Sweden

Report on EMF Activities
18th International Advisory Committee on EMF
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The general public has not shown extensive concern about the EMF-topic lately. However there have been a few questions regarding exposure to RF from WLAN in schools and the use of TETRA among police officers.

The Independent Expert Group on Electromagnetic Fields of the Swedish Radiation Safety Authority (SSM) has published a new review report. In this report, covering both 2011 and 2012, an update on key issues is included such as extremely low frequency (ELF) magnetic fields and childhood leukemia, effects from mobile phones, health risk from transmitters and self-reported electromagnetic hypersensitivity. It also covers different areas of EMF (static, low frequency intermediate and radio frequent fields) and different types of studies such as biological, human and epidemiological studies. The report also has a section covering other recent reports. The report (2013:19) is in English and can be downloaded from www.ssm.se.

The Swedish Radiation Safety Authority has assessed magnetic fields in Swedish dwellings. Low-frequency magnetic fields from sources such as railways, power lines, transformer stations, household appliances and stray currents were measured in 193 dwellings. Based on these findings, the Swedish Radiation Safety Authority assesses that a magnetic field strength of up to 0.2 μT as an annual average is to be viewed as a normal level for residential environments and that annual averages exceeding 2 μT may be considered to be sharply increased compared with normal levels. However, these conclusions have no link to any potential health risks and constitute an observation made solely from the levels of magnetic fields that were measured. The findings are on a par with the outcome of similar measurements performed in 1994, indicating that the levels of magnetic fields in Swedish dwellings generally only changed insignificantly between the years 1994 and 2011. The results can be used as guidance in the process of developing precautionary strategies regarding the general public's exposure to low-frequency magnetic fields in dwellings. The report (2012:69) is available at www.ssm.se.

In 2012, the Swedish Radiation Safety Authority developed a car based system for fast, large area, spectral radiofrequency power density estimation. Since then, more than 80'000 spectral measurements have been performed with this system. Even though each single measurement is associated with uncertainties, the large number of measurements in both urban and rural areas in Sweden provides a solid basis that allows detailed statistical analysis of the general public's exposure to radiofrequency fields. In the long term, data can be used to identify exposure trends in outdoor environments. Measurements have shown that complete mapping of a town with 15'000 inhabitants and a path length of 115 kilometers is possible to perform within one day. The measurements make it possible to find hotspots in real time and to later analyze frequency components. In urban areas, base stations for mobile phones were clearly the dominating sources of exposure. The maximum power density, measured anywhere, was 510 mW/m^2. A detailed frequency analysis of median, mean, maximum and 95 percentile power densities of the separate urban and rural measurement series will be submitted to the Bioelectromagnetics journal.