



 State Nuclear Regulatory Inspectorate of Ukraine 

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**Ukrainian State Physical Protection System:
challenges and integration into global nuclear
security**

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CONTENT

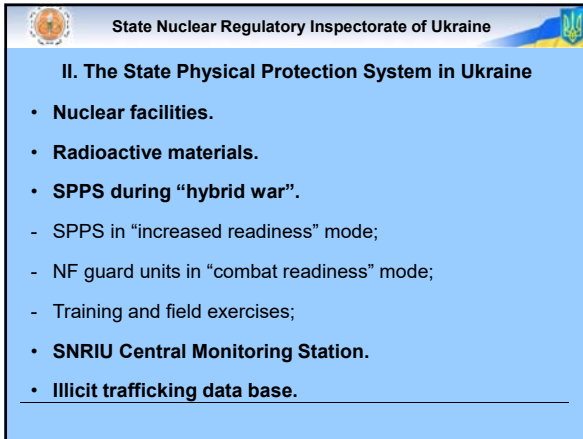
I. Introduction.
II. The State Physical Protection System in Ukraine.
III. DBT during unstable situation.
IV. Results.
V. Proposals.

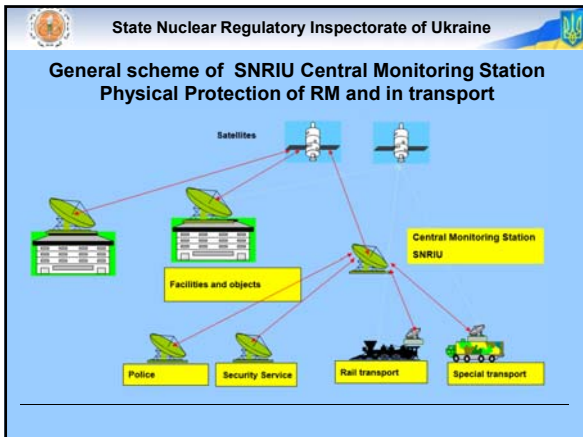
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I. Introduction

- Russian-Ukrainian conflict for 4 years.
- NF and NM are mostly vulnerable from actions of insiders.
- Hybrid methods of war are applied to facilities.
- Provision of proper level of physical protection of NF, NM.
- Detection of potential insider threats.







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Illicit trafficking of Radioactive Materials

Arrest of four smugglers trying to sell RM
(Ivano-Frankovsk region, Ukraine)



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III. DBT during unstable situation

- State DBT was revised in July 2015.
- Considered threats beyond the DBT:
 - occupation of nuclear installations with the aim of political blackmail;
 - increased probability of insiders;
 - threats of shooting weapon application (plenty of weapon from the ATO zone);

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III. DBT during unstable situation

Challenges to the State Physical Protection System:

- Uncontrolled individual patriotic movements.
- Increased likelihood of presence of potential insiders on the sites.
- Increased number of unauthorized flights of unmanned aerial vehicles over NF sites.


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III. DBT during unstable situation

Risk Factors beyond the DBT:



- Pro-Russian illegal armed units, sabotage and terrorist groups.
- Illegal trafficking of weapon and explosives from the ATO zone.
- Return of demobilized citizens to their places of residence.
- National-patriotic motions and their radical view at Russian issue.
- Presence of separatist feelings among migrants.


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III. DBT during unstable situation

Risk Factors beyond the DBT:



- Unauthorized flights of UAV over NF.
- Cyber attacks.
- Potential insiders.
- Reduction of financial support of PPS.
- Loss of control over radiation-hazardous objects in temporarily occupied territories.
- Increase of military presence of Russia along Ukrainian border and in Donbass.
- Activation of maneuvers and sudden inspections of Russian military formations.


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III. DBT during unstable situation



Scenarios for possible sabotage, terrorist attacks:

- IED installed in vulnerable technological systems.
- Bombing from UAV.
- Capture of hostages in reactor control rooms for blackmail.
- Large-scale sabotage outside NF until blackout.
- Capture of safety-critical systems.
- Terrorism or sabotage using RM in transport.
- Unauthorized removal of radioactive materials.
- Man-made sabotage inside of nuclear power units.

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IV. Results

- **Recognize increased insider threat.**
- **Additional measures to identify and counteract insider threats.**
- **Anti-sabotage measures.**
- **Availability of internal perpetrators.**
- **Enhance nuclear security culture.**
- **Information exchange.**

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V. Proposals

- **Intergovernmental cooperation.**
- **Information exchange system.**
- **Legislation on restrictions to personnel.**
- **Interstate database.**
- **Strengthening scientific and technical cooperation.**

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List of acronyms

- **NF – Nuclear Facility**
- **NM – Nuclear Material**
- **DBT – Design Basis Threat**
- **SPPS – State Physical Protection System**
- **RM – Radioactive Material**
- **ATO – Anti-Terroristic Operation**
- **UAV – Unmanned aerial vehicles**
- **PPS – Physical protection system**
- **IED – Improvised explosive device**



THANK YOU!