials with a base material to produce an alloy; they are NOT typically used to cast U and Pu parts for nuclear weapons

Dual-Use Example: Machine Tools



Machining Center

A machine tool is a powered mechanical device used to fabricate metal components by the selective removal of metal.



NC Lathe

- **Nuclear Use**

- Manufacturing nuclear explosive device components, U-enrichment components, molds and crucibles for casting U or Pu

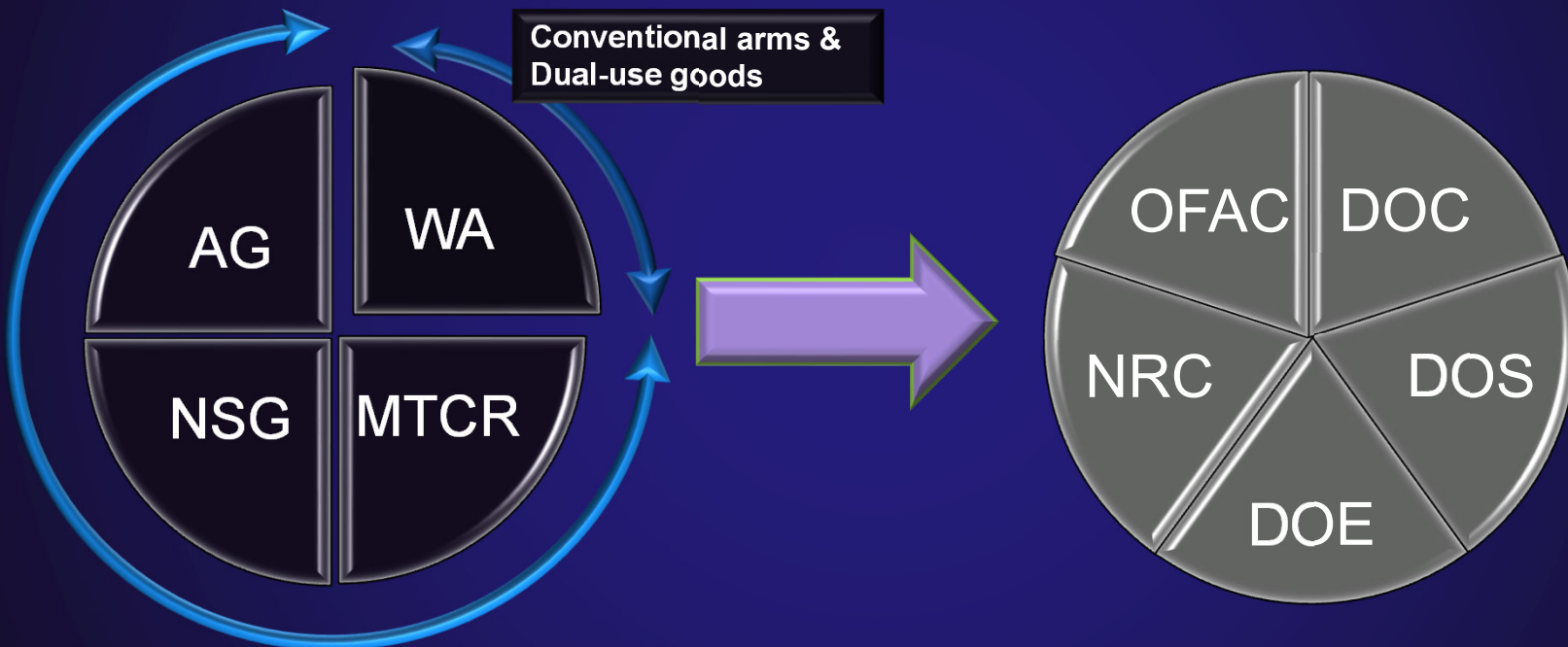
- **Non-WMD Use**

- Virtually every type of national industry, e.g., aerospace, automotive, general appliance, electronic, power generating, defense

International regimes are a primary basis for U.S. export controls

Multilateral Export Controls

U.S. Export Controls

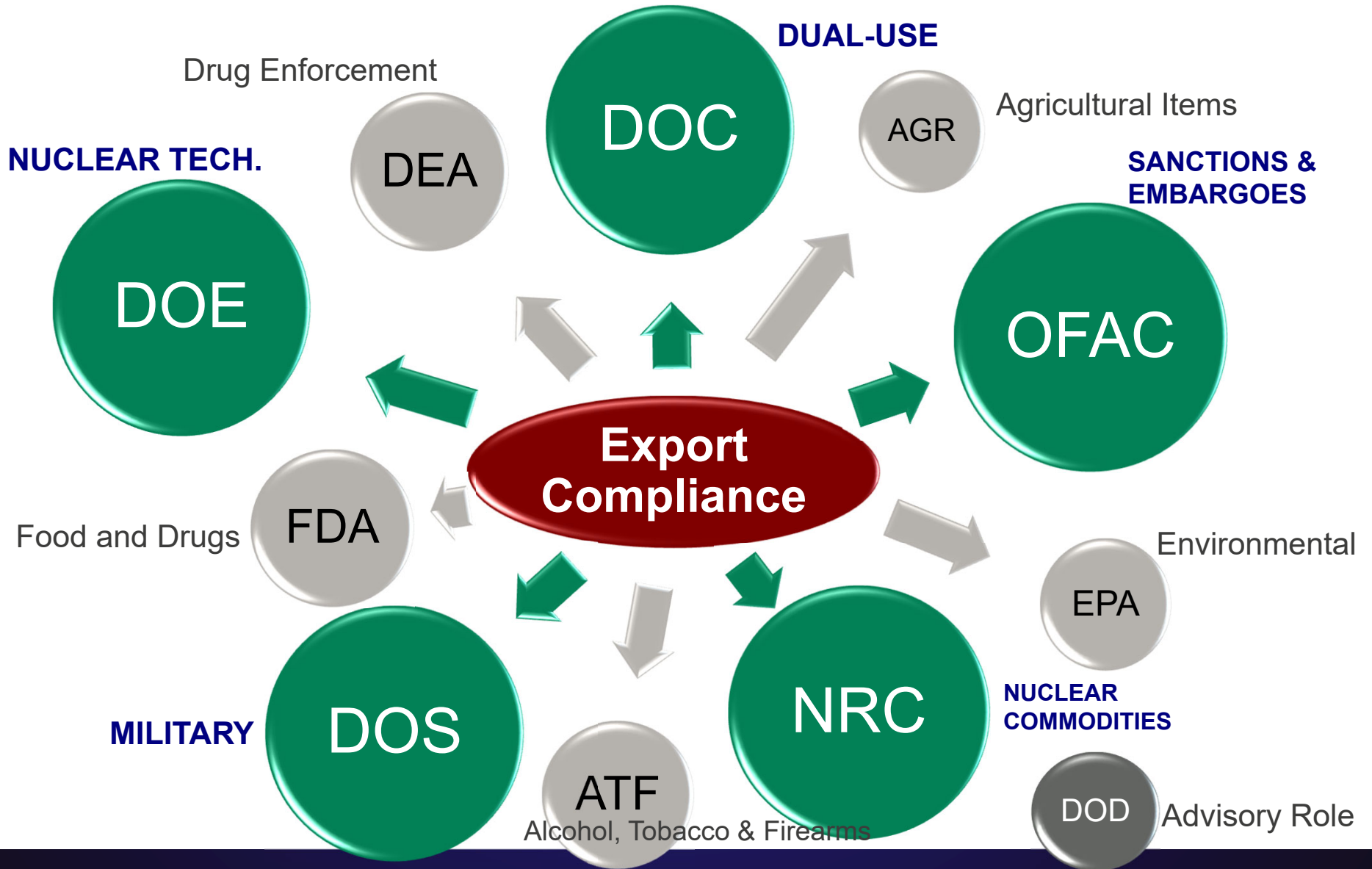


WMD nonproliferation

AG: Australia Group
NSG: Nuclear Suppliers Group
MTCR: Missile Technology Control Regime
WA: Wassenaar Arrangement

OFAC: Office of Foreign Assets and Control
DOC: Department of Commerce
DOS: Department of State
DOE: Department of Energy
NRC: Nuclear Regulatory Commission

It's Complicated!



Proliferation Case Studies

A.Q. Khan – A Special Problem

Secondary Proliferation and Networks

On February 2, 2004, A.Q. Khan, father of the Pakistani nuclear bomb, confessed in a televised address to transferring nuclear technology to North Korea, Iran, and Libya .

The IAEA describes the activities of Khan and the sophisticated network of black marketers associated with him as "the most serious case of nuclear proliferation in recent times."



Source: The Independent, "Scandal of Pakistani nuclear secrets for sale was 'tip of iceberg'" (4 February 2004); <http://www.independent.co.uk/news/world/asia/scandal-of-pakistani-nuclear-secrets-for-sale-was-tip-of-iceberg-568981.html>

North Korea and Libya: Proliferation of Missile Development Capability

- Indian customs agents boarded the Kuwolsan
- Crates marked “water refinement equipment” contained nose cones, machine tools, guidance systems, extensive engineering drawings labeled “Scud B” and “Scud C.”



Smugglers' Route: North Korean ship carried secret cargo of missile parts originally intended for Libya

“In the past we had seen missile or engine parts, but here was an entire assembly line for missiles offered for sale. This was a complete technology transfer”

India government official

Source: Washington Post, “On North Korean Freighter, a Hidden Missile Factory” (14 August 2003); <http://www.washingtonpost.com/ac2/wp-dyn/A56111-2003Aug13?language=printer>

Recent Chemical Activity

- April 2015: **ISIS Carries Out Chemical Weapon Attack on Syrian Army**
 - Possibly Mustard Gas
- Nov 2015: **ISIS is pursuing use of chemical weapons with the help of scientists**
 - Chlorine, Mustard
- Nov 2016: **UN reports use of chemical weapons by Daesh as Iraqi troops inch ahead**
 - Ammonia and Sulfur (Fumes from al-Mishrag Sulphur Gas Factory)
- April 2017: **U.S./Turkey Complicit in the Use of Chemical Weapons by Daesh and “Moderate Rebels” in Syria and Iraq**
 - Initially Chlorine, possibly sarin or mustard gas



Recent Biological Activity

- Aug 2016: **ISIS Anthrax Arrests Could Signal America's Worst Nightmare Is Coming True**
- Mar 2016: **Morocco: Arrested militants planned 'biological' attacks**
- 2014-2016: **Ebola Outbreak in West Africa**
- Feb 2017: **North Georgia white supremacist indicted for possessing deadly ricin**



Ebola deaths

Figures up to 13 January 2016

11,315

Deaths - probable, confirmed and suspected
(Includes one in the US and six in Mali)

4,809 Liberia

3,955 Sierra Leone

2,536 Guinea

8 Nigeria

Source: WHO

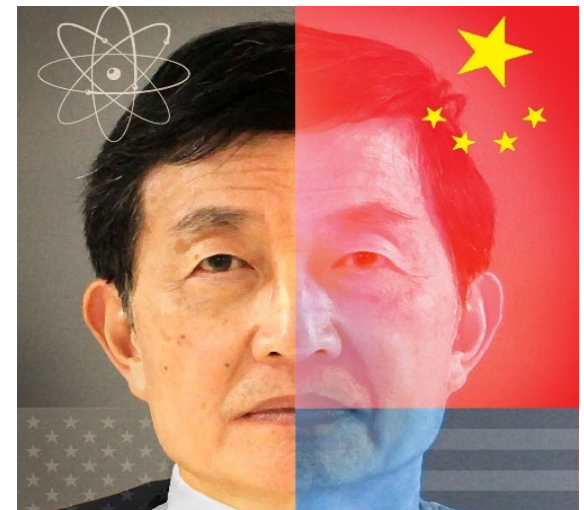


Recent Nuclear Activity

- June 2015: **Turkey: Men arrested carrying nuclear material at border**
 - Smuggling 1.2 kilos of cesium
- Oct 2015: **Smugglers Tried to Sell Nuclear Material to ISIS (Moldova)**
 - Smuggle and sell cesium
- Sept 2016: **Nuclear secrets: The ex-Westinghouse employee accused of helping a foreign power**
 - Nuclear Technology
- 2017: **Rise in Armenians Arrested for Nuclear-Materials Smuggling Is Worrisome**
 - Selling Uranium 238



Uranium



Alan Ho

Recent Missile Activity

- Mar 2016: ***CEO allegedly shipped materials for missile production, nuclear applications to Iran***
 - Aerospace-grade cobalt-nickel metallic powder
- Apr 2016: ***Second Chinese Spy Case In a Week: Tried Exporting Materials for China Missile Program***
 - Sensitive carbon fiber
- Oct 2016: ***US foiled an alleged plot to illegally send missile technology to Russia***
 - Sensitive electronics
- Mar 2017: ***Another Iran Regime's Missile Technology Smuggler Arrested***
 - Missile guidance testing equipment



Chinese DF-26



Iranian Rocket Shipment
Seized by Israeli Navy
(AP,2014)

Case Study: Unintentional Export of Information

- **Event**

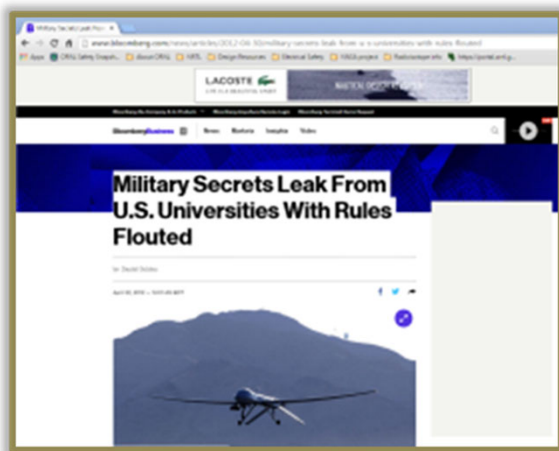
- 2009: Georgia Institute of Technology offered an unclassified, non-credit, continuing education course on infrared systems and technology development for U.S. citizen employees of the U.S. government and U.S. companies. A training video of the course was inadvertently placed on the web where it was accessed from foreign IP addresses

- **Impact**

- Unknown, but when the Institute discovered the problem they filed a voluntary self-disclosure and ran extensive and costly tracking and remediation

- **Specifics**

- Some slides may have contained export controlled information



Lessons Learned:

- ✓ Ensure policies and procedures are in place and followed to ensure documents are reviewed for Export Controlled information prior to making public

Export Control Internal Compliance Program at LANL

Managing Export Compliance at Los Alamos National Laboratory: Internal Compliance Program

LANL's Internal Compliance Program (ICP) is to ensure institutional compliance with Federal export control regulations in support of LANL's mission and programs with foreign involvement.



- A key component of LANL's ICP is the Export Working Group (EWG), an advisory group that assists LANL management with export/import policy and implementation.

The EWG consists of LANL organizations with export control responsibilities and expertise

- Export Control Team (**primary ICP implementer**)
- Foreign Visits & Assignments
- Legal Counsel
- Technology Transfer (contracts and lab partnerships)
- High Risk Property Management
- International Nonproliferation



LANL's ICP is proactive and involves all aspects of the laboratory and all level of employees

Managing Export Compliance at Los Alamos National Laboratory: **Internal Compliance Program**

- **Functions of the LANL Export Control Team**

- Maintain and publish management policy and commitment;
- Establish and Implement LANL's ICP structure and procedures;
- Support LANL's Mission and International Activities;
- Provide services, guidance, and resources for all export-related activities;
- Provide training to the Laboratory;
- Maintain complete documentation of all export transactions;
- Provide mechanisms for employee reporting; address any corrective actions;
- Perform comprehensive assessments of LANL ICP
- Remain informed of updates to the government's export control laws and regulations to ensure compliance procedures are current

Summary

- **Export Controls are integral to combating the spread of WMD and their related technologies.**
- **Export Controls are internationally mandated through treaties, agreements, etc., and implemented at the national level through state policy.**
- **Proliferators continue to build WMD programs through illicit dual-use purchases by taking advantage of vulnerabilities in export control systems.**
 - This has happened in the past (ex. AQ Khan) and continues to happen to this day.
- **Proliferators use clandestine brokering, procurement and supply networks.**
- **Training, outreach and advisory groups are important to an Export Control ICP.**
- **Export Controls are cross functional and everyone's responsibility; we can all support each other and protect our national security by practicing awareness and due diligence.**

