I. General research activities in Bulgaria related to EMF health

A. Ongoing projects

There are no any research projects ongoing in 2010.

B. Ph. D. theses:

*Exposure and risk assessment of UV radiation in the working environment*

A Ph.D. thesis of M. Ivanova, research assistant, medical physicist, a member of the Bulgarian National Program Committee. The defense of the doctorate is forthcoming.

C. International collaboration

*Pilot study of TRANSEXPO in Bulgaria*

**Funds:** EPRI (Electric Power Research Institute)

The first stage of the project ended. Final report prepared by Dr. Leeka Kheifets.

II. New Policies and Legislation regarding EMF exposure

1. Council Recommendation of the Limitation of Exposure to the General Population **EC/1999/519** is in a stage of implementation in Bulgaria. After the “*Information exchange meeting with Member States on the implementation of Council Recommendation 1999/519/EC (electromagnetic fields)*”, May 3, 2010, Brussels, the final report of the EC for Bulgaria contains the following:

“Bulgaria is an active member of the WHO International EMF Project. It is also a reference centre for spreading standards in the Balkans. Communication on EMF in Bulgaria must be improved. Information is poor and inconsistent, operators disregard the rules and people do not want to see their landscape affected. As a result, ICNIRP guidelines not adopted except in some cases. There is a proposal to define exposure zones according to different types and durations of exposure. In the "first zone", reference levels would be compliant with ICNIRP, in the "second zone", they would partially comply with ICNIRP and partially with IEEE and in the "third" and "fourth" zone; special provisions would apply based on the more
stringent Eastern European school. This is achievable by industry. There is a disagreement among various national authorities.”

Finally, we had the success to decrease the discrepancies between the BNPC, the administration of the Ministry of Health, the industry, and the formal representatives of the general population, and changes in the Health Law, new Ordinance on the basis of our proposal in 2003 have been discussed for implementation.

The changes in the Health Law follow parts of the policy of “Model Legislation for Electromagnetic Field Protection”. There new chapters include the following:

1. All sources of EMF radiation (depending on frequency and power of irradiation) have been included in the list of “objects for public purpose”, that have special requirements for control.

2. The health minister is responsible for observation the requirements of public EMF exposure and control.

3. The regional hygienic inspections should collect information about the EMF sources of radiation, and to provide measurements on public complaints.

4. The control of the EMF sources includes 2 stages: theoretical evaluation of the safety zone around the source, and measurements after switching on the irradiation.

5. The minister is responsible to organize the collection of information about the EMF levels, and to spread this information to the population.

6. Precautionary approach has been implemented for different sources of radiation – stationary (labels, warnings) and products in the market (GSM, MW ovens, different small antennas at home).

In addition, a draft of an ordinance consisting exposure limits (basic restrictions and reference levels), requirements for control, measurements, and calculations of the EMF levels. The exposure limits are divided into two zones of exposure depending of the possibility for achievement for the people:

First zone, where the people access is difficult or impossible;

Second zone, where general population have access.

One “precautionary zone” is defined only for frequencies 850 MHz – 2150 MHz.

The exposure limits accepted for the first zone are the ICNIRP values for public exposure. For the second zone the limits are the same used now in Bulgaria, and for the precautionary – 10% from the limits used in the second zone.

The ordinance implements methods for theoretical evaluation of EMF values around the sources of radiation, measurement of the reference levels, calculation of basic restrictions from the reference levels, requirements for collecting technical and exposure data of EMF levels, requirements for control, etc.

Unfortunately, there is no word about any continuous collection of data of measurements, permanent or periodical control of the EMF levels (how often or how many sources per year), no requirements for competence of the experts doing measurements.

The opinion of the BNPC to solve all problems concerning legislation, public concern especially in situation of crisis and permanent lack of funds is to follow the practice of Israel in this area. The Wave Guard Technology developed in this country and in practical use from
2010 shows very important results:

- Continuous measurements 24 hours
- Data of EMF levels everywhere on public access
- Collaboration between government and industry
- Permanent control of every source of radiation
- Decrease of the expenses for measurements and monitoring
- Good practice for keeping competence of measurement
- Real management of the processes of implementation of sources of radiation
- Real control by the responsible minister of in regional level
- Reliable information for the general population

Our BNPC, also the NCNIR will fight for implementing this revolutionary technology in our country, and the first steps in this direction are the changes of the Health Law proposed and developed by those organizations.

2. Directive 2004/40/EC of the European Parliament was stopped for discussion while the EC would have new proposal for implementation.

The BNPC inform the two ministries – Health and Labour, that new ordinance should be developed next year for implementation and for harmonization with the European exposure limits. The problem is that after the implementation of the Ordinance for EMF public exposure, a discrepancy between the limits for workers and general population has been found.

3. Directive 2006/25/EC of the European Parliament is in action from June 2010. Training of personnel in the field of safety with optical and laser radiation is going on, also for specialists in control inspections belonging to the Ministry of Health.

III. Areas of public concern and national responses

Public concern

Three GSM operators work in Bulgaria. The new mobile technologies as UMTS (3G), Wi-MAX (4G), Wi-Fi are in development since 2006. More than 6 millions of people use cellular phones (about 80% of the population).

Public concern is growing very fast and more and more people want to remove the base stations from their region. People declare health problems every time but other reasons are in the floor in most of the cases.

Our experience with on site measurements of EMF, exposure assessment, from application of our communication program, from discussions with representatives of the public, control functions activities, etc. shows that the fears and problems existing amongst the public can be generalized as follows:

- There is confusion and fears from diseases and health consequences;
- People ask questions about the possible health effects on children;
- There are interests connected with financial-economic benefits posed by individuals;
- There is a lack or very poor or inconsistent information concerning EMF health effects on human body;
• Mobile operators and other companies disregard public interests in areas where sources of EMF radiation are built up;
• People don’t want their landscape to be changed after mounting the antennae;
• There are people with chronic diseases that might aggravate the fears of EMF effects.

On other hand, many private laboratories accredited according to EN 17020 by the National Accreditation Service don’t have enough competence for such measurements. Many times they are no so honest in there activities amongst the population. They go to places where public concern is very “hot”, and try to make their own advertisement for further business policy. Very often they give protocols of measurements “by the telephone” without any real data of measurement.

The Bulgarian National Program Committee on NIR had the following activities in the field of public relations and risk communication, as follows:

1. Regional meetings concerning the risk of EMF human exposure have been organized several times with the attendance of the industry, regional administration, NGO’s:
   • in “critical” or “sensitive” regions;
   • media
   • initiatives of public committees;
   • annual workshop of the Bulgarian National Program Committee on EMF.

2. Organization of press conferences in every region with high level of public fears including representatives of regional authorities, media, NGOs, political groups, population.

3. The specialists from our BNPC are spending most of their time to answer to asks and complaints of people against mobile base stations, and from several months, in-built transformers as well.

4. Research Centre of Non-Ionizing Radiation (RCNIR) has been created on the base of Foundation “Faraday” who is a part of the BNPC.

5. The RCNIR started a project for collaboration with the Macedonian Association on Health and Safety at Work in the field of exposure and risk assessment of NIR in different occupations in Macedonia.

IV. New public information activities:

1. Training courses in the field of EMF sources, health risk, legislation, measurements, risk communication, implementation of the precautionary principle have been conducted to different groups of specialists from control laboratories, regional inspections, labour committees, particular professional groups.

2. Members of the Bulgarian National Program Committee participated on different international meetings presenting results of their work in the field of EMF. Publications in
Proceedings are available in the library of the Medical University – Pleven, also in the office of the NCNIR.

3. Website of the BNPC and Foundation “Faraday” with regional information for Bulgaria and links to the International EMF Project of WHO:

   www.emf.bg.com

4. “Hot” telephone numbers for the general population: + 3592 954 1172; + 3592 8056208; for every kind of questions in the field of EMF safety.

   Prof. M. Israel, Ph.D.,
   Bulgarian National Program Committee
   International Project “Electromagnetic fields”

   e-mail addresses:
   michelisrael@abv.bg
   michel.israel@lycos.com

Address for correspondence:
Medical University,
Pleven 5800,
1, St. Cl. Ochridski Str.,
Bulgaria