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Protecting People and the Environment

Regulatory Basis – Fixed Sites Theft & Diversion

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Objectives

- Improve consistency and clarity;
- Make generically applicable security requirements similar to those imposed on fuel cycle facilities by the security orders;
- Consider risk insights, operational oversight and inspection activities, and international guidance
- Use a risk-informed and performance-based structure

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Material Attractiveness – U-235

	Uranium-235			
Nuclear Material	Attractiveness Level	Cat I	Cat II	Cat III
High-Grade Materials Metals and compounds (≥ 20 wt %), solutions (≥ 25 g/l)	A	≥5 kg	≥1 kg <5 kg	≥RQ <1 kg
Low-Grade Materials Metals and compounds (≥ 1 wt % and < 20 wt %); solutions (≥ 1 g/l and < 25 g/l)	B	N/A	≥25 kg?	≥RQ <25 kg?
All Other Materials Uranium (< 10% U-235); highly irradiated material (≥ 1000 R/h @ 1 m); metals and compounds (< 1 wt %); solutions (< 1 g/l)	C	N/A	N/A	≥RQ

RQ = Reportable Quantities

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Material Attractiveness – Pu & U-233

	Plutonium and Uranium-233			
Nuclear Material	Attractiveness Level	Cat I	Cat II	Cat III
High-Grade Materials Metals and compounds (≥ 20 wt %); solutions (≥ 25 g/l)	A	≥2 kg	≥0.4 kg <2 kg	≥RQ <0.4 kg
Low-Grade Materials Metals and compounds (≥ 1 wt % and < 20 wt %); solutions (≥ 1 g/l and < 25 g/l); Pu (≥ 80 % Pu-238)	B	N/A	≥10 kg?	≥RQ <10 kg?
All Other Materials Uranium (< 6% U-233); highly irradiated material (≥ 1000 R/h @ 1 m); metals and compounds (< 1 wt %); solutions (< 1 g/l)	C	N/A	N/A	≥RQ

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Potential Changes

- Change in terminology
  - Formula Quantity of Strategic SNM to Category I
- Change in structure
- Use of performance based requirements (similar to 73.55)

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	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Protective Strategy	Protect against DBT of theft and diversion and radiological sabotage Prevent the removal of SNM and other unauthorized activities involving SNM Diversion Path Analysis	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	Promptly detect attempts to remove of SNM and notify local law enforcement agencies to allow recovery of SNM.	Timely detect attempts to remove of SNM and notify LLEA to recovery SNM
Security Plan	Physical Security Plan Safeguards Cont. Plan Training & Qual. Plan	Physical Security Plan Safeguards Cont. Plan Training & Qual. Plan	Physical Security Plan	Physical Security Plan

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	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 26 – except Subpart I & K Part 26, Subpart I – Manage Fatigue	Implement Program Management System	Implement Program Management System	Implement Program Management System
Physical Barrier	OCA Vehicle Barrier System/blast analysis Isolation Zone Protected Area Vital Area Material Access Area Locked Processes Vault Hardened CAS	 Vehicle Barrier System Isolation Zone Protected Area Controlled Access Area Locked Processes Vault-type room Hardened CAS	 Controlled Access Area Locked Processes Vault-type room	 Controlled Access Area

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	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Access Controls	Protected & Material Access Area Access Portals Limit unescorted access Part 11 Photo Badges Escort Requirements	Protected Area & Controlled Access Area Access Portals Limit unescorted access 73.57 Photo Badges Escort Requirements	Controlled Access Area Access Portals Limit unescorted access 73.57 Photo Badges Escort Requirements	Controlled Access Area Access Portals Limit unescorted access 73.57 Photo Badges Escort Requirements
Search Programs	OCA – vehicles Protected Area – entry (contraband) & exit (SNM – shielding) Material Access Area – entry and exit (SNM – shielding) Vault (weapons)	 Protected Area – entry (contraband) & exit (SNM & shielding) Controlled Access Area – exit (SNM & shielding)	 Controlled Access Area – entry (contraband) random exit (SNM & shielding)	None

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	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Detection and Assessment	Protected Area & Material Access Area Intrusion Detection System with UPS Video Capture Central Alarm Station Secondary Alarm Station Surveillance Program – Protected Area & unoccupied Material Access Area Periodic Patrols of outside areas Two person rule in MAA Three person rule in Vault Illumination	Protected Area & Vault type room Intrusion Detection System with UPS Video Capture Central Alarm Station Secondary Alarm Station (on-site or off-site) Surveillance Program Periodic Patrols of outside areas Illumination	Vault type room Intrusion Detection System with UPS Central Alarm Station Secondary Alarm Station (on-site or off-site) Surveillance Program Periodic Patrols of outside areas	Surveillance Program Periodic Patrols of outside areas

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	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
Communication	CAS/SAS two-way redundant communication with LLEA Continuous communication between CAS/SAS and on-site and off-site response force Non-portable equipment on UPS	CAS/SAS two-way redundant communication with LLEA Continuous communication between CAS/SAS and on-site and off-site response force Non-portable equipment on UPS	CAS/SAS two-way redundant communication with LLEA Continuous communication between CAS and on-site and off-site response force Non-portable equipment on UPS	Two-way redundant communication with LLEA Continuous communication among security force Non-portable equipment on UPS
Response	10 Tactical Response Team – interrupt and neutralize Deadly Force Armed Security Officers LLEA Liaison Heightened Security	Deadly Force Armed Security Officers – interrupt LLEA Liaison Heightened Security	LLEA Liaison Heightened Security	LLEA Liaison

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	Cat I	Cat I Mod Dilute Cat II	Cat II Mod Dilute	Cat I Highly Dilute Cat III
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

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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?

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Questions