Waking the CBRN bear

V G Petrov, Head of Laboratory at the Institute of Applied Mechanics of the Russian Academy of Science, explains how Russia's CBRN services are marching into the modern world

RUSSIA'S CBRN services are soon to undergo a complete modernisation programme. There are several reasons for this, including the significant reduction of CBRN troops in Russia's MoD connected to the new military concept in which it does not expect large-scale nuclear war, as well as the signing of the convention on the prohibition of chemical weapon. At the same time, there were also new calls because of what there was a redistribution of responsibility for this service between other departments.

Russia's modern CBRN services are the successors of the CBRN system which was created in the Soviet Union, which was a powerful system based firmly on military and civil educational research and industrial organisations. It is necessary to note that the crisis within this system is not necessarily connected with the end of Soviet Union. In fact, it dates back a little earlier to the response to the Chernobyl atomic power station (APS) disaster. In light of this failure, checks of the service were carried out. The MoD CBRN troops bore the brunt of the consequences for the failure. Out of 600,000 participants of the Chernobyl response, nearly 200,000 were MoD troops, including reservists. As an officer, I participated in such works in the summer of 1986.

Chernoybl has been a lasting legacy and touchstone ©IAEA

Despite of selflessness of the participants in the response, it was obvious that the CBRN service did not meet modern requirements. There was no robotics for working in conditions of extreme radioactivity, and there were problems detecting radiation and controlling radioactive emissions. Much dangerous work was carried out with great risk to life and health, and there were plenty who became ill and died after this work. It became obvious that modernisation of the CBRN troops was required.

The new stage in the modernisation of the CBRN service was begun after the end of the Soviet Union. The military concept of Russia was committed to not escalating nuclear arms, and to their reduction on principles of nuclear parity. The convention on the prohibition of chemical weapons was also signed in 1997. It became obvious that to have such a CBRN system as we had in the Soviet Union was not meaningful. Therefore the number of military faculties in this area at civil high schools was reduced, and the profile at military high schools was also decreased. In effect, the overall number of CBRN troops in the MoD was reduced. It became clear that the CBRN service should consist of compact, highly organised and mobile groups of professionals equipped with modern equipment.

At the same time, new modern requirements for the CBRN service were being defined. Insurgents in the Northern Caucasus sometimes used toxic substances such as chlorine in acts of terrorism, where cylinders were buried with the usual land mines which led to a great deal of suffering for innocent people. There were also threats on the part of insurgents to use radioactive bombs and even compact nuclear land mines in acts of "dirty" terrorism, and

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also there was the threat of an attack on nuclear power stations or manufacturers of dangerous chemical.

Other modern problems for the CBRN service included the threat of biologically active materials – the biological weapon. Because of the reduction in threats from the application of nuclear and chemical weapons, on a new level the threats connected to the biological weapon grew. Therefore the CBRN services undertook the task of controlling the activators of dangerous epidemiological diseases, such as the bird flu, anthrax and so forth, and the elimination of epidemics.

In connection with the new tasks of the CBRN service there was a redistribution of responsibility between various departments – the MoD, FSB and the Ministry of Emergency Measures. It is the åoD's responsibility to use the CBRN troops in situations of military action or in the event of large-scale technical failures such as Chernobyl. Also, the MoD's CBRN troops are now involved in the destruction of chemical weapon, dangerous components of rocket fuel and other work on recycling toxic and radioactive components of old military engineering. The FSB uses CBRN services for anti-terrorist purposes. One example of such use was during the capture of hostages in Moscow in 2002.

The Ministry of Emergency Measures is engaged in matters of public protection, such as from chemical threats caused by technical failures and emissions of dangerous substances, as well as protection against the influence of biologically active materials. This was demonstrated recently in the drawing up of a plan for the protection of the population from epidemics such as bird flu. The responsibility of these groups also includes the neutralisation of dangerous industrial waste, such as PCBs, and also old poisonous chemicals such as pesticides.

The tasks of various departments frequently overlap, and co-ordination between these services is required during major incidents. For this purpose, trainings for the services is regularly carried out. Co-ordination of the actions of different groups is carried out, as a rule, by one staff. As an example, it is possible to see the results of counter-terrorist training in Kambarka (Udmurtiya), which happened in 1997 and 2002.

Because of the disparate tasks CBRN services undertake, it is necessary to note the various degrees of technical equipment for such services by various departments, and also the various degrees of professionals training. For the MoD, professional training will be carried out in military high schools whereas, for the tasks of the Ministry of Emergency Measures, training is carried out in the specialised faculties of civil high schools.

The technical maintenance of the MoD's CBRN services is easy, due to the fact that domestically manufactured products are mostly used. The technical maintenance of services of other departments often falls within the framework of inter-state partner projects, as they can include foreign products. It is supposed to equip the CBRN services with detectors and devices of high sensitivity and accuracy, which also work in a real and near-real time modes, computer aided as much as possible. The modernisation of the means of decontamination, deactivation, disinfection and other special requirements will be carried out according to a modern level of scientific and technical development in this sphere.

As an example, it is possible to see the results of the distribution of responsibility for such CBRN services among the various departments in Udmurtia. In Udmurtia there are two sites for the destruction of chemical weapons – in the city of Kambarka and in the settlement of Kizner, located according to the chemical weapons convention. The responsibility for the safe destruction of chemical weapons in Udmurtia lies with two battalions of MoD CBRN troops located directly on these sites. The task of the CBRN services of the Ministry of Emergency Measures includes the protection of the population living near to destruction sites, the control of dangerous industrial production in the region and the neutralisation of dangerous industrial waste and sub-standard poisonous chemicals. Together with public health services, efforts to control the spread of epidemics will also be carried out. As was already explained, co-ordination of these services between various departments will be practiced in joint training.

Thus it is necessary to note that the modernisation of the CBRN services in Russia will now be carried out. In modern conditions the highest priority is given to questions of protection against acts of terrorism involving the use of the weapons of mass destruction, and also protection against biological weapons. The technical re-equip of the CBRN services will be carried out according to latest scientific and technical achievements in this area.

Department	Application of the CBRN services
The Ministry of Defence	Used in conditions of military actions, resolving the consequences of large technical failures; destruction of chemical weapon and toxic components of rocket fuel; neutralisation of toxic and radioactive substances during the destruction and recycling of old military engineering; resolving consequences of large epidemics
Federal security service (FSB)	Action against threatened acts of terrorism using dangerous chemical, radioactive and biological materials
The Ministry of Emergency Measures	Protection of the population in conditions of technical failures and dangerous industrial emissions; the control and the prevention of dangerous epidemics; neutralisation of dangerous industrial waste, old pesticides and poisonous chemicals