Abstract

The health effects become a safety hazard, only when it causes detectable impairment of the health of the individual or of his or her offspring. These effects may be different at different distances from the source of electromagnetic waves of intermediate frequency. In this present thesis, it is proposed to find out the harmful frequencies of electromagnetic waves and health hazards in the range of intermediate frequencies. The main aim of this work is that, the general public may aware from these frequencies of electromagnetic waves. The safe distances from the radio broadcasting towers of intermediate frequencies have been determined, so that the safe distance from the radio transmitter of electromagnetic waves from populated area may be standardized. The penetrated electric fields inside the human body tissues and the Specific Absorption Rate (SAR), which depends upon the conductivity and density of the human body tissues have been determined. The computed values of penetrated electric field and SAR inside human body tissues at different distances from the radio broadcasters compared with the safe limit of International Commission of Non-ionizing Radiation Protection (ICNRP) and World Health Organization (WHO). The change in temperature inside tissues during exposure time duration for the radio transmitters has been determined. If the computed values of SAR inside human body tissues greater than the safe limit of guidelines, it may be harmful for the health of human body tissues or cells. By the help of these safety guidelines, we have determined the harmful radiation in the range of intermediate frequency of electromagnetic waves and also the safe distance from the radio broadcasting towers.