



**NATIONAL NUCLEAR CENTER
OF THE REPUBLIC OF KAZAKSTAN**
Ministry of Energy of the Republic of
Kazakhstan



NUCLEAR PHYSICAL SECURITY



Motivation



❖ NUCLEAR TERRORISM :

- ✓ Unauthorized removal on purpose to manufacture of self-made explosive devices
- ✓ Unauthorized removal on purpose of dissipating
- ✓ Sabotage with relation to NF, NM and other radioactive materials

❖ CRIMINAL MOTIVATION

❖ POLITICAL COMMITMENT

❖ RELIGIOUS EXTREMISM

❖ SABOTAGE, DEMONSTRATIONS

Nuclear security measures - is part of the global security measures, which deals with threats of nuclear security and includes international obligations, agreements and other international instruments.

Nuclear security measures are directed against...

Prevention



Intrusion detection



Response



... nuclear theft, sabotage (diversion), unauthorised access, unauthorized movement or other abusive actions in relation to nuclear materials and other radioactive substances or nuclear facilities.

Normative legal base

- ✓ Provides a framework for balancing of the risks and benefits on national and international levels;
 - ✓ it includes both "hard" and "soft" law;
 - ✓ it includes a set of basic principles;
 - ✓ Describes illegitimate acts, such as crimes related to nuclear terrorism
- The traditional position to nuclear law covers four main areas: nuclear safety, physical security, safeguards and responsibility

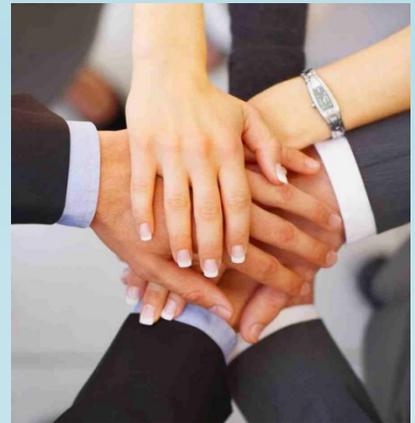


International law

LEGALLY BINDING INSTRUMENTS

Convention on the physical protection of nuclear materials (145 members) and the amendment d/d 2005

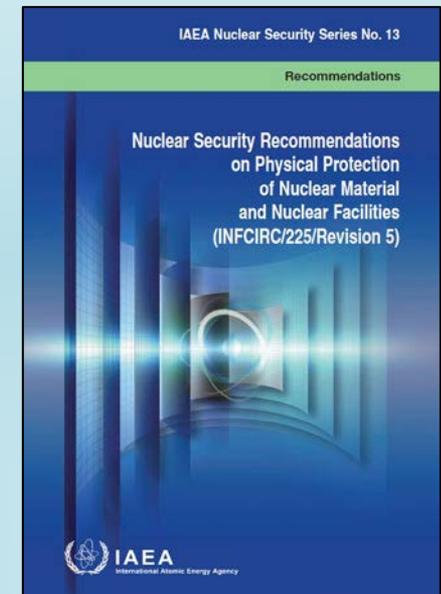
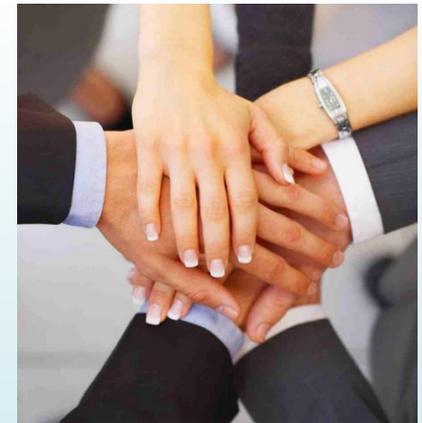
- **Convention on suppression of acts of nuclear terrorism
UN Security Council Resolution 1540, 1977, 1373**
- **Non-Proliferation Treaty**
- **Agreement on comprehensive safeguards (INFCIRC 153)**
- **Additional protocols (INFCIRC 540)**
- **Agreements INFCIRC / 66**
- **The rules on export and import control**



International law

NOT VALID

- **Code of conduct on nuclear and physical nuclear security of radioactive sources (INFCIRC / 663) (INFCIRC / 663)**
- **Instructions on the import and export of radioactive sources (INFCIRC / 663)**
- **Physical protection of nuclear material and nuclear facilities (INFCIRC / 225 / Rev.4 Rev.5)**
- **Fundamentals of physical protection approved by the Board of Governors in September of 2012.**
- **Code of conduct on the nuclear security of research reactors (GOV / 2004/4 and Corr.1)**

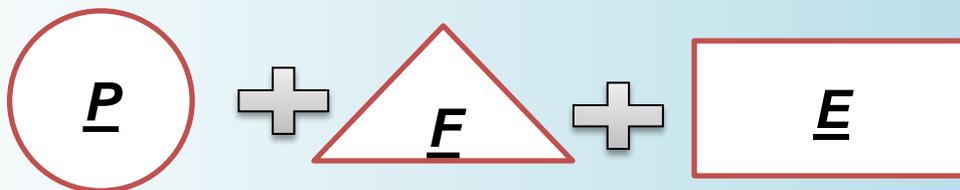
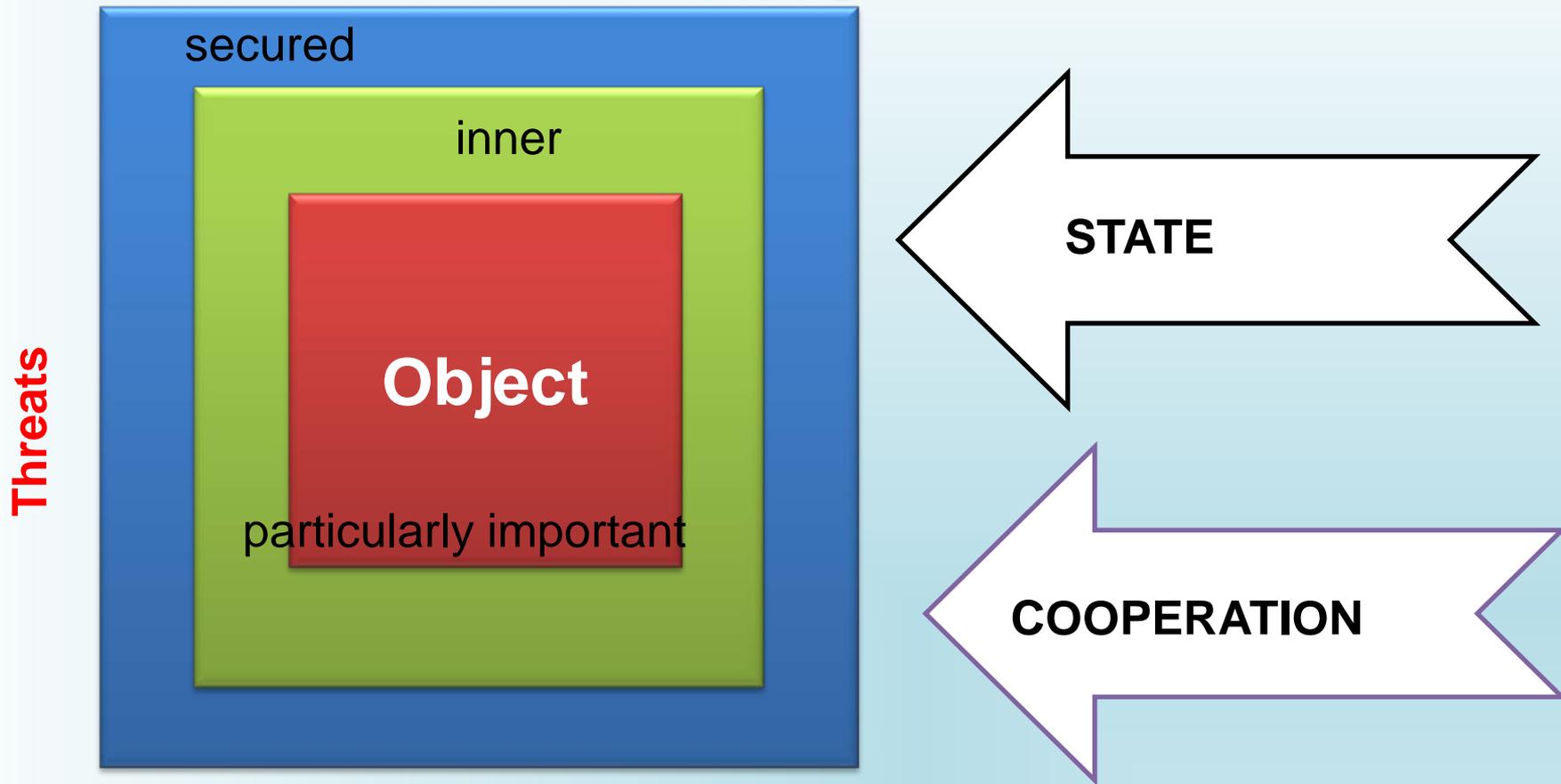


Kazakhstan legislation

- RKL «atomic energy uses»
- RKL «ratification of agreement on the IAEA safeguards»
- RKL «ratification of the additional protocol to agreement»
- RKL «accession Kazakhstan to a convention of the physical protection of NM»
- RKL «ratification of the amendment to the convention of PP»
- RKL «resolution and notifications»
- RKL «Official Secrets Act»
- TRRK «dangerous goods regulations»
- TRRK «on some issues of licensing»
- TRRK « instruction on security control»
- Interdepartmental authorizing documents, instructions and regulations



Construction principle of NPS of NHO



REGIONAL MULTI-LAYERED DEFENSE OF NUCLEAR-HAZARDOUS OBJECTS

International cooperation.

Training centre of NPS. Almaty, INP.

The history of: dates back to :

- 2005, Washington, DC, protocol of working group decision
- 2010, signing of a contract on the construction
- 2013, training of instructors, the US, Russia, Kazakhstan
- 2013 pilot courses for nuclear material accounting
- 2014, the first complete courses for nuclear material accounting

Principal directions

- Physical protection of nuclear materials and nuclear facilities.
- Nuclear material accounting.
- Protection of facilities uses atomic energy and response.
- Prevention of illegal trafficking of nuclear and radioactive materials

International cooperation. Transport control center.

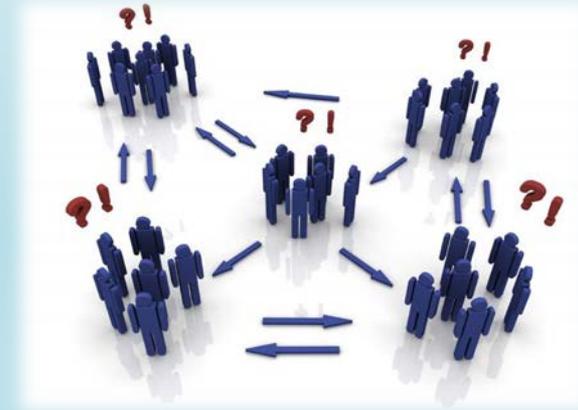
General objects

Organization of safety and transportation of nuclear and radioactive materials

- Centralization and monitoring of transport transportation of nuclear materials and radioactive materials
- Control and prevention of illegal trafficking of nuclear materials and radioactive materials

Basic objectives

- Condition monitoring of alarms signals of PPS of transport
- Position finding, geolocation
- Reduced response time, operational coordination



THE HISTORY OF CTC:

- ❖ Energy partnership of the US Department of Energy and Nuclear Energy Committee of MINT RK (carrying-out of the programme "Global Threat Reduction Initiative") under agreements of Kazakhstan and the United States in the field of nuclear non-proliferation
- ❖ The framework agreement between Research and Development Center of nuclear technologies safety and Oak Ridge National Laboratory USA
- ❖ The decision of the CAE about creation of CTC on the base of "IAE" branch of NNC RK
- ❖ Technical interchange meeting composed of representatives of OAEU and transport companies (promulgation " Enactment of CTC" and " Technical design assignment, creation and supporting of CTC")
- ❖ Design and estimate documentation development
- ❖ Restructuring of the program
- ❖ Selection of the building and premises, construction - installation works, procurement of equipment and materials for CTC

2014

2015

Long-term cooperation to support of CTC activities

STRUCTURE OF THE CTC

ЦТК



TECHNICAL CAPABILITIES OF CTC

- INNER SYSTEM OF PHYSICAL PROTECTION
- PP SYSTEM OF TRANSPORT
- TRUCK-TO- TRUCK RADIO COMMUNICATION
- CELLULAR COMMUNICATION
- SATELLITE COMMUNICATIONS
- GEOLOCATION
- SECURE DATA TRANSFER
- ADDITIONAL FUNCTIONS AND EXPANSION FLEXIBILITIES



THE MAJOR ADVANTAGES

- LEGALLY PROTECTED ACTIVITIES
- AVAILABILITY OF OWN BUILDING EQUIPPED BY ENGINEERING AND TECHNICAL SYSTEMS OF PHYSICAL PROTECTION
- NO INTERNET ACCESS
- DEPENDABILITY OF CTC PERSONNEL
- APPLICATION OF SEVERAL TYPES OF COMMUNICATION
- ANALYSIS AND ARCHIVING OF ANALYSIS OF EACH TRANSPORTATION
- INTERACTION WITH CENTRAL OFFICE





**THANK YOU
FOR
ATTENTION !!!=)**

