
Seminars and Workshops to the Physical Protection of Nuclear Materials and Nuclear Facilities in Russia and the New Independent States Development of Requirements and Needs

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Abstract: The responsible authorities in the Federal Republic of Germany (FRG), in the Russian Federation (RF) and in the New Independent States (NIS) have been working closely together since 1992 in the field of physical protection. The success of this co-operative work is based on mutually beneficial agreements between FRG and RF co-operating countries. The main working points of these agreements were a) a mutual exchange of information and experience, and b) assistance in developing licensing and regulatory procedures and guidelines, and c) physical upgrades to Russian nuclear facilities. The first two points have been established by holding seminars, workshops and by on-site instruction. Upgrades of RF nuclear installations, financed by the FRG were performed at: the Bochvar Institute in Moscow, the Kurchatov Institute in Moscow, the Mayak reactor plant in Chelyabinsk and the reactor plant in the Siberian Chemical plant near Tomsk.

This paper will outline the development of requirements and needs for the exchange of information and experience, the assistance in developing licensing and regulatory procedures and guidelines and additional assistance during upgrading Russian nuclear facilities by holding seminars, workshops and on-site instructions.

1. INTRODUCTION

Since 1992 GRS has conducted more than 40 international meetings in the field of physical protection like seminars, workshops, on-site instructions and inspections. The participants always came from Russia, the New Independent States and the Central and East European States. They were representatives from the authorities, the operators and eastern expert organisations.

GRS did this work on behalf of the federal ministry for environment, nature conservation and reactor safety as well as of the German foreign office based on mutually beneficial agreements between FRG and co-operating eastern countries.

These meetings have been located in Germany and in eastern countries like Russia, Ukraine, Kazakstan and Bulgaria (picture).

The following main working points have been the *general objectives* in these meetings.

- Exchange of information and experience regarding the documents and rules as well as the technical resources and "systems for physical protection".
- Assistance in the developing regulations and measures for guaranteeing the physical protection of nuclear materials and facilities.
- Technical advice and assistance in working out the rules for licensing and regulatory procedures.
- Common analyses of the physical protection measures and common work on technical proposals for the purpose of upgrading physical protection.

The *special objectives* of these meetings always addressed the actual requirements and needs which have developed during the last ten years.

2. DEVELOPMENT OF REQUIREMENTS AND NEEDS

In the beginning of this work in the year 1992 the situation in the eastern countries in the field of physical protection was different from the situation as today. Not every country had installed an atomic law as well as rules and regulations for this matters. Independent authorities for licensing and supervision did not exist in most of the eastern countries. The basis for the physical protection of nuclear materials and nuclear facilities were elder rules and guidelines and especially the personal measures of military troops. In the first meeting in Germany 1992 the German practice of physical protection was presented. Furtheron the participants of this meeting discussed the requirements and needs of their countries and possible future activities. Therefore in the following 4 years the seminars gave assistance to the development of the following topics:

- National philosophies of safety and security
- Rules and regulations
- Procedure of the licensing and regulatory bodies
- Concepts of physical protection of typical facilities

A more specific exchange of information and experience was started 1995 with workshops on physical protection. These workshops have been adapted the increasing significance of this subject in these countries. The following topics have been adressed:

- Requirements of the IAEA information circular INFCIRC/225
- Fundamentals of physical protection
- Licensing and supervision of shipments of nuclear materials
- Licensing and control of nuclear facilities
- Suitability of systems of physical protection
- Methods for identifying and improving the weak points of the older facilities.

In the same time GRS started to conduct on-site instructions in German nuclear facilities to show in which way modern technical physical protection systems can be implemented. In this time the operators in the eastern countries began to strengthen the physical protection systems of their nuclear facilities.

Through the on-site instructions a common understanding was reached between representatives from Germany and the eastern countries, that the installation of modern physical protection techniques can lead to a much more effective physical protection system.

Since 1999 one main subject was implemented into the workshops, which is also mentioned in the recommendation of IAEA INFCIRC/225, the Design Basis Threat (DBT). It was a special need of the eastern operators and authorities to define the basis for a physical protection system, to clarify against which threat model they have to protect the material, to identify the way for DBT definition and at last to know how to implement physical protection measures to meet the DBT in a special plant. Workshops in this way have been held e.g. in Chabarowsk and Murmansk, RF, Kmelnitzky, Ukraine, Greifswald, Germany und Kozloduj, Bulgaria.

The DBT of course is a very actual subject especially after the 11th of September 2001. In the meetings since 2002 discussions between the participants came up about possible modifications of the national DBT and the significance for the implementation of physical protection measures.

The results of seminars, workshops, on-site instructions and inspections have contributed to the basis for the common work in upgrading Russian nuclear facilities in the field of physical protection. It can be stated that GRS and the Russian partner follow the same logic in defining physical protection concepts and measures for specific plants. Until now GRS is involved in the upgrading of the following nuclear facilities in Russia: Bochvar-Institute Moscow, Gasplant Kurchatov-Institute Moscow, reactors Ludmilla

and Ruslan in Mayak near Tscheljabinsk, reactors LF3 and LF4 in the Siberian Chemical Plant near Tomsk.

During this common work it is always important to give, if necessary, examples by the German side in which way the existing physical protection system could be modified. For this items every year working meetings in Germany are held for the representatives of the plants and the operating organisations in Russia like Minatom or Kurchatov-Institute. Examples for subjects in this meetings:

Up to now the military troops of the Ministry of Interior have been the main component for the physical protection of the plants. These are mostly equipped only with one older security centre. In the last year in RF a new law was installed which demands that every nuclear facility has to install an independent guard service for the physical protection in addition to the military troops. That means also that the independent guards have to work in a second security centre which is funded by the German side in selected common German-Russian projects. For this item working meetings in German nuclear facilities are held for the independent guards services to demonstrate how to work in a modern security centre and to give examples for the structure and administrative organisation.

What are the requirements and needs for the future?

- Continuation of the workshops concerning the implementation of physical protection measures regarding the DBT. Especially with respect to the inner threat model with
 - Analysis of actual types of facilities
 - Identification of relevant areas which have to be protected
 - Determination of physical protection measures
- Continuation of the working meetings concerning the installation of an additional independent guard service
- Participation of German representatives of supervising authorities and GRS in state inspections in specific nuclear facilities in various countries. To optimize the procedures in the eastern countries it is very useful to discuss and to compare the advantages and disadvantages of these procedures. This is a special need expressed by Gosatomnadsor Russia.
- There is also a big need in the eastern countries to get information about modern physical protection techniques. It is planned to have special working meetings together with the producers of such techniques and include a training about the implementation and the operation.

Since the 11th of September 2001 the situation also in the field of physical protection has partly changed.

During the G8-meeting in Kananaskis in Canada a big support program for the Russian Federation was decided. GRS will be deeply involved in the implementation of the planned projects.

Up to now the programs for upgrading of the physical protection of nuclear facilities in RF as well as the seminars, workshops and on-site instructions addressed the peaceful use of atomic energy and the transport of nuclear fuel.

In future the physical protection of disarmed submarines as well as of transport and storage of nuclear weapon material and of High Active Waste coming from the weapon production will be additional subjects.

Future seminars and workshops will also accompany this very important programs.

3. CONCLUSIONS

Seminars, workshops and on-site instructions are very important for the development of a high level in the field of physical protection in the eastern countries. This concerns the physical protection of specific

nuclear facilities and transport of nuclear material as well as rules and guidelines and procedures of the licensing and supervising authorities.

GRS will continue this work in future with respect to the developing requirements and needs of the eastern countries in fulfilment of the intentional support to the physical protection of nuclear installations and transport on behalf of the German ministries.