

# Task 4 INPRO Action Plan “Legal and Institutional Issues of Nuclear Energy Supply by TNIs”: Scope, Contents, Definitions

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# Definitions

# Transportable Nuclear Installation

The term “nuclear installation” has a number of definitions under different international instruments:

Convention on Nuclear Safety: limited to  
“land-based civil nuclear power installation”

Paris and Vienna Liability Conventions: exclude  
any reactor with which means of sea or air  
transport is equipped

# INPRO domestic team:

## Transportable Nuclear Installations

- “could be assembled and pre-tested at the factory”
- “does not operate during the transportation”
- no special requirements for the user's industrial and nuclear infrastructure
- turnkey contract basis
- can be returned to the manufacturer for maintenance or in the case of an accident

# Russian home team: Transportable Nuclear Installations

- **Serial production**
- Factory fabrication and pre-testing
- Entirely removed at the end of the lifetime
- Minimal requirements for regional infrastructure

# Subject of the study

- Legal issues
- Institutional issues
- Infrastructure issues

# Fundamental approaches

# Two main extreme approaches

- Incorporation into existing institutional framework (almost without any changes)
- Creation of a specific institutional framework (“all over again”)

**Some reasonable compromise  
has to be found!**



# Scenarios

# Domestic INPRO team: Reference Life Cycle Scenarios

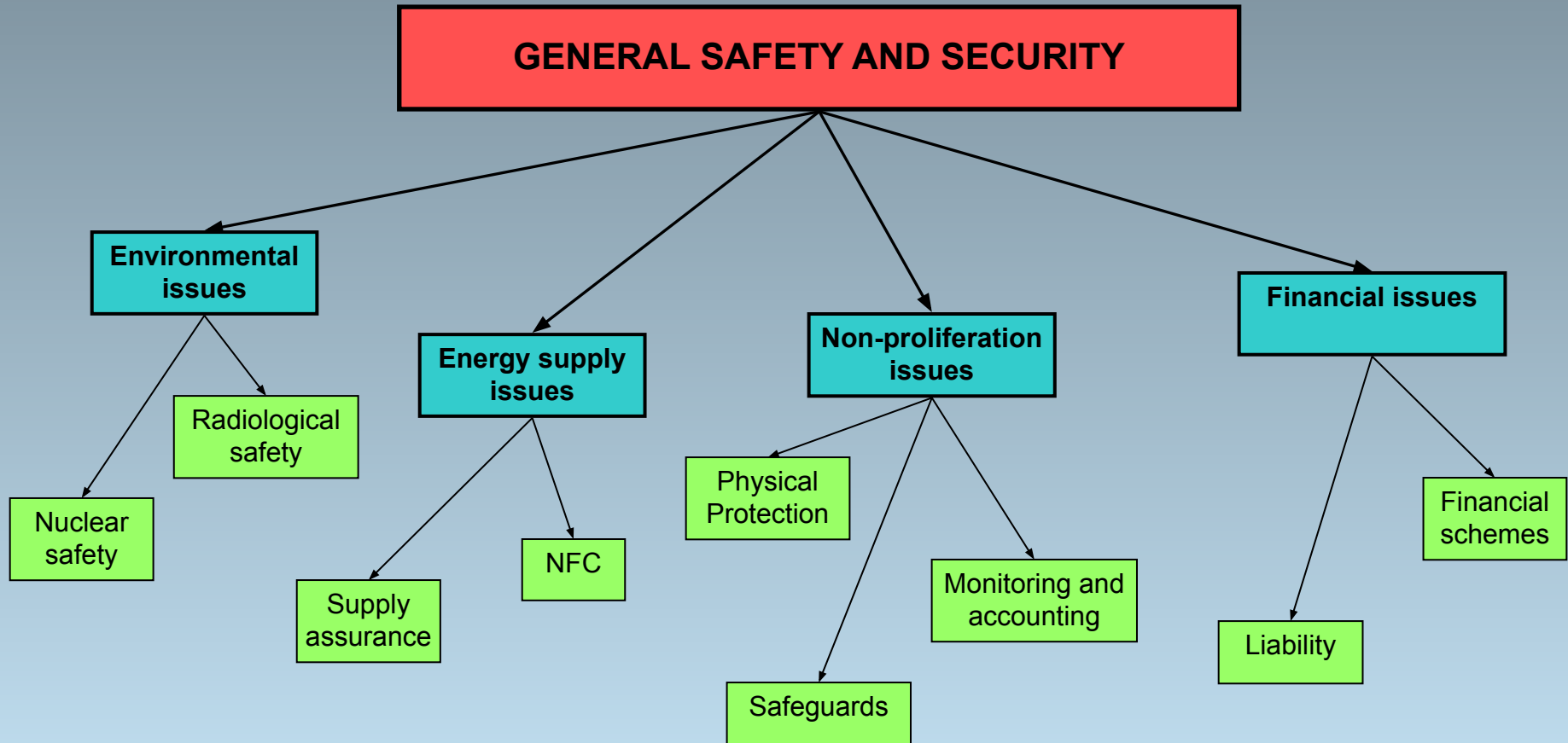
- “Domestic” scenario
- “Export” scenario
  - Supplier is operator
  - Receiving entity is operator
- “Outsourcing” scenario

# Russian home team: Reference Life Cycle Scenarios

- “Domestic” scenario
- “International” scenario (“Supplier is responsible for everything”)

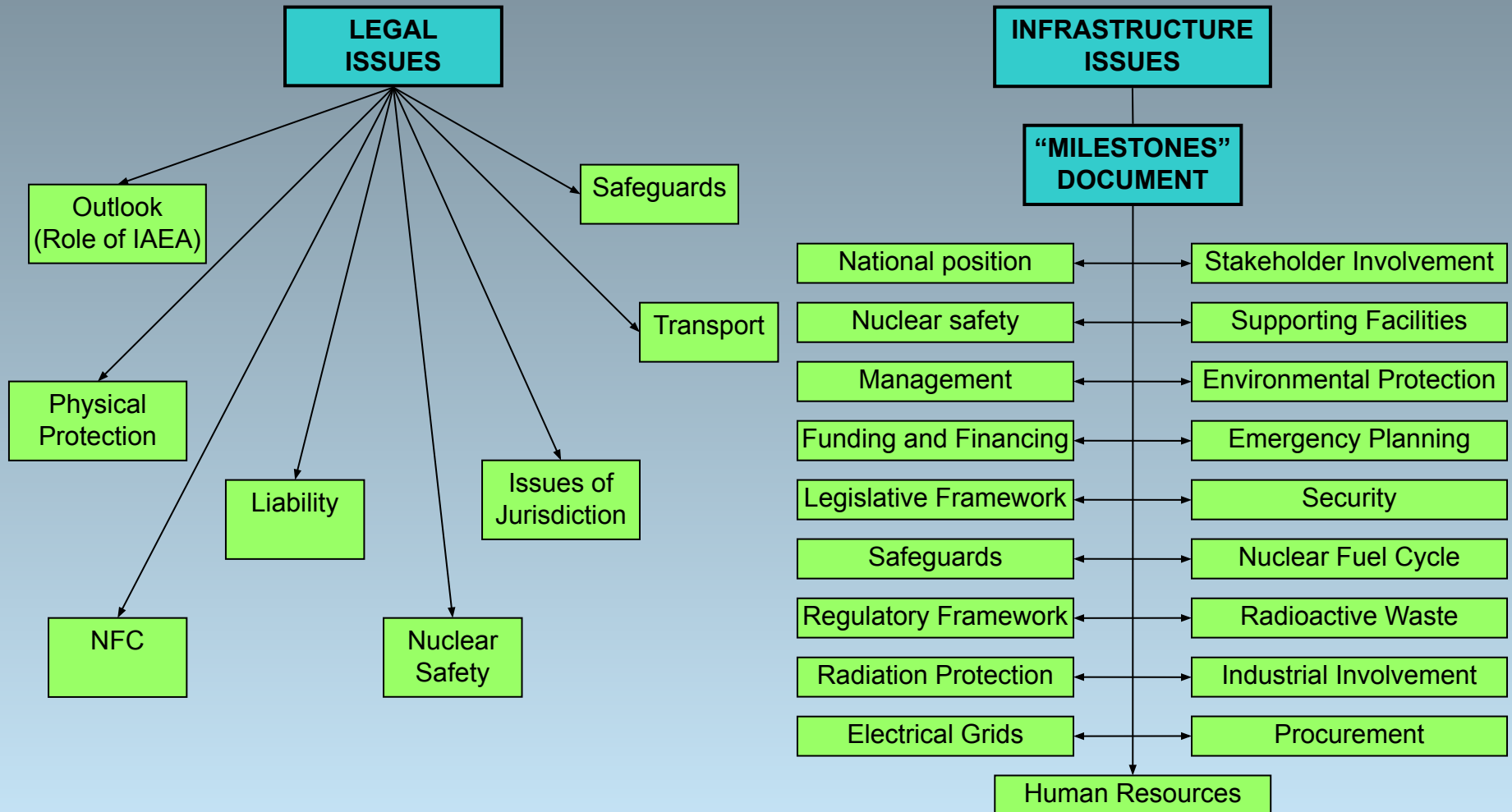
# Issues structure

# Issues Hierarchy (*Russian home team*)



# Issues Hierarchy

(INPRO Domestic team)



Issues studied

# Comparison of the issues considered

	<b>ISSUES</b>	<b>DOMESTIC INPRO TEAM</b>	<b>RUSSIAN HOME TEAM</b>
<b>1</b>	<b>Nuclear Safety</b>	<b>+</b>	<b>+</b>
<b>2</b>	<b>Nuclear Fuel Cycle</b>	<b>+</b>	<b>in progress</b>
<b>3</b>	<b>Physical Protection of Nuclear Material</b>	<b>+</b>	<b>+</b>
<b>4</b>	<b>Legal framework for Transport of TNIs</b>	<b>+</b>	<b>+</b>
<b>5</b>	<b>Outlook (Role of the IAEA)</b>	<b>+</b>	<b>-</b>
<b>6</b>	<b>Liability for Nuclear Damage</b>	<b>+</b>	<b>+</b>
<b>7</b>	<b>Safeguards/Non-proliferation</b>	<b>+</b>	<b>+</b>
<b>8</b>	<b>Infrastructure issues/</b>	<b>approach difference</b>	



# Additional issues of the study

(Russian home team)

	<b>ISSUES</b>	<b>STATUS</b>
<b>1</b>	<b>General safety and security</b>	<b>+</b>
<b>2</b>	<b>Monitoring, accounting and control of Nuclear Materials</b>	<b>+</b>
<b>3</b>	<b>Economic schemes for TNI project implementation</b>	<b>+</b>
<b>4</b>	<b>Regulatory framework for TNI's serial production</b>	<b>in progress</b>
<b>5</b>	<b>Licensing</b>	<b>in progress</b>
<b>6</b>	<b>Standardization, certification and test centers</b>	<b>in progress</b>
<b>7</b>	<b>Emergency planning</b>	
<b>8</b>	<b>Human resources</b>	
<b>9</b>	<b>Rules for announcing and providing services by TNIs</b>	
<b>10</b>	<b>Legal support of international TNI project</b>	<b>in progress</b>
<b>11</b>	<b>Legal support of Russian national TNI project</b>	<b>in progress</b>

# Liability for nuclear damage

(Domestic INPRO team)

Two main assumptions:

- 1) Liability system for TNIs will be based on the existing international instruments
- 2) TNIs is considered with respect to Vienna Convention (VC)

As a result the list of the issues that need further elaboration is presented.

# Liability for nuclear damage

(Russian home team)

What has been done:

- Review of international legal instruments related and their applicability to TNIs
- Options for the liability transitions during the life cycle of the TNI
- An expert estimation of the nuclear insurance contribution to the electricity cost

# Safeguards

Russian home team: considered not only safeguards but all the elements of non-proliferation regime

Both teams considered various specific scenarios of TNI deployment

# Safeguards

The main conclusions of the teams are **practically the same**. And they are as follows:

- There is nothing that differentiates TNIs from conventional stationary nuclear installations with regards to safeguards.
- In respect of non-proliferation TNIs are sufficiently covered by the existing institutional arrangements and do not require development of new rules and norms.

# Nuclear Safety

(Domestic INPRO team)

The section contains the detailed review of the legal instruments applicable:

- Binding: Conventions related to Nuclear Safety
- Non-binding: Safety Principals, Requirements, Standards

# Nuclear Safety

(Russian home team)

The section contains the analysis of how the specific features of TNIs and their life cycle influence the nuclear safety requirements for them.

As a result the list of the regulations recommended to develop is presented.

# Transport

(Domestic INPRO team)

The section contains a review of the legal instruments related to the transport of TNIs:

- Binding:
  - Law of the Sea
  - SUA Treaties and 2005 Protocols
  - Other binding modal instruments
- Non-binding:
  - Safety norms
  - Security norms



# Transport

(Russian home team)

What has been done:

- Review of the existing legal framework related to nuclear equipment or material transport

Output:

- Recommendations for the future development of the legal framework for TNI transport

# Physical Protection

(Domestic INPRO team)

Physical Protection section is presented as a part of Nuclear Safety section. It considers legal instruments related to the issue.

Binding: CPPNM and 2005 Amendment, UN Security Council Resolutions UNSCR 1540 etc.

Non-binding: INFCIRC/225 (Rev.4)

# Physical Protection

(Russian home team)

## Identified:

- Specific features of TNIs that are substantial with respect to physical protection
- Specific threats that must be taken into account during the particular TNI project phase:
  - Design phase
  - Transportation to the operation site
  - Operation phase

Thank you