Export Control Training
Experience and Pedagogical Lessons Learned

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Overview

• DOE/NNSA International Nonproliferation Export Control Program
• Export Control Course Offerings
• Training Strategy, Tactics, and Pedagogical Lessons Learned
• Relevance to safeguards
International Nonproliferation Export Control Program

• Mission: Strengthen global efforts to prevent illicit transfers of materials, equipment, and technology related to weapons of mass destruction (WMD)
• INECP works with over 70 domestic and international partners, driven by a risk-based engagement approach.
Export Control is a Team Sport

• Enterprises and technology holders
  - Their awareness, vigilance, and export control compliance is critical
  - Goal: know when a sale looks questionable and when an export may require a license
    - “Know your customer” guidance and red flags to look for

• Export License Analysts and Technical Specialists
  - Goal: know when an export should be approved or denied
    - End use/end user analysis

• Customs Inspectors and Risk Analysts
  - Goal: know when a shipment involves illicit trafficking in controlled commodities
    - Targeting, commodity identification, and technical “reachback”

• Investigators
  - Reactive Investigations (Interdictions/Seizures)
  - Proactive Investigations (Industry Outreach, Cooperative Defendants, Intelligence, Confidential Informants, Controlled Deliveries, Undercover Operations, Surveillance, …)

• Prosecutors, Regulators/Legislators, Intelligence Analysts, …
# Courses/Offerings

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**Technical Introduction to Licensing (TIL)**

- Geared toward countries considering or in the process of adopting dual-use legislation and a comprehensive control list
- Introductory workshop designed for government officials and technical staff involved in strategic trade licensing system implementation and/or national control list development

**Content:**
- Foundations of a Comprehensive Strategic Trade Control System
- Structure of the EU Dual-Use Control List
- Technical Survey of the EU Dual-Use Control List
- Introduction to Risk Analysis
- Commodities and Case Studies
- Other Topics: Catch-all controls, entity lists, technology controls, etc.

**Flow-forming and Spin-forming Machines**

<table>
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<th>(EU 2B009, 2B109, 2B209)</th>
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<tr>
<td>- Nuclear Use</td>
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<td>- Nuclear explosive device components: gas centrifuge rotor tubes and end caps</td>
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<td>- Missile Use</td>
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<td>- Rocket motor cases and other structural components such as nozzles and end domes for fuel tanks</td>
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<td>- Non-WMD Use</td>
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<td>- Automotive wheels, automatic transmission components</td>
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<td>- Gas containers, shaped charge casings</td>
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<td>- Control</td>
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<td>- Can be equipped with numerical control units or a computer control</td>
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<td>- Three or more rollers</td>
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<td>- Number of axes</td>
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<td>- Capability for contour control</td>
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Flow- and spin-forming machines are used to manufacture hollow, symmetrical, relatively thin-walled shapes from conical, disc, or ring-shaped pretforms.
End-Use/End-User Analysis

- Provides licensing officials and technical experts with a methodology for assessing proliferation risks associated with proposed transfers of strategic dual-use commodities and technology

- Content:
  - Multilateral export control arrangements: Guidelines and control lists
  - Overview of proliferation methods
  - Procurement tactics demonstrated through use of actual licensing case studies
  - End-use/end-user risk assessment methodology
  - Information resources for conducting risk assessments
  - Hands-on license review exercises (through use of mock license applications)
Analysis of Strategic Commodity Transfers (ASCOT)

- Advanced version of the EUEU workshop

- Primary distinctions:
  - Inclusion of in-depth, technical commodity end-use presentations
  - Technical difficulty/realism of mock cases – role of technical specialists

- Content:
  - Introduction/WMD proliferation threat
  - End use/end user analysis methods
  - Technical presentations on the end uses of strategic commodities
  - Mock license review exercises (case studies) on selected commodities
  - Additional special topics as appropriate (e.g., end use/end user analysis in catch-all controls)
Technical Export Control Specialist (TECS) Training

- Intensive training focused on developing a cadre of technical export control specialists who can serve as technical advisors to export control officials

- Typically held in the US at a national lab
  - highly-customized
  - participants provided with computer and internet access
  - extensive use of detailed, realistic exercises in addition to more typical lecture and discussion sessions

- Content:
  - The role of technical experts in export control processes
  - Proliferation procurement tactics
  - Technical introductions to WMD
  - Detailed, technical coverage of export controlled dual-use materials and equipment used to develop, produce, and/or test WMD and Missile Systems
  - Detailed review of control lists and procurement watchlists
  - Commodity classification, including realistic exercises and focusing on technical specifications of the control lists
  - Assessment of proliferation risk using end-use/end-user analysis, including realistic exercises
Technology Guide Development

• DOE/NNSA has developed technology guides on nuclear and dual-use equipment
  - These unclassified guides contain a large number of pictures of controlled items, identify their key features, describe a commodity’s appearance (including as packaged), and describe nuclear and non-nuclear uses

• Partners can translate and adapt these guides AND/OR (better) they can develop new ones
  - Very effective way to develop expertise
Introduction to Export Compliance Workshop

• Government workshop to which industry is invited to raise awareness about export control compliance

• Typically involves participation by interagency personnel from both the host country and invited foreign speakers

Content:
- Proliferation Threat
- Regional Proliferation Issues and Challenges
- Multilateral Regimes Overview
- National Control List Review
- National Licensing and Customs Procedures
- Internal Compliance Program Overview
- Customer Screening Best Practices (industry speakers)
- “Know Your Customer” guidance – red flags
- Technology Controls
Company/Site Visits
Internal Compliance Programs

- Visit to a specific company or technology holder to alert them to proliferation procurement risks, make them aware of export control requirements, share best practices to improve enterprise compliance and to encourage information sharing

- Content:
  - Review of company’s products/technology and potential utility to a WMD program
  - Role of Industry and Trade Associations in Effective Export Controls
  - Customer Screening Best Practices
  - Internal Compliance Program (ICP) Best Practices
Commodity Identification Training (CIT)

• Workshop to familiarize customs inspectors and others associated with enforcing export controls with WMD-related materials and equipment as identified on export control lists

• Technical/subject matter experts and Customs instructors invited as observers

• Maximum use of practical exercises and field operations

• Content:
  - Export Controls and Nonproliferation
  - Technical Introductions
    - Nuclear Weapons
    - Biological Weapons
    - Chemical Weapons
    - Missile Systems
  - Materials
    - Structural Materials
    - Special Nuclear Materials
    - Chemicals
    - Biological Agents and Toxins
  - Equipment
    - Industrial Equipment
    - Fabricated Components
    - Electronic Equipment
    - Electronic Components
  - Practical Exercises
CIT Instructor Training (CIT-IT) and National Course Development (NCD) Workshops

- NCD Workshop prepares a national CIT Working Group (WG) to undertake development and implementation of a national CIT Program
- A critical goal of the workshop is development of a CIT Implementation Plan to guide course development
- CIT IT provides participants with an in-depth appreciation for the control lists with a technical understanding of the processes and associated materials and equipment. The course also incorporates discussions on the logistical aspects of developing and fielding CIT, and creating partner-country lectures and tailoring CIT to national circumstances.
XRF Metal Analyzer

• Portable XRF provides customs organizations with a tool to allow them to analyze metals and alloys in order to identify export control commodities

• Content
  - Portable metal analyzer components
  - Operation of the portable metal analyzer
  - Unit customization and Alloy Libraries
  - Alloy analysis:
    - FastID mode
    - Pass/Fail mode
    - Analytical mode
  - “Soil” analysis mode
  - Data handling and PC interface
Pedagogical Lessons Learned

• Understand the audience – customize training
  - Roles, readiness, incentives, limitations, interactions
  - Needed knowledge, skills, abilities
  - Desired change

• Making training effective
  - Active versus passive participation
  - Change of venue (training participants in their environment vs removing them from it)
  - Recruit national authorities into training process
  - Provide useful tools, not just knowledge

• Training strategies for lasting impact
  - Consider the system, not just the individual
  - Bring people together who don’t usually get together. Make them work together.
  - Train-the-trainer vs Course Development Workshops
    - Don’t just teach them what to do, ask them to do it.

• Course Formats
  - Workshops
  - Seminars
  - Meetings/visits
  - Exercises
  - Projects
“...even a verification system making use of the authority under the Additional Protocol may not reliably detect low levels of clandestine nuclear activity, such as that conducted in Iran and Libya for many years, unless at the very least supported and supplemented by the sharing of actionable information from an effective system of export control....”
Additional Protocol CIT

- Supports national implementation of the IAEA’s Model Additional Protocol (AP)
- Familiarizes government officials with nuclear fuel cycle facilities, equipment, and materials found in AP Annexes I and II.
- Also benefits enterprises, universities, and R&D organizations potentially involved in AP-related activities or international transfers, and can support government outreach to support AP reporting requirements and emerging export control laws

Content
- Introduction to safeguards and export control
- AP-related responsibilities and reporting requirements
- National experiences in AP implementation and export control
- The proliferation threat and principles of nonproliferation, including UNSCR 1540
- Government outreach for AP and export control
- Commodity Identification Training, focusing on technical familiarization with AP Annex II fuel cycle processes and related commodities
Export Control Training for IAEA
Department of Safeguards

• Requested by the Department of Safeguards to address training needs arising from, among others, the shift toward “Information-driven Safeguards”

• Conducted jointly with instructors from the Trade and Technology Analysis Unit (TTA)

• Five courses to date
  - October 2009
  - April 2010
  - October 2010
  - May 2011
  - October 2011

• 3-day training on export control concepts, standards, and commodities, including their potential significance as indicators in the context of the physical model when verifying declarations, examining trade data, and evaluating open source information
Course Overview- Objectives

• Goal is NOT to make participants into export control experts or trade analysts, but enable them to properly take export controls into account, particularly when completing SERs by helping them to...
  - Understand basic export control concepts and their relevance to safeguards
  - Build familiarity with the multilateral export control arrangements and control lists
  - Identify elements of national export control system implementation
    - *Safeguards systems (SSAC) are often not well connected to export control systems*
  - Locate quality open source information on export/import control matters
  - Understand relationship between INFCIRC/540 and INFCIRC/254
  - Recognize commodities related to AP Annexes I and II and understand their potential significance as indicators
Understanding export control improves trade analysis and the state evaluation process

- Help define the scope of analysis required when examining possible indicators of undeclared activities
- Familiarity with national systems can help in understanding MS ability to report and/or answer questions regarding exports/imports
- Improve ability to interpret proliferation significance/safeguards relevance of information generated by export control activities—i.e. news articles, press releases, indictments, etc
- Understand limitations in correlation between trade classifications (such as Harmonized System) and export control classification
- Improve ability to determine strength of an indicator by understanding characteristics that make items suitable or unsuitable for various applications or activities (declared or undeclared)
Participant response and feedback

- Clear trend towards more positive recognition that familiarity with export controls and dual-use items is relevant to the IAEA’s work, particularly the SER process
- Participants identified the information as helpful for understanding
  - MS ability to report
  - Vulnerability to proliferating trade
  - Market opportunities vs. indigenous capabilities
  - The significance/insignificance of open source reports
  - Dual-use equipment and materials
- Increasing curiosity about relevance of specific items encountered
- Increased interest in specifics of export control and understanding national implementation