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EXTREMELY LOW-FREQUENCY ELECTROMAGNETIC FIELD DUE TO POWER SUBSTATIONS IN URBAN ENVIRONMENT

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Abstract

The objective of this paper is to measure magnetic flux density and electric field intensity due to selected power substations in the city of Tehran to find the difference between the measured parameters and threshold levels specified in relevant standards. Hence, three types of power substations including 63, 230 and 400 kV were randomly selected. Based on confident level of 95% ($\alpha = 0.05$), 250 measurements were made at various distances from power substations. It is found that the results of data analysis were well below the recommendations in ICNIRP (2010) while, a previous study by Nassiri et al. (2012) with regard to electromagnetic field due to power substations in the city of Tehran revealed that most of the studied population (64.8%) was suspected to have mental disorders. Therefore, to study electromagnetic field due to power substation in urban environment, the adverse effect of electromagnetic field on human beings must be investigated rather than just environmental measurement of electromagnetic field.

Key words: electric field intensity, magnetic flux density, power substation

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