



Table 1. 60-Hz EMF Guidelines Established by Health and Safety Organizations

Organization	Magnetic Field	
American Conference of Governmental and Industrial Hygienists (ACGIH) (occupational)	10,000 mG ^a 1,000 mG ^b	25 kV/m ^a 1 kV/m ^b
International Commission on Non-Ionizing Radiation Protection (ICNIRP) (general public, continuous exposure)	2,000 mG	4.2 kV/m
Non-ionizing Radiation (NIR) Committee of the American Industrial Hygiene Assoc. (AIHA) endorsed (in 2003) ICNIRP's occupational EMF levels for workers	4,170 mG	8.3 kV/m
Institute of Electrical and Electronics Engineers (IEEE) Standard C95.6 (general public, continuous exposure)	9,040 mG	5.0 kV/m
UK, National Radiological Protection Board (NRPB) [now Health Protection Agency (HPA)]	2,000 mG	4.2 kV/m
Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), Draft Standard, Dec. 2006 ^c	3,000 mG	4.2 kV/m
<i>Comparison to <u>steady</u> [see footnote "d"] (DC) EMF, encountered as EMF outside the 60-Hz frequency range:</i>		
Earth's magnetic field and atmospheric electric fields, steady levels, typical of environmental exposure ^d	590 mG	0.2 kV/m up to > 12 kV/m
Magnetic Resonance Imaging Scan, static magnetic field intensity ^d	20,000,000 mG	–

- Notes: (a) The ACGIH (2010) guidelines for the general worker (ACGIH, 2010, p 124-127).
 (b) The ACGIH (2010) guideline for workers with cardiac pacemakers (ACGIH, 2010, p 124-127).
 (c) ARPANSA (2006, 2008).
 (d) These EMF are steady fields, and do not vary in time at the characteristic 60 cycles per second that power line fields do. However, if a person moves in the presence of these fields, the body experiences a time-varying field.

Table 2. State EMF Standards and Guidelines for Transmission Lines

State/Line Voltage	Electric Field		Magnetic Field	
	On ROW	Edge ROW	On ROW	Edge ROW
Florida ^a 69 – 230 kV	8.0 kV/m	2.0 kV/m ^b		150 mG
500 kV	10.0 kV/m			200 mG, 250 mG ^c
Massachusetts		1.8 kV/m		85 mG ^b
Minnesota	8.0 kV/m			
Montana	7.0 kV/m ^d	1.0 kV/m ^e		
New Jersey		3.0 kV/m		
New York ^c	11.8 kV/m 11.0 kV/m ^f 7.0 kV/m ^d	1.6 kV/m		200 mG
Oregon	9.0 kV/m			

- Notes: Most of these "status quo" state guidelines were put in place in the 1970s to 1980s timeframe.
 ROW = right of way; mG = milligauss; kV/m = kilovolts per meter.
 (a) Magnetic fields for winter-normal, i.e., at maximum current-carrying capability of the conductors.
 (b) Includes the property boundary of a substation.
 (c) 500 kV double-circuit lines built on existing ROWs.
 (d) Maximum for highway crossings.
 (e) May be waived by the landowner.
 (f) Maximum for private road crossings.
 (g) MAEFSB has made note of the "85 mG at the ROW edge" guideline value in evaluations of utility projects, but they note that AC magnetic fields below this value are not to be interpreted as a dismissal of potential EMF impacts.
 Sources: NIEHS (2002); FDEP (2008).

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Commonwealth of Massachusetts, Energy Facilities Siting Board (MAEFSB). 2010. "Final decision [re: Petitions of Western Massachusetts Electric Co. for approval to construct and operate transmission facilities and lines, and related matters]." EFSB 08-2; DPU 08-105; DPU 08-106. Accessed at <http://www.env.state.ma.us/dpu/docs/siting/efsb08-2/08-105/08-106/92810efsbord.pdf>, 166p., September 28.

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Institute of Electrical and Electronics Engineers (IEEE). 2002. Standard C95.6-2002, Safety Levels with Respect to Human Exposure to Electromagnetic Fields, 0-3 kHz. IEEE Standards Coordinating Committee 28, New York, NY.

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