



RIC 2011 SECURITY - TRANSPORTATION SECURITY RULEMAKING ACTIVITIES AT THE U.S. NUCLEAR REGULATORY COMMISSION

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Security Rulemakings

NRC Focus Prior to September 11, 2001

- Historically, NRC Transportation Security Regulations Focused on Highest Risk Radioactive Material, consisted of Special Nuclear Material (SNM) and Spent Nuclear Fuel (SNF)



NRC photo of empty container on truck

NRC Actions Since September 11, 2001

- Domestically, reviewed materials transported by NRC licensees and re-evaluated security requirements considering:
 - applicable threats to shipments,
 - material considerations, and
 - magnitude of adverse consequences
- Internationally, participated in the development of the IAEA Code of Conduct on the Safety and Security of Radioactive Sources



DOE/OCRW photo of locomotive pulling cask.

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Security Rulemakings

NRC Actions Since September 11, 2001

- IAEA Code of Conduct
- Identified 16 radioactive materials and associated quantities that could be useful to a terrorist
- Three categories identified based on potential consequences if an individual remains in close proximity to unshielded source.
 - Category 1 - fatal within few minutes to an hour
 - Category 2 - fatal within hours to days
 - Category 3 - fatal within days to weeks, however unlikely



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Category 1 and 2 Quantities of Radioactive Material

Radioactive Material	Category 1 (Terabequerels)	Category 2 (Terabequerels)
Americium-241	60	0.6
Americium-241/Be	60	0.6
Californium-252	20	0.2
Curium-244	50	0.5
Cobalt-60	30	0.3
Cesium-137	100	1.0
Gadolinium-153	1,000	10.0
Iridium-192	80	0.8
Plutonium-238*	60	0.6
Plutonium-239/Be*	60	0.6
Promethium-147	40,000	400
Radium-226	40	0.4
Selenium-75	200	2.0
Strontium-90 (Y-90)	1,000	10.0
Thulium-170	20,000	200
Ytterbium-169	300	3.0



Security Rulemakings

NRC Actions Since September 11, 2001 (continued)

- Interim solution - enhance existing regulations through Orders
- Objectives of the Orders are enhanced control of material to
 - Prevent unauthorized access,
 - Prevent malevolent use of material, and
 - Mitigate consequences
- Orders were issued to NRC licensees that transport:
 - IAEA Code of Conduct Category 1 and 2 radioactive material and quantities
 - Spent Nuclear Fuel



Security Rulemakings

NRC Ongoing Activities

- Orders are an interim measure
- Long term approach is to enhance transport security through public rulemaking
- Rulemaking process in progress for
 - Physical Protection of Category 1 and 2 material
 - SNF Transportation Security



Security Rulemakings

Objectives of In-Transit Security

- Prevent theft and/or diversion for malevolent use
- Prompt detection, assessment, and reporting
- Prompt LLEA response

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Security Rulemakings

Proposed Rule, Physical Protection of Byproduct Material, 10 CFR Part 37



- Applicable to Category 1 and 2 Quantities of Radioactive Material and small quantities of SNF
- Proposed Rule Published June 15, 2010
 - Considered Security Concepts and Lessons Learned from past Orders
 - Stakeholder feedback from public meetings and comments on preliminary draft rule language
- Requirements proposed for
 - Facility Security
 - In-Transit Security
 - Access Authorization
- Comment period closed January 18, 2011

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Security Rulemakings Proposed 10 CFR Part 37

- Licensee Verification
- Planning & Coordination
- Notifications & Communications
- Shipment Monitoring



DOE/OCRWM illustration

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Security Rulemakings Proposed 10 CFR 73.37

- Armed Escorts
- Procedures, Training and Protection of Information
- Background Investigations



DOE/OCRWM Photo of PA police walking along side rail shipment



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Security Rulemakings



Next Steps

- Evaluate Rulemaking Comments
- Prepare Final Rules for Commission Approval

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Questions?

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**RIC 2011
NATIONAL SOURCE TRACKING SYSTEM
U.S. NUCLEAR REGULATORY COMMISSION**

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NSTS Overview

Source Life Cycle



The relevant regulations that discuss the NSTS are found in 10 CFR § 20.2207 and state that each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally tracked source must complete and submit a National Source Tracking Transaction Report.



Nationally Tracked Source Thresholds

Radioactive Material	Category 1 (Tkg)	Category 1 (G)	Category 2 (Tkg)	Category 2 (G)
Actinium-227	20	540	0.2	5.4
Americium-241	60	1,600	0.6	16
Americium-241/Be	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1,400	0.5	14
Cesium-137	100	2,700	1	27
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,200	0.8	22
Plutonium-238	60	1,600	0.6	16
Plutonium-239/240	60	1,600	0.6	16
Polonium-210	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Radium-226	40	1,100	0.4	11
Selenium-75	200	5,400	2	54
Strontium-90	1,000	27,000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81





Questions?

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