**Workshop „Contamination of ground and surface water**

 **– Risk of future catastrophes“**

 Sixth workshop from the series **„Prevention of catastrophes – protection of inhabitants and environment”** named “**Contamination of ground and surface water – Risk of future catastrophes” took place in Prague on September24, 2015**. Similarly as the previous workshops in the series this event was organized by the Czech Association for Environmental Care together with the Czech National Committee for Disaster Reduction. The workshop attracted more than 60 specialists from the state and public administration and crisis management, nongovernmental organizations and specialists from industry and education from the Czech Republic.

The main goal of the workshop was to focusing on problems with so-called Old Ecological Loads (OELs), Occurrence of their sites in the country has been relatively well mapped and theirs numbers and potential danger could surprise anyone from us. The workshop also showed some possibilities of financing remediation of contaminated sites in communities. OELs usually have negative impacts on a quality of water causing potential critical situations. Therefore, it is very important to raise public awareness of dangerous contamination of ground and surface water by OELs and also by other factors. Especially sources of drinking water have very often been contaminated not only from agricultural and industrial activities but also by an insufficient maintenance of water distribution systems (piping).

This year we have witnessed very dangerous microbial contamination of the drinking water distribution system in the Dejvice district of Prague. Similar events have appeared also in other sites of our country like Novy Bor, Prachatice and elsewhere. However, there have also been other types of critical situations connected with water and its quality. This hot and dry summer showed a very negative and dangerous impact of drought on drinking water supply systems and a quality of water. We need to be better and adequately prepared to face such kind of critical situations. Discussions taking place during and in the end of the workshop lead to conclusions it is high time for solving OELs problems and also improvement of maintenance and capacity of public water distribution and sewage systems, water houses and other infrastructure as well as very dangerous premediated water contamination cannot be excluded.

***The program of the workshop covered 11 lectures:***

* 1. **Petr Vučka, *(****EKOSYSTEM, Ltd.)*: **“Introduction to actual problems with water contamination“**

**Pavel Punčochář*, (****Ministry of agriculture of the Czech Republic):* **„Present state of contamination of sources of water in Europe“**

**Vít Kodeš, *(****Dept. of Water Quality, Czech Hydrometeorological Institute)***: „Quality of ground and surface water in the Czech Republic, its trends and developments”**

**Jaroslav Žák,***(Ground Water Protection, Ltd.****)***: „**Old ecological loads, their origin and potential danger - possible means of their decontamination”**

**Petr Stejskal,** *(State Environmental Fund):* „**Financing of decontamination of old ecological loads – financing possibilities for communities“**

**Zbyněk Vencelides,** *(Ground Water Protection, Ltd.****)***: **“Risks arising from neglecting old ecological loads, their influence on ecosystems and ground water and possible negative impacts in future”**

**Petra Najmanová,** *(General directorate of Fire and Rescue Service, Prague):* **„Role of Fire and Rescue Service in events connected with occurrence of dangerous substances”**

**Monika Sára Lindová, *(****Dept. of Crisis management, Municipal District Authority, Prague 6):* **„Recent contamination of drinking water in Bubeneč and Dejvice districts”**

**Matěj Čermák,** *Dept. of Epidemiology, Prague City Health Station:* **„Hygienic problems of drinking water contamination”**

**Zdena Jágrová*,*** *Dept. of Epidemiology, Prague City Health Station:* **“Accidental microbial drinking water contamination in Prague”**

**Alexander Dellamária,** *(Dept. of Crisis management, Municipal District Authority, Prague 9):***„Role of media in crises or how to spread panic”**

*After the discussion moderated by I. Obrusník the final conclusions were summarized by P. Vučka and I. Obrusník. Some of the comprehensive conclusions in a shortened form are as follows:*

1. Micro pollutants like pesticides originating from agriculture, pharmaceutical products and other substances often penetrate through sewage and water cleaning plants. This important and relatively new problem should be solved more effectively.
2. Old ecological loads (OELs) are heavy contaminations of water originating from improper handling with dangerous substances in the past (oil products, pesticides, PCB, heavy metals, etc.). Nowadays, only OELs produced before 1990 year could be officially recognized and their decontamination financed by the state.
3. There are many reasons for production of OELs like absence of will to solve such sources of contamination, ownership relations, underestimation of overall situation as well as a privatization and changes of legislation in the past. The support of disposal of OELs from a special state funding finished in 2005 year and better-defined responsibilities of handling this problem are insufficiently clear now.
4. A new state operational program “Environment” offers financing projects of decontamination of OELs (see web pages <http://opzp.cz/vyzvy/7-vyzva>).
5. Data of quantity and quality of ground and surface water can be obtained from monitoring results on web pages <http://hydro.chmi.cz/isarrow>.
6. It is necessary better protect the sources of both ground and surface water against possible contamination than in the past. Especially the production of drinking water should be under efficient control 24 hours a day and 365 days per year. All accidents and repairs of drinking water supplies should be handed very carefully. Microbial contamination experienced recently in some cities seems to be more difficult for handling than those one caused by chemical substances.
7. We need to care more about an efficient use of water coming from ground, surface, and drainage and also from city sewage plants. Recent droughts have showed the necessity to care more about such problems.
8. Better care should also be oriented towards sediments and their decontamination and handling.
9. Microbial contamination of water especially in cities needs a special attention with respect to cooperation between hygienic and crisis management bodies as well as education and exercising people in communities. Experience with such events has been much lower than with other types of critical situations and disasters.

Several measures comprising necessity to start a coordinated program of protection of water and water supplies in the Czech Republic at the state level have been proposed. Decontamination of old ecological loads, better care about land, and ensuring sufficient number of water reservoirs has also been proposed. Problems with water supplies often connected with agricultural activities require better adaptation to pronounced impacts of climate change. The necessity to prepare for drought and its impacts on water supplies needs much better and permanent approach by the state, regional, municipal and community authorities as well as by all inhabitants of our country.

Ivan Obrusník

Chairman

Czech Committee for Disaster Reduction