

# NATIONAL AND INTERNATIONAL STANDARDS FOR WORKER AND PUBLIC EXPOSURE TO NIR

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## Abstract

The history and evolutionary record of EMF standard setting among participating nations of the world has resulted in divergent approaches. International EMF standards were recommended by IRPA in 1982. The standard was based on the thermal threshold for human diseases, were in agreement with the ANSI C95.111, 1982 standard, and introduced the whole body averaged S.A.R. (4 W/kg) based on a normal human body, in the range of FM and VHF, to be correspondent to the earlier limit for power density in the ACGIH rule, adopted in 1953 (100 W/m<sup>2</sup>). This framework of restrictions for human exposure was unmodified in later revisions by IRPA (1989) and ANSI/IEEE (1991), despite the scientific evidence showing there were low level biological effects should be accommodated. While Germany adopted the international standards in 1996, and promoted the adoption of the Rec.1999/519/CE during the German Presidency of the EU, other European Countries, inside and outside the EU, adopted a different framework of restrictions, taking into account, protection against low level biological effects due to long term exposure (Italy, Poland, Russia and the state of Salzburg, Austria in 1998, Switzerland 1999 and Liechtenstein 2008.) Despite the *harmonization campaign*, promoted by IEEE and ICNIRP (which was founded by the IRPA section, INIRC) and supported by WHO, started in the early 2000s, other countries refused to adopt this framework as it was based only on a thermal threshold (Belgium, Slovenia, Israel and China) and instead, adopted restrictions limiting the exposure parameters (electric and magnetic fields) at a lower level than the corresponding parameters considered by the IEEE and ICNIRP. A divergent approach between EU and USA has been registered for human partial exposures, too. While the US FCC rule, adopted in 1997, established the exposure limit for the head at 1.6 W/kg (SAR averaged over 1 gram of tissue) the quoted EU Recommendation raised the limit to 2.0 W/kg (averaged over 10 gram of continuous tissue).

This review will discuss the scientific and policy implications involved in EMF standard setting and, how citizens view lowered standards more positively.

