MALAYSIA
REPORT ON EMF ACTIVITIES
19th INTERNATIONAL ADVISORY COMMITTEE MEETING, 2014

1. GENERAL RESEARCH ACTIVITIES

a) Risk Communication Research for Electromagnetic Field (EMF) from Radio Frequency (RF) by the University Of Malaya

The main objectives of the study were:

- to investigate the public perception of the effect of RF EMF on health and well-being; and
- to examine the reliability and predictive validity of different risk perceptions related to RF EMF in order to explain the relationship between risk perceptions and public behavior.

The phase 1 of this study comprised a qualitative study with in-depth and semi-structured Interviews whilst in phase 2, a quantitative study was done with survey questionnaires. In general the study concluded that while the risk of RF EMF was recognizable and unavoidable, the relevant stakeholders should be more committed to communicate and rectify the public perception of RF EMF. The debate on the risk of RF EMF will not disappear as long as the general public gets the wrong information from the internet and other sources of information

b) Malaysian Nuclear Agency (MNA) - Research & Standard Measurement Equipment

i. The NIR Group, MNA acquired the following equipment for research purposes:

- 3 -axis Helmholtz Coil with maximum magnetic field strength of 1mT
- RF Signal Generator with maximum frequency of 6GHz & 60watts power
- RF Simulation Software (single license) – Mobile Telecommunication Base Station
- Portable (handheld) EMF broadband measurement system, 3 probes cover the frequency range 5Hz – 18GHz.

ii. Student industrial training projects at MNA

The NIR Group did short projects with 8 students from local universities on the following;

- *Study of EMF profile on Helmhertz coil system*
- *Magnetic field exposure to plants using helmhertz coil system*
- *Development of radiofrequency (RF) level database for Malaysia*
- *Study on the characteristics of the various types of light bulbs commonly used in Malaysia*

- *The study of the characteristics of car headlights and the hazard to human eyes.*
- *Absorbance Spectrophotometry and Solution Concentration*
- *Effect of low frequency microwave radiation on red blood cell parameters of Sprague Dawley rats*
- *Effect of low frequency microwave radiation on coagulation profile and platelet function on rats*

iii. The Malaysian Communication and Multimedia Commission (MCMC) has initiated research related to EMF emission from radio-communications infrastructure. The MCMC has collaborated with the Technology University of Malaysia on Continuous EMF Emission Measurements and Specific Absorption Rate (SAR).These research initiatives are with the objective to develop a pool of local experts to address matters and play a more active role in the international arena of EMF safety.

2. POLICIES AND LEGISLATION

The MOH in collaboration with the Standards Research Institute of Malaysia (SIRIM) has developed the following standards:

i. MS 2226:2009 - Magnetic Resonance Imaging - Code Of Practice For Safety
ii. MS IEC 60601-2-33:2009 - Medical Electrical Equipment - Part 2-33: Particular Requirements For The Safety Of Magnetic Resonance Equipment For Medical Diagnostics (IEC 60601-2-33:2002 AMD. 1:2005, IDT)
iii. The MOH collaborated with other relevant agencies and universities to produce a circular on the "Construction/Installation of Wireless Telecommunication Infrastructure and Equipment within the MOH Facilities" (Director General of Health Circular 6/2011). This was to facilitate the installation of wireless telecommunication infrastructure and equipment within the MOH facilities to ensure the safe and efficacious operation of tele-health services in the MOH.

The MNA has initiated the preparation of the ISO17020 documentation and is expected to call for the first internal audit in the third quarter of 2014. The ISO17020 is aimed for certification of bodies performing inspections.

2. Public Information

The MCMC, MNA, Ministry of Health, together with telecommunication companies continue to conduct seminars/ forums related to EMF safety with the aim of creating awareness and disseminating the necessary information to the general public on the radiation emitted from telecommunication antennas.The MNA also conducted exhibitions and demonstrated EMF measurements and safety levels to pupils and teachers in various schools throughout Malaysia.

3. PUBLIC CONCERNS AND NATIONAL RESPONSES

The MOH had to mainly deal with a number of public complaints relating to health issues from communication towers near residential areas, schools and hospitals.

The MNA did consultancy work on “RF Radiation Measurement for Mobile Telephone Base Station (MTBS)”, “EMF Radiation Measurement at workplaces in industries” and EMF emission product testing based on requests from telecommunication companies, regulatory bodies (MCMC) and other industries/individuals in Malaysia.

Prepared by:
The Medical Physics Unit,
Engineering Services Division,
Ministry of Health Malaysia
May 2014