

Cardinal-Hickory Creek

TRANSMISSION LINE PROJECT

EMF: Electric and magnetic fields

It is a fact of life that we all are exposed to electric and magnetic fields. Any device that uses or carries electricity creates EMFs, including everyday appliances, lighting and wiring, as well as electric power lines and equipment. Electric fields are created by and proportional to power line voltage. Magnetic fields are created by electric current.







Magnetic fields exist anywhere electric current is flowing. When a lamp is turned on, electric current begins to flow, and a magnetic field is generated. Electric fields are measured in volts per meter; magnetic fields are measured in milligauss. The strength and intensity of electric and magnetic fields quickly decrease as you move away from their source.

Third-party resources

A considerable amount of research since the 1970s has focused on whether magnetic fields from power lines adversely affect the health of those living near the lines. Peer-reviewed research has shown that there is no consistent evidence for any health effects caused by exposure to EMFs from power lines.




Household magnetic field levels

(at typical working distance)

 Coffee maker .2 to 3 mG	 Television < 0.1 to 1.5 mG	 Toaster 10 to 60 mG	 Computer tablet .1 to .2 mG	 Vacuum cleaner 230 to 1300 mG	 Hair dryer 3 to 1400 mG
--	---	--	--	--	--

Any wire or device conducting electricity is surrounded by a magnetic field.

Sources: Gauger, Jr., *Household Appliance Magnetic Field Survey*.
IEEE transactions on power apparatus and systems. PA-104.

	Voltage	Under wires	Edge of right-of-way*	100 feet away
	69,000 volts	20-25 mG	5-10 mG	.5-12 mG
	138,000 volts	35-40 mG	15-20 mG	.5-12 mG
	345,000 volts	85-100 mG	50-60 mG	.5-15 mG

When it comes to power lines, the intensity of a magnetic field is strongest directly under the line and drops dramatically with distance.

Power lines produce magnetic fields of varying intensity, measured in units called milligauss (mG).

*Edge of right-of-way is typically 40 to 75 feet away from centerline on either side, depending on voltage.

Several scientific, government and international agencies independent of American Transmission Co., ITC Midwest LLC and Dairyland Power Cooperative, including those listed below, have researched this topic. The content is informational, provided by third parties and is subject to change.

Electric Power Research Institute

Visit <http://emf.epri.com>.

National Cancer Institute

Visit www.cancer.gov and type "EMF" in the search tool.

The National Institute of Environmental Health Sciences – National Institutes of Health

Visit www.niehs.nih.gov and type "EMF" in the search tool.

World Health Organization

www.who.int/peh-emf/en

National Research Council

"Possible Health Effects of Exposure to Residential Electric and Magnetic Fields."
Visit www.nap.edu and type "electric and magnetic fields" in the search tool to download a free PDF of this book.

International Agency for Research on Cancer

Static and Extremely Low Frequency Electric and Magnetic Fields (2002)
<http://monographs.iarc.fr/ENG/Monographs/vol80/>.

Because we do not control the content, providing these links does not constitute an endorsement of all information provided in the links.

