



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Regulatory Basis – Transportation Theft & Diversion

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Objectives



Desired Outcomes

- Incorporate material attractiveness
- Use material-based approach
- Increase clarity and consistency
- Use risk-informed and performance-based structure



Desired Changes

- **Eliminate Existing Regulations**
 - §73.67 “License fixed site and in-transit requirements for physical protection of special nuclear material of moderate and low strategic significance”
- **Change terminology/definitions**
 - Example, Formula Quantity of Strategic SNM to Category I
- **Change to Subpart structure**



Desired Changes (cont'd)

- **Six sets of physical protection requirements**
 - Category I (non-dilute)
 - Category I - moderately dilute
 - Category I - highly dilute
 - Category II (non-dilute)
 - Category II - moderately dilute
 - Category III
- **Performance objectives, protective strategies, and specific physical protection requirements**



Considerations: Variables

- Understanding unlike fixed sites, the transportation environment is extremely dynamic and subject to numerous variables;
- Variables include: Weather, Physical roadway conditions, Unexpected hazards occurring in the Maritime Transportation System (MTS), Railway system interruptions, Vehicle materiel conditions.



Potential Changes-Strategy

	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Protective Strategy	<p>Protect against DBT of theft and diversion and radiological sabotage</p> <p>Prevent the removal of SNM and other unauthorized activities involving SNM</p> <p>DBT-based FOF testing</p>	<p>Immediately detect attempts to remove of SNM and provide sufficient delay through the use of barriers and/or armed responders to allow LLEA to promptly recover SNM</p>	<p>Promptly detect attempts to remove of SNM and notify local law enforcement agencies to allow recovery of SNM.</p>	<p>Timely detect attempts to remove of SNM and notify LLEA to recovery SNM</p>
Additional limitations		<p>No more than one shipment at any given time for Cat II</p> <p>Limit on Cat II high-grade Pu</p>	<p>No more than one shipment at any given time for Cat II</p> <p>Limit on high-grade Cat II LEU</p>	
Security Plan	<p>Physical Security Plan – Program</p> <p>Shipment specific security plan</p> <p>Safeguards Cont. Plan</p> <p>Training & Qual. Plan</p> <p>Response procedures to include loading, custody transfer, response to safeguards contingencies</p>	<p>Physical Security Plan - Program</p> <p>Shipment specific security plan</p> <p>Safeguards Cont. Plan</p> <p>Training & Qual. Plan</p> <p>Response procedures to include loading, custody transfer, response to safeguards contingencies</p>	<p>Physical Security Plan (can be part of fixed site)</p> <p>Response procedures</p>	<p>Physical Security Plan (can be part of fixed site)</p> <p>Response procedures</p>



Potential Changes-Strategy

	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Security Organization	Implement Program Management System Part 11 Part 26 – except Subpart I & K Fatigue	Implement Program Management System Fatigue	Implement Program Management System	Implement Program Management System
Route	Route planning Safe heavens Route survey/ approval	Route planning Safe heavens Route survey/ approval	Route approval	none
Notifications	Classified notifications Advance notification to NRC and receiver Receiver confirmation Notification of shipment to NRC and receiver Notification to QRF	Advance notification to NRC and receiver Receiver confirmation Notification of shipment to NRC and receiver Notification to LLEA	Advance notification to NRC and receiver Receiver confirmation Notification of shipment to NRC and receiver Notification to LLEA Receiver's notification of receiving	Advance notification to NRC and receiver Receiver confirmation Notification of shipment to receiver Receiver's notification of receiving



Potential Changes-Strategy

	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Configuration and Physical Barrier	Specially designed covered vehicle Containers and tiedowns Immobilization device Vehicle's delay features to achieve performance Hardened transport vehicle cab	Covered transport vehicle or open conveyance with a heavy transport cask Containers and tiedowns Immobilization device Hardened transport vehicle cab	Covered transport vehicle or open conveyance with a heavy transport cask Containers and tiedowns	Covered transport vehicle or open conveyance with a heavy transport cask containers
Access Controls	Limit unescorted access Access authorization Photo Badges Search vehicles prior to departure Control of access to vehicles prior to departure Locks on vehicle/ key controls Control of access to SNM transfer points	Limit unescorted access Access authorization Photo Badges Search vehicles prior to departure Control of access to vehicles prior to departure Locks on vehicle/ key controls Control of access to SNM transfer points	Limit unescorted access Access authorization Photo Badges Search vehicles prior to departure Locks on vehicle/ key controls Control of access to SNM transfer points	Access authorization Locks on vehicle/ key controls Control of access to SNM transfer points



Potential Changes-Strategy

	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Detection and Assessment	<p>MCC</p> <p>IDS inside vehicle enclosure (detection of boundary penetration – communicate to MCC)</p> <p>IDS on SNM package</p> <p>TID on vehicle enclosure</p> <p>TID on containers</p> <p>GPS</p> <p>Surveillance at stops</p>	<p>MCC</p> <p>IDS on vehicle enclosure or SNM container – communicate to MCC)</p> <p>TID on containers</p> <p>GPS</p> <p>Surveillance at stops</p>	<p>Continuously maintained POC (shipper, carrier, receiver)</p> <p>Periodic status-check communications (part 37 for language)</p> <p>Surveillance at stops</p> <p>TID on container</p> <p>GPS</p>	<p>TID on container</p> <p>GPS</p>
Communication	<p>Redundant, encrypted communications between MCC, QRF and convoy and within convoy</p>	<p>Redundant, encrypted communications between MCC and convoy and within convoy</p>	<p>Redundant, diverse communications between transport and LLEA, shipper/receiver/ carrier POC</p>	<p>Communications between transport and LLEA, shipper, receiver</p>



Potential Changes-Strategy

	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Response	Armed escorts – interrupt and neutralize Hot pursuit and recovery Deadly Force Hardened escort vehicles QRF response Quarterly performance exercises for armed escorts	Armed escorts – delay (interrupt) and communicate Deadly Force Pre-arranged LLEA response (document via MOA) Annual exercises	LLEA Liaison Immediate investigation upon missed communication check	LLEA Liaison Immediate investigation upon non-arrival on time
Security Program Review	Annually Management Review CAP or event log	Bi-annually Management Review CAP or event log	Bi-annually Management Review CAP or event log	Bi-annually Management Review CAP or event log
Maintenance & Testing	Required	Required	Required	None
Compensatory Measures	In PSP	In PSP	In PSP	In PSP
Suspension of Security Measures	Allowed	Allowed	Allowed	Allowed
Records	Required	Required	Required	Required
Alternative Measures	Allowed	Allowed	Allowed	Allowed



Stakeholder Input

- Is this the right approach?
- Are there other approaches we should consider?
- What would be the potential impacts?
- Other things we should consider?



Questions?