



U.S. NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Special Nuclear Material Protection - Fixed Sites

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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**
 - **§ 73.40 “Physical protection: General requirements at fixed sites”**
 - **§73.45 “Performance capabilities for fixed site physical protection systems”**
 - **§73.46 “Fixed site physical protection systems, subsystems, components and procedures”**
 - **§73.50 “Requirements for physical protection of license activities”**
 - **§73.60 “Additional requirements for physical protection at non-power reactors”**
 - **§73.67 “License fixed site and in-transit requirements for physical protection of special nuclear material of moderate and low strategic significance”**



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**



Desired Changes (cont'd)

- **Change terminology/definitions**
 - **Example, Formula Quantity of Strategic SNM to Category I**
- **Change to Subpart structure**



Desired Changes (cont'd)

- **Require alternate or additional measures deemed necessary by NRC to protect against theft or diversion.**
- **Category I facilities consider the results of an insider risk analysis**
- **Category I facilities meet training and qualification requirements of Section VI of Appendix B to Part 73**
- **Delete requirements in 10 CFR 73.55(I), “Facilities using mixed-oxide fuel assemblies containing up to 20 weight percent plutonium dioxide”**
- **Change exception for Part 50 licensees to except SNM within the protected area of facilities meeting the requirements of §73.55**



Desired Changes (cont'd)

- **Require additional measures for Category III plutonium for sabotage protection**
- **Require background checks for unescorted access to material for Category I - moderately dilute, Category I - highly dilute, Category II (non-dilute), and Category II - moderately dilute licensees**
- **Discontinue use of threshold dose rate (100 rem per hour at 3 feet)**
- **Modify the requirements in §70.72(a) and §50.59(c) to put in place safety/safeguards interface requirements**



Conforming Changes

- **Part 11 “Criteria and procedures for determining eligibility for access to or control over special nuclear material”**
- **Part 50 “Domestic licensing of production and utilization facilities”**
- **Part 70 “Domestic licensing of special nuclear material”**
- **Part 73 “Physical protection of plants and materials”**
- **Part 76 “Certification of gas diffusion plants”**
- **Part 110 “Export and import of nuclear equipment and material”**
- **Part 150 “Exemptions and continued regulatory authority in Agreement States and in offshore waters under Section 274”**



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Protective Strategy	<ul style="list-style-type: none"> - Protect against DBT of theft and diversion and radiological sabotage - Prevent the removal of SNM and other unauthorized activities involving SNM - Insider Mitigation Program - Insider Risk Analysis 	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Promptly detect attempts to remove of SNM and notify local law enforcement agencies to allow recovery of SNM 	<ul style="list-style-type: none"> - Timely detect attempts to remove of SNM and notify LLEA to recovery SNM



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Security Plan	– Physical Security Plan	– Physical Security Plan	– Physical Security Plan	– Physical Security Plan
	– Safeguards Contingency Plan	– Safeguards Contingency Plan		
	– Training & Qualification Plan	– Training & Qualification Plan		



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Security Organization	– Implement Program	– Implement Program	– Implement Program	– Implement Program
	– Management System	– Management System	– Management System	– Management System
	– Part 26 – including Subpart I			



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Physical Barrier	– Owner Controlled Area			
	– Vehicle Barrier System/blast analysis	– Vehicle Barrier System		
	– Isolation Zone	– Isolation Zone		
	– Protected Area	– Protected Area		
	– Vital Area	– Controlled Access Area	– Controlled Access Area	– Controlled Access Area
	– Material Access Area	– Locked Processes	– Locked Processes	
	– Locked Processes	– Vault-type room	– Vault-type room	
	– Vault			
	– Hardened CAS	– Hardened CAS		



	Category I	Category II - Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Access Controls	– Protected & Material Access Area Portals	– Protected Area & Controlled Access Area Access Portals	– Controlled Access Area Access Portals	– Controlled Access Area Access Portals
	– Limit unescorted access	– Limit unescorted access	– Limit unescorted access	– Limit unescorted access
	– Access Authorization Program per Part 11	– Access Authorization Program per §73.57, §73.59, §73.61	– Access Authorization Program per §73.57, §73.59, §73.61	
	– Controlled Badge Program	– Controlled Badge Program	– Controlled Badge Program	– Controlled Badge Program
	– Escort Requirements	– Escort Requirements	– Escort Requirements	– Escort Requirements



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Search Programs	<ul style="list-style-type: none"> - Owner controlled area – vehicles - Protected Area – entry (contraband) & exit (SNM – shielding) - Material Access Area – entry and exit (SNM – shielding) - Vault (weapons) 	<ul style="list-style-type: none"> - Protected Area – entry (contraband) & exit (SNM & shielding) - Controlled Access Area – exit (SNM & shielding) 	<ul style="list-style-type: none"> - Controlled Access Area – entry (contraband) random exit (SNM & shielding) 	<ul style="list-style-type: none"> - None



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Detection and Assessment	<ul style="list-style-type: none"> - Protected Area & Material Access Area - Intrusion Detection System with UPS - Video Capture - Central Alarm Station - Secondary Alarm Station - Surveillance Program 	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - Controlled access area monitored with either intrusion detection equipment or by periodic patrols - Vault type room - Intrusion Detection System - Central Alarm Station - Secondary Alarm Station (on-site or off-site) - Surveillance Program 	<ul style="list-style-type: none"> - Controlled access area monitored with either intrusion detection equipment or by periodic patrols - Surveillance Program



Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute	
Communications	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – 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 	<ul style="list-style-type: none"> – Two-way redundant communication with LLEA – Continuous communication among security force – Non-portable equipment on UPS



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Response	– 10 Tactical Response Team – interrupt and neutralize			
	– Deadly Force	– Deadly Force		
	– Armed Security Officers	– Armed Security Officers		
	– LLEA Liaison	– LLEA Liaison	– LLEA Liaison	– LLEA Liaison
	– Heightened Security	– Heightened Security	– Heightened Security	



	Category I	Category II Category I - Moderately Dilute	Category II - Moderately Dilute	Category III Category I - Highly Dilute
Security Program Review	– Annually – Management Review – Performance Testing – 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



Questions