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## Capacity Development of the Global Nuclear Safety and Security Institute in the Field of Nuclear Security

Capacity building for the development, implementation and sustainability of a national nuclear security regime and the physical protection of the nuclear material and nuclear facilities is a key objective and essential part of nuclear activities for States with an advanced nuclear power programmes and for those that are just starting to implement a nuclear power or nuclear research programme. This capacity includes, inter alia, training in the nuclear security and physical protection. In 1993, the Intersectoral Special Training Center was established to train Russian specialists in the field of physical protection, which was later transformed into the Global Nuclear Safety and Security Institute (GNSSI). In 2017, the Institute became part of the Rosatom Technical Academy.

In the first years of its existence, the Institute was, first, a national training center, carrying out practical training of specialists in the field of various aspects of physical protection. With active cooperation with various competent authorities of the Russian Federation and coordination with them of its activities in training specialists in the field of physical protection and security of critical state-owned facilities, the Institute has developed and regularly implements more than 60 training programmes, of which 20 are programmes in the field of physical protection of nuclear material and nuclear facilities. More than 8,000 Russian experts in the field of nuclear security have been trained at the Institute of from 1993 to the present.

Training programmes and training materials are based on a systematic approach to training, on the requirements of the Convention on the Physical Protection of Nuclear Material and its Amendment, the IAEA recommendations in the field of nuclear security, the Russian regulatory framework and the extensive experience of the State Corporation for the Atomic Energy "Rosatom" in the field.

Initially focused on internal Russian customers, the institute accumulated the broadest practice and experience in area of establishing, sustaining and further development of human resource capacity for physical protection and security and is willing to share this knowledge with interested IAEA Member-States. Thus, the institute developed contacts with the IAEA, that is playing a central role in coordination of international cooperation and providing technical support to its Member States, upon their requests, in building their national nuclear security regimes, and other international organizations. In recent years special attention has been paid to the development of international cooperation.

In 2004, a joint project on cooperation in the field of nuclear security between the IAEA and the Russian Federation was launched. The goal of the project was to expand and adopt the scope, diversity and improve the quality of training in the field of physical protection, conducted at the Institute in Obninsk for international attendees - specialists from the IAEA Member States. With the support of the IAEA, a new outdoor training ground integrated with the central alarm station was created, the training ground and laboratories were equipped with modern physical protection equipment.

In 2018 and 2019, together with the IAEA, an outdoor training ground modernization project was implemented. The material and technical base created so far includes 7 training laboratories, 3 computer classes, a modular pedestrian and vehicle checkpoints, 2 training grounds for engineering and technical means of physical protection, a test site for technical means of physical protection and other facilities.

It is important that the broadest range of detecting equipment appears at Obninsk test site and laboratories, while training is organized in a way to deliver principals of establishing and functioning of various systems and measures. These infrastructure and approach give opportunity without imposing requirements on any nuclear security, including physical protection, system. So, Member States specialists may independently define what fits the best their States and facilities' needs.

Each year, the Institute hosts several IAEA international and regional courses and seminars; in total, more than 1,100 participants from 54 countries were trained. These international and regional events are developed and aimed at broad range of audience: senior staff, practical specialists and even students. Many of these events foresee hands-on trainings on direct operation of various physical protection tools and means and are conducted at special training test site and laboratories.

Moreover, going beyond hosting and implementing various training events at its place, the Global Nuclear Safety and Security Institute is willing and ready to share its many years of experience in the capacity building in the field of nuclear security with other educational institutions and national competent authorities, including through active participation in the International Network of Nuclear Security Support Centers (NSSC) and the International Nuclear Security Education Network (INSEN); by creating an international school of instruc-

tors in the field of physical protection, and by the participation of representatives of the institute as experts and instructors in various IAEA activities for the human resource development and for the development of training material for the IAEA and national training courses.

Key words: capacity building for nuclear security, physical protection, human resource development.

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