

Specific Aspect of Physical Protection System Development for Nuclear Facility: Russian experience and lessons learned from international assistance and support activities

Physical Protection System (PPS) is intended to counteract sabotage of nuclear material and nuclear facilities as well as theft prevention of nuclear material.

According to Convention on the Physical Protection of Nuclear Material and Nuclear Facilities (including the 2005 Amendment) the State is responsible for development, maintenance and supporting of physical protection regime in its territories, and physical protection (including PPS development) at nuclear facility. The intergovernmental agreements are based on these guidelines and signed on behalf of the Russian Federation with foreign states for cooperation in the field nuclear energy use.

Along with development of nuclear facility, the Russian party can provide the foreign customer with consulting services in the field of PPS development and technical support and assistance in PPS design and equipment installation for nuclear facilities.

NIKIRET is Russian company specialized in PPS design and construction for Russian as well as for foreign customer.

Based on its experience and lessons learned from international and domestic assistance and support activities, NIKIRET has developed a basic proposal for PPS development. This basic proposal is applicable for “high power NPP”, “low power NPP” and “Nuclear Science and Technology Center”. The proposal of NIKIRET is based on:

- the fundamental principles of the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities (including the 2005 Amendment),
- general IAEA nuclear security recommendations.

At the same time, if interested State or customer has additional requirements for PPS, the NIKIRET basic proposal can be tailored accordingly. Taking into account broad Russian experience in physical protection of various nuclear materials and facilities, NIKIRET is able to design PPS of any complexity.

Process of PPS development for foreign countries typically consists of five stages. Russian party can provide assistance and support in four of them:

- 1) pre-project analysis and development of justifications;
- 2) PPS design;
- 3) building and assembling, start-up and adjustment works;
- 4) assistance in PPS operation;
- 5) PPS use (sole responsibility of foreign customer).

The proposal of NIKIRET on PPS development consists of two parts –technical (technical security equipment complex) and documentary one (facility-based documents necessary for PPS operation as a whole). The documentary part includes such documents as “Design basis threat”, “Vulnerability analysis”, Identification of secured zones”, “Conceptual solutions of PPS development”, “Technical specifications of PPS development”, “Plan for physical protection of nuclear material and nuclear facility during storage, use and transportation across the territory of nuclear facility”, “Design documentation”. The technical part is implemented through the delivery of full range of equipment and material (from technical security equipment to physical barriers), building and assembling, start-up and adjustment works, according to design documentation for PPS.

State

Russian Federation

Gender

Male

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Track Classification: PP: Physical protection systems: evaluation and assessment