

Republic of Korea

Report on EMF Activities 9th International Advisory Committee Meeting on EMF June 2004

Public Concerns and Risk Communications

In spite of our efforts for risk communications, people are still strongly concerned about health effects of EMFs from power lines, mobile phones, base stations, broadcasting stations, etc., without exact knowledge on the health risk of EMF exposure.

The number of public appeals filed to the government office is about 30 per year for RF EMF exposure, and 70% of them are related to base stations. MIC(Ministry of Information and Communication) responds to every appeal, and takes proper actions if necessary. Regarding power lines and substations, the number of complaints filed to KEPCO(Korea Electric Power Company) is approximately 170 per year, and the number is decreasing after completion of 765 kV facilities.

A EMF web site for two-way communication (www.emf.or.kr) is under operation, which was opened in December 2002, the main contents being EMF news, FAQs and bulletin board for two-way communication as well as a general introduction to EMF, research trends and established facts on the biological effects of EMFs, laws and policies, and measurement results for EMF exposure level.

From 2004, two kinds of News Letters, one for EMF measurement standards and the other one for biological effects, exposure limits and policies, will be published and distributed twice a year.

EMF Policies

In December 2000, the MIC announced officially the ordinances for exposure limits regulating the electric and magnetic fields generated by stationary installations in the frequency range of 0 Hz to 300 GHz, including SAR limits from mobile telephones. The ordinances are in effective from January 2002.

From April 2002, the mandatory regulation for SAR limits has been applied to mobile phones. There have been a lot of controversies on the issue of releasing SAR values of handsets currently on market. From 2003, the information on SAR values of mobile phones is available to mobile-phone users from user manuals or from manufacturer's website. In 2004, a new research project for implementation of a precautionary policy was launched.

EMF Researches in Korea

In 2000, the MIC launched a 5-year EMF research project, and this is the last year of the Korean EMF Project. The total budget amounts to 9.0 billion won for 5 years. Main research topics include epidemiological studies, *in vivo* and *in vitro* studies for MF and RF exposure, as well as engineering studies. The planning for the second-phase EMF Project is under way.

The Ministry of Commerce, Industry and Energy also launched a long-term research project for power line

frequency by the end of 2002, and it will continue until 2008. The total budget is 8.0 billion won. Main research topics include epidemiological studies, *in vivo* studies, as well as engineering studies and the construction of a facility for risk communication. Major research topics currently ongoing are listed below.

Epidemiological Study

- Case-control study of cancers for the residents near high-power AM transmission (2001-2004)
- Large-scale case-control study of cancers for mobile-phone exposure (2002-2004)
- Epidemiological study for occupational RF exposure in the marine police vessels : Feasibility study for establishing occupational cohort (2003-2004)
- Large-scale epidemiological study for power-line EMF exposure : Case-control study (2003-2005) and cohort study (2003-2008)

Volunteer Study

- Large-scale volunteer study for the health effects of mobile-phone EMFs on brain functions and other physiological functions (2002-2005)
- Human study for the effects of power-line EMF on the level of melatonin and growth hormone for children living nearby and away from overhead power lines (2003-2004)

In vivo and in vitro Study

- Long-term *in vivo* study and *in vitro* study for the effects of 20 kHz magnetic field on mammary tumorigenesis (2002-2004)
- Two long-term *in vivo* studies for whole-body exposure from mobile-phone EMFs at 848.5 MHz and 1762.5 MHz (2002-2004)
- Two *in vivo* studies for local exposure from mobile-phone EMFs at 848.5 MHz and 1762.5 MHz (2003-2004)
- Large-scale long-term *in vivo* study of brain cancer for power-line EMF exposure (2002-2008)
- Long-term *in vivo* study for the effects of 60 Hz magnetic field on apoptosis of murine testicular germ cell (2002-2006)

Engineering Study

Ongoing researches in engineering area are quite active in Korea, which include development of exposure systems for biological studies, dosimetry, SAR reduction technologies, measurement of EMF environments.

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