

**WHO International EMF Project**  
**8<sup>th</sup> International Advisory Committee Meeting 2003, June 8-9**

**EMF activity in Russia**

**1. THE 3<sup>RD</sup> INTERNATIONAL CONFERENCE "ELECTROMAGNETIC FIELDS AND HUMAN HEALTH. FUNDAMENTAL AND APPLIED RESEARCH" RUSSIA, MOSCOW AND S-PETERSBURG (SEPTEMBER 17-24, 2002).**

*Conference was organized by:*

- Russian Academy of Sciences (Department of a Physical and Chemical Biology)
- Russian Ministry of Health
- *World Health Organization (WHO)*
- State Research Center - Institute of Biophysics (Russian Ministry of Health)
- North-West Scientific Center of Hygiene and Public Health (Russian Ministry of Health)
- Center for Electromagnetic Safety
- Center of Bioelectromagnetic Compatibility
- Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP)

*In co-operation with:*

- *European Office of Aerospace Research and Development*
- *US Air Force Research Laboratory (AFRL)*
- International Commission on Non-Ionizing Radiation Protection (ICNIRP)
- European BioElectromagnetics Association (EBEA)

More than 120 scientists including 40 foreign ones from 17 countries (Argentina, Byelorussia, Belgium, Bulgaria, Brazil, Great Britain, Germany, Italy, China, Poland, the USA, Turkey, the Ukraine, Finland, France, Switzerland, Sweden) participated in the conference.

More than 140 reports were presented at the sessions. The proceedings of the conference were published in Russian and English languages.

In the frame of the conference the *Round table session* was held, where the results of expertise and hygienic researches of biological effects of radio frequency EMF, which were used in the 70-ties to substantiate the USSR RF EMF standards were presented.

***A retrospective analysis of materials confirmed the possibility of harmful consequences caused by chronic exposure of radio frequency EMF power flux density 50-500  $\mu\text{W}/\text{cm}^2$  on organisms.***

In the frame of *Round table session* we suggest the following primary steps needed to realise the WHO program on EMF standard harmonization:

1. To formulate a common definition of the term "maximum permissible exposure level" for EMF.
2. To admit a necessity of consideration of the study results with chronic EMF exposure during establishing the MPEL. These materials are to be an unalienable part of MPEL substantiation as well as the study results from acute exposure.
3. To admit officially a non-thermal mechanism of influence of radio frequency EMF at low intensities (less than 1 mW/cm<sup>2</sup>).
4. To develop the available methods of electromagnetic conditions dosimetric control, allowing to the sanitary - epidemiological inspection services to assess and control operatively the standards performance (radio frequency EMF standards).

## 2. RUSSIAN NATIONAL COMMITTEE ON NON-IONISING RADIATION PROTECTION

### 2.1. RNCNIRP recommendations for population about safe use of mobile phones.

Our recommendations are based on the precautionary principle of the World Health Organization, published scientific and medical studies, reviews and recommendations by scientific groups and the expert opinions of RNCNIRP members.

1. Children under the age of 16 should not use mobile phones.
2. Pregnant women should not use mobile phones.
3. Those suffering from given below diseases and disorders should not use mobile phones:
  - neurologic diseases such as neurasthenia, psychopathy, psychosteny, and all neurosis with asthenic, obsessional hysterical disorders and reducing of mental, physical activity, memory loss, sleep disorders;
  - epilepsy and epileptic syndrome, epileptic predisposing.
4. The duration of calls should be limited to a maximum of three minutes, and after making a call the user should wait a minimum of 15 minutes before making another call. The use of headsets and hands-free systems is strongly encouraged.
5. Manufacturers and retailers of mobile phones should include the following information together with the engineering specifications:
  - all of the above recommendations regarding use;
  - all relevant health and epidemiological data on mobile phones, together with the radiation exposure levels associated with the phone and the name of the measurement lab.

2.2. The News section of RNCNIRP web-site [www.pole.com.ru](http://www.pole.com.ru) now is presented in English.

### 3. *ISTC PROJECT NO. 2362P* «BASIC MATERIALS FOR RF ELECTROMAGNETIC FIELD STANDARDS» (THE TASK 1).

The Task 1 of these project have been finished.

The report (in English) includes the experimental study results on biological effects of chronic exposure of animals to radiofrequency electromagnetic field, which studies have been elaborated in 1960<sup>th</sup>-1990<sup>th</sup> in five research institutions of Moscow, St.-Petersburg and Kiev (USSR).

Retrospective analysis of 52 experiments have been done.

The report provides the analysis of chronic experiments of daily animal exposure to electromagnetic fields of radiofrequency of low intensities with power flux densities of 1  $\mu\text{W}/\text{cm}^2$  to 1000  $1 \mu\text{W}/\text{cm}^2$  and electric field intensities of 100 V/m to 1000 V/m at corresponding frequencies. The experiment conditions, kind and number of animals involved, characteristics of experimental animal groups, techniques applied to assess biological effects as well as results obtained are provided. All these data are summarized by especially developed information format (experimental chart) approved by Russian National Committee on Non-ionizing Radiation Protection taking into account correspondent forms recommended by IEEE.

- *The results provided for chronic EMF exposure of UHF and SHF frequency bands of 300 MHz to 30 GHz with power flux density of 1 to 1000  $\mu\text{W}/\text{cm}^2$  give the opportunity to get the following conclusions:*
  - 100-500  $\mu\text{W}/\text{cm}^2$  PFD in case of chronic daily exposure can induce expressed and persisting pathological biological reactions;
  - $\sim 50 \mu\text{W}/\text{cm}^2$  PFD is the threshold value of the unfavorable biological effect;

- $\leq 10\text{-}20 \mu\text{W}/\text{cm}^2$  PFD does not induce visible biological changes in small laboratory animals in case of the chronic exposure.
- *Chronic EMF exposure results for high frequency band of 10 to 300 MHz* (electric field intensity of 20-150 V/m) conclude to the followings:
  - 100-150 V/m intensity can induce expressed and persisting biological changes in case of the chronic exposure;
  - 20-30 V/m intensity is the threshold value of the unfavorable effect;
- 4. During the last year two issues devoted to EMF problem were published:
  - 1) **“ELECTROMAGNETIC FIELDS AND HUMAN HEALTH”**. *Editor prof. Grigoriev Yu.*
  - 2) **“ELECTROMAGNETIC FIELDS AND POPULATION”**. *Editors prof. Grigoriev Yu and Vasin A.*

## **5. GENERAL PUBLIC RELATION**

There is a heightened public concern regarding mobile phones and base stations. Especially it is respected to base stations sited in the Moscow metropolitan railway (about 100 base stations).

We continuously communicate with population basing upon our knowledge on EMF health effects. This communication is arranged via TV, radio broadcasts, newspapers and RNCNRP website.