EMF Update

Electric and Magnetic Fields and Health

Company Policy

Dominion Energy is committed to supplying electricity in a responsible and safe manner. This commitment includes balancing issues related to the environment, aesthetics, land use, safety, project costs and customer preferences, as well as concerns about electric and magnetic fields (EMF). No federal, state or international agency has concluded that exposure to EMF at the levels typically found in our communities pose any health hazard.

What are Electric and Magnetic Fields?

There are two types of fields associated with power lines and any other device that carries or uses electricity: electric fields and magnetic fields. Both electric fields and magnetic fields rapidly decrease in intensity as distance from an electrical source increases.

Electric fields: These fields are produced by the voltage, or electrical pressure, on lines or in wiring. Electric-field strength increases as the voltage on power lines increases. But, power lines (even at high voltages) typically contribute little to a person's overall electric-field exposure because buildings, trees, shrubbery, fences and other conductive materials effectively block electric fields.

Magnetic fields: These fields are produced by the flow of current through electrical wires. Magnetic field strength increases as the current flowing through power lines increases. The strength of magnetic fields is not directly affected by voltage. Like electric fields, magnetic fields are associated with transmission lines, distribution lines, household wiring, and the many electrical appliances found in our homes and businesses. Unlike electric fields, magnetic fields are not easily blocked by most materials, but interactions between the magnetic fields from adjacent power lines can sometimes be used to minimize magnetic field levels.

Why are People Interested in EMF?

Public interest in EMF began in the 1970s, when the results of some early epidemiological studies had suggested a statistical association between estimated EMF exposure and certain cancers.

Epidemiology is the study of the relationship between exposures or biological factors and diseases in human populations; epidemiologists use statistical methods to study these associations. Epidemiology studies on many topics, including EMF, are frequently reported in the media and gain widespread publicity and attention. Yet, the results of individual studies are often difficult to interpret because weak associations between exposures and health conditions in a study can be skewed by chance, subtle differences between populations assembled for comparison, and other confounding factors. To address this limitation of epidemiology studies, experimental research is also conducted because this type of research has greater control over the variables affecting the results of a study. The results of three major types of research—epidemiology studies, laboratory studies of human volunteers or animals, and laboratory studies of isolated cells and tissues—provide complementary information to addressing questions about health.

As discussed below, after years of research and consideration of the evidence from all types of studies, health agencies have not concluded that there are health effects associated with EMF at the levels commonly found in our communities.

What Have Specific Health Agencies Concluded about EMF?

International, national and state health and scientific agencies have reviewed research on EMF from all three research areas in tandem to arrive at well-formulated conclusions. None of these health agencies, including the Virginia Department of Health, the World Health Organization (WHO), and the European Commission's European Health Risk Assessment Network on Electromagnetic Fields Exposure, have concluded that EMF affects our health.

The full conclusions of the Virginia Department of Health, the WHO, and the European Health Risk Assessment Network reports can be found at:

- Virginia Department of Health – https://www.dominionenergy.com/library/domcom/pdfs/electric-transmission/vdh-final-report-on-emf-research.pdf
- World Health Organization – http://www.who.int/mediacentre/factsheets/fs322/en/index.html
- European Health Risk Assessment Network on Electromagnetic Fields Exposure – http://efhran.polimi.it/docs/EFHRAN_D2_final.pdf

What Do These Scientific Conclusions Mean?

Hundreds of studies on many different diseases and health conditions have been conducted in this field. When all of these studies are reviewed together by health and scientific agencies, no agency has concluded that electric or magnetic field exposure at the levels typically found in our communities causes any health effect. At very high EMF levels, however, these agencies concluded that exposure can cause some brief, non-life threatening effects (e.g., a shock-like effect). These effects are not a concern to the general public because they occur at levels only observed in some occupational settings and guidelines exist to prevent their occurrence.

The area of research that has generated the most concern is childhood leukemia. Some epidemiology studies reported an association between leukemia in children and exposure to high average levels of magnetic fields. For several reasons, health and scientific agencies have concluded that these findings are unlikely to mean there is a real causal relationship between leukemia and magnetic fields. Since questions remain about this and other areas of EMF research, however, health and scientific agencies have recommended some precautionary measures. For example, agencies like the WHO and the U.S. National Institute of Environmental Health Sciences have recommended that utility companies employ non-costly engineering practices to minimize magnetic-field levels from transmission lines.

Dominion Energy and EMF

Dominion Energy continues to site and design transmission lines using reasonable practices to minimize magnetic-field levels. At a customer's request, we will also provide readings of magnetic-field levels at no charge. In addition, we keep abreast of the most recent research on EMF and conclusions from the federal, state and international health and scientific agencies which monitor this issue and recommend policy responses. Dominion Energy is committed to addressing questions from customers and employees based upon the current information and recommendations from health and scientific agencies.

For more information about electromagnetic fields
visit www.dominionenergy.com

search: "EMF"

or call Dominion Energy at 1-866-DOM-HELP (1-866-366-4357)

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