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Magnetic field issue draws controversy

Sharp differences expressed about safety of power-line placement

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It points north on a compass. It turns the motors in hair dryers and refrigerators. And it emanates from high-voltage power lines.

But is a magnetic field harmful to human health?

That question was at the center of testimony by dueling experts Wednesday at the Minnesota Public Utilities Commission, which is trying to decide the route of a new 345kilovolt transmission line between Brookings, S.D., and the town of Hampton in Dakota County.

The line is one of three high-voltage lines planned for the state by Xcel Energy and Great River Energy in the Twin Cities. Jointly called CapX 2020, the three lines carry a price tag of \$1.7 billion, the price of shoring up the state's electrical grid to meet growing energy needs in the next decade, the utilities say.

Permits for the other lines between Fargo, N.D., and the St. Cloud-Monticello area and from Hampton to La Crosse, Wis., await PUC approval, but the commission OK'd the 230-mile Brookings-to-Hampton line in mid-April.

Now comes the hard part — drawing the exact route for the high-voltage line within a wide corridor of farmland and small towns.

State rules on rights-of-way say the power lines can be placed as close as 75 feet from their center to residential property lines.

But Dr. David Carpenter, director of the Institute for Health and the Environment at the State University of New York at Albany and a public health expert, argued on behalf of opponents that the lines should be kept more than 300 feet from residences and day care centers because studies show the electromagnetic fields have a relationship to elevated levels of childhood and adult leukemia, Alzheimer's disease and amyotrophic lateral sclerosis, better known as Lou Gehrig's Disease.

Carpenter's recommendations are controversial because the studies do not show electromagnetic fields directly cause cancer or neurodegenerative diseases like ALS.

Peter Valberg, a public health expert with Gradient Consulting in Cambridge, Mass., who testified for the utilities, said a statistical link may be present but there is no way of knowing whether electromagnetic fields actually caused the disease, and there are no good animal studies to show that.

"We've got to look at this closely, but at the present time, it doesn't all hang together," he said.

"I think that's a pile of nonsense," Carpenter said. The studies may not have explained how high-voltage electromagnetic fields harm people, but they still show it's not good to live next to them, he said.

Standing directly under 345 KV line exposes a person to an electromagnetic field of about 100 milligauss. A gauss is a measurement of magnetic strength and it fades the farther it gets from its source.

Carpenter sets the limit for exposure at a mere two to four milligauss.

The World Health Organization and the International Commission on Non-Ionizing Radiation Protection guidelines say people should not be exposed to power lines giving off more than 833 milligauss.

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