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on the Peaceful Use of Nuclear Energy and Nuclear Security

Nuclear Safety and Security Strategies for Nuclear Facilities in the European Union

Panel Discussion Items

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Nuclear security strategy approach: items for discussion

1. Identification, analysis and prevention of the risk

- legal framework, share of responsibilites
- scenario studies, threat assessment
- integrated approach safety/safeguard-security from the design stage
- analyses of vulnerabilities, effectiveness of protection systems
- security culture, training

2. Detection (e.g. potential theft of nuclear material)

- detection and monitoring strategies
- border control and response plan
- regional cooperation in combating illicit trafficking, exchange of information, data bases (IAEA)

3. Reaction and remediation

- ECURIE: European Union Urgent Radiological Information Exchange; reporting obligation
- assessment of nuclear/radioactive dispersion events and their consequences
- increase international exchanges
- safeguarding aspects in NPP after accident

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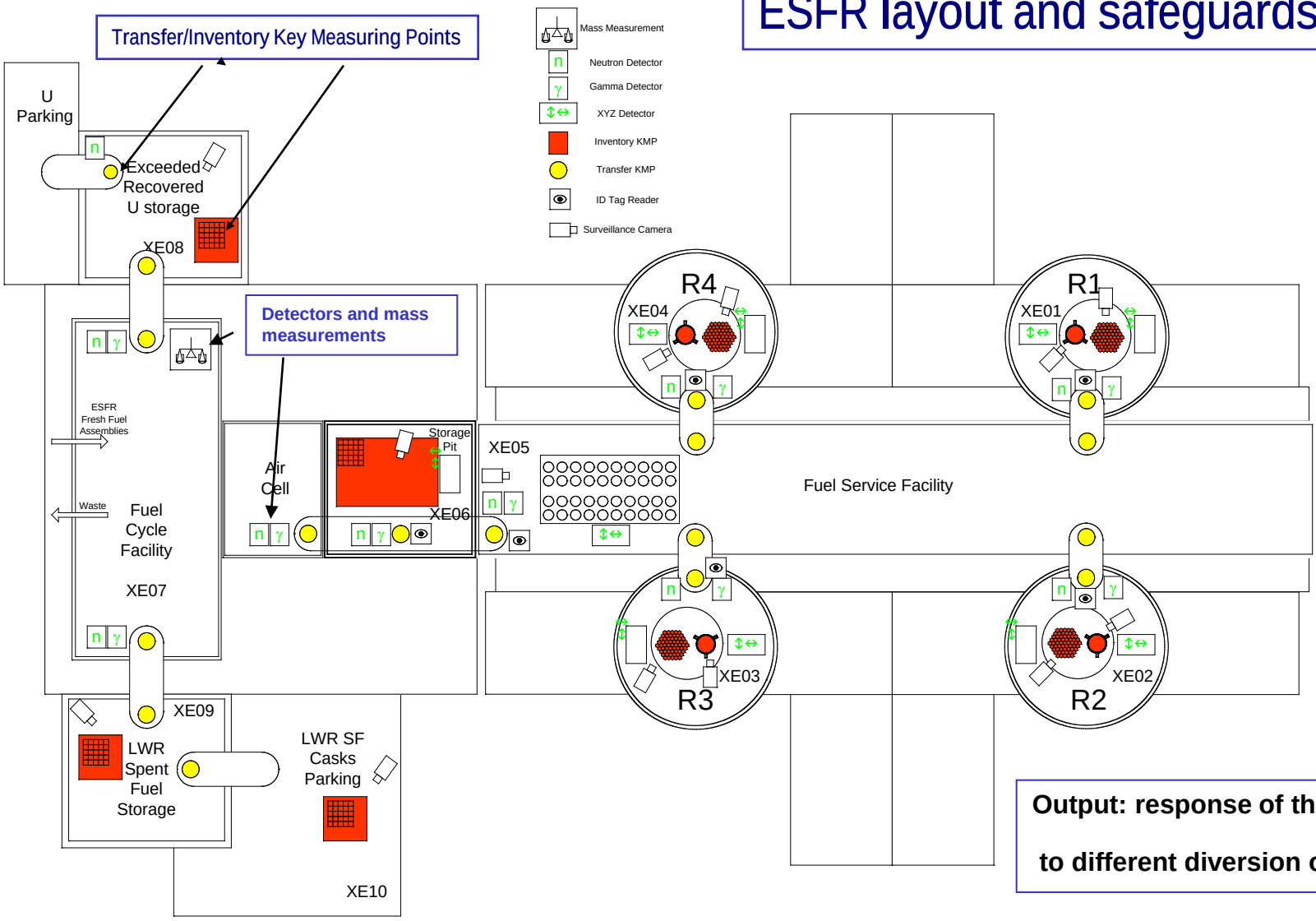
Integration of safeguards and security technologies

Safeguards / Security	NDA (Non Destructive Assay)	DA (Destructive Assay)	Containment	Surveillance	Environmental Sampling	Export and import Control	Information
Prevention	**Remote monitoring / Physical protection**		**Seals Security of containers**	**Satellite images Cameras, 3D Laser**		**Early warning**	**Open source information (early warning)**
Detection	**Gamma and neutron alarms Passive and active detection**			**3D laser Combined with Gamma/neutron for source localisation Satellite images**	**Particle analysis, detection of undeclared activities**	**Detection of Dual use Materials**	**Open source information (detection of undeclared activities)**
Response	**Identification and categorisation of Nuclear and radioactive materials**	**Nuclear Forensic: Isotopes, mass, impurities, age, geo-location,…**		**3D laser Combined with Gamma/neutron for mapping the dispersion of radioactivity**	**Nuclear Forensic: Isotopes, sizes, populations, …**		

Proliferation Resistance and Physical Protection R&D evaluations
Example of methodology applied to a system of fast reactors and its fuel cycle (GIF)

ESFR layout and safeguards equipment



Output: response of the complete system to different diversion or theft scenarios

EU Nuclear Security Training Centre

- With support of DG Home Affairs
- Ensuring high standard in detection and response
- Complementary to national training activities
- Focus on advanced training using nuclear material
- In collaboration with the EU MS, the IAEA and international initiatives
- Benefiting from expertise of the JRC in Ispra and Karlsruhe
- Target audience: front line officers, trainers, experts, decision makers

- Implementation in 2011, fully operational by mid 2012

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CBRN Centres of Excellence

2010: launch of a global initiative to establish BCRN regional Centres of Excellence

- Within the framework of the Instument for Stability, one of the EU's external cooperation instruments
- Aims at building international, regional and national capacity to address trans-regional and global threats (crisis response)
- Five regions concerned: South Caucasus / Ukraine/South East Europe, North Africa, West Africa, the Middle East, and South East Asia
- Centres will aim at developing, at national and regional levels, the necessary institutional capacity to fight against the CBRN risk
- The origin of the risk may be criminal (proliferation, theft, sabotage and illicit traffics), accidental (industrial catastrophes, in particular chemical or nuclear, waste treatment, transport) or natural (mainly pandemics)
- The Centres of Excellence will address legal, regulatory, technical, enforcement and control issues relating to CBRN risk mitigation
- In each region, range of networks of experts will be created or reinforced for sharing best practices, reviewing laws and regulation, developing technical capacities on the above subjects
- The projects cover a broad scope of CBRN issues. Implementation will start in early 2012

Cooperation with regional actors necessary

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Thank you for your attention !

Conclusion

- Nuclear security defence in depth strategy must be applied to NPPs and to the safeguards of the materials they contain
- There is a direct link betweeen technologies applied for safeguards and security
- Safety and security must be integrated from the earliest stage of the design
- Importance of security culture, thus also education and training