

The Nuclear Materials Management and Safeguards System (NMMSS)



2015 Annual
Users
Training
Meeting

Accuracy

Accountability

Performance



May 11-14, 2015

Las Vegas, NV

The U.S. NRC Nuclear Export Controls: Implementing the NSG Trigger List

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May 11-14, 2015



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NRC's Mission



License and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.



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Legal Basis



- **Atomic Energy Act of 1954, as amended**
- Nuclear Non-Proliferation Act of 1978
- Treaties, Conventions and Agreements including:
 - Nuclear Non-Proliferation Treaty
 - International Atomic Energy Agency (IAEA) Safeguards
 - Conventions: Nuclear Safety; Waste and Spent Fuel; Physical Protection; Early Notification; Assistance; and Liability
 - 123 Agreements for peaceful nuclear cooperation & other multi-lateral agreements



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NRC's Export Licensing Authority



Reactors; fuel cycle facilities;
components; nuclear grade graphite
for nuclear end use; deuterium/heavy
water; source, special nuclear and
byproduct materials including spent
fuel and radioactive waste

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Export Control Regulations



- Reflect statutory requirements and implement international treaties, agreements, and other obligations
- Apply to any person who exports or imports nuclear equipment and material with few exceptions
- Authorize export/import only – do not authorize receipt, acquisition, transfer, transport, possession
- Require compliance with applicable domestic requirements
- Provide public review & comment - licensing & rulemaking



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Incorporation of the Trigger List



- The NSG Part 1 Guidelines (NRC) – the Trigger List – is reproduced in appendices to 10 CFR Part 110
- These are “illustrative” lists – NRC can exert export control over additional commodities consistent with its statutory authority
- Incorporates the “**especially designed or prepared for**” concept in the regulations



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Appendix A to Part 110—Illustrative List of Nuclear Reactor Equipment Under NRC Export Licensing Authority



- **Note:** A nuclear reactor basically includes the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain or come in direct contact with or control the primary coolant of the reactor core.

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Appendix A to Part 110 (cont.)



- (1) Reactor pressure vessels, i.e., metal vessels, as complete units or major shop-fabricated parts, especially designed or prepared to contain the core of a nuclear reactor and capable of withstanding the operating pressure of the primary coolant.
- (2) On-line (e.g., CANDU) reactor fuel charging and discharging machines, i.e., manipulative equipment especially designed for inserting or removing fuel in an operating nuclear reactor.



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Appendix A to Part 110 (cont.)



- (3) Complete reactor control rod system, i.e., rods especially designed or prepared for the control of the reaction rate in a nuclear reactor, including the neutron absorbing part and the support or suspension structures therefor.
- (4) Reactor primary coolant pumps or circulators, i.e., pumps or circulators especially designed or prepared for circulating the primary coolant in a nuclear reactor.
- (5) Reactor pressure tubes, i.e., tubes especially designed or prepared to contain both fuel elements and the primary coolant in a nuclear reactor.



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Appendix A to Part 110 (cont.)



- (6) Zirconium tubes, i.e., zirconium metal and alloys in the form of tubes or assemblies of tubes especially designed or prepared for use as fuel cladding in a nuclear reactor.
- (7) Reactor internals, e.g., core support structures, control and rod guide tubes, fuel channels, calandria tubes, thermal shields, baffles, core grid plates, and diffuser plates especially designed or prepared for use in a nuclear reactor.
- (8) Reactor control rod drive mechanisms, including detection and measuring equipment to determine neutron flux levels within the core of a nuclear reactor.



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Appendix A to Part 110 (cont.)



- (9) Heat exchangers, e.g., steam generators especially designed or prepared for the primary, or intermediate, coolant circuit of a nuclear reactor or heat exchangers especially designed or prepared for use in the primary coolant circuit of a nuclear reactor.
- (10) External thermal shields especially designed or prepared for use in a nuclear reactor for reduction of heat loss and also for containment vessel protection.
- (11) Any other components especially designed or prepared for use in a nuclear reactor or in any of the components described in this appendix.



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Export Licensing Criteria



- Agreement for Cooperation (123 Agreement)
- Full-scope IAEA safeguards in recipient non-nuclear weapon states (NNWS) (Paragraph 4)
- USG must obtain assurances from the foreign government on case-by-case basis that material or equipment will be made subject to 123 Agreement with respect to:
 - No nuclear explosive use or R&D on any nuclear explosive device (Paragraph 2)
 - Adequate physical protection will be maintained (Paragraph 3)
 - No retransfer or alteration in form (reprocessing) without prior USG consent (Paragraphs 8 & 9)



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Export Licensing Criteria (cont.)



- Not inimical to common defense and security (Paragraph 10), and
- For reactors, not an unreasonable risk to the public health and safety of the U.S.



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For Additional Information



- <http://www.nrc.gov>
- <http://www.nrc.gov/about-nrc/ip/export-import.html>
- <http://www.nrc.gov/about-nrc/ip/faq.html>
- <http://www.nrc.gov/reading-rm/doc-collections/cfr/part110/>
- <http://www.nrc.gov/reading-rm/doc-collections/forms/nrc7.pdf>
- <http://www.nuclearsuppliersgroup.org>

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QUESTIONS?

THANK YOU

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