



## EMF Update

### **Electromagnetic Fields and Health Issues**

#### **Company Policy**

Dominion Virginia Power is committed to supplying electricity in a responsible and safe manner, and this commitment fully includes concern over possible health hazards from exposure to 60 Hertz (Hz) electric and magnetic fields. Research results to date show no conclusive evidence of health risks from either field.

#### **What Are Electric and Magnetic Fields?**

There are two types of fields associated with power lines. Both decrease in intensity as distance from an electrical line increases.

*Electric fields:* These are fields produced by the voltage, or electrical pressure, of electricity. Higher voltage lines transmit larger amounts of power over greater distances. Electric fields increase as voltage increases. Therefore, interest in electric fields has been focused on high-voltage transmission lines.

*Magnetic fields:* These fields are produced by the amount of electrical current flowing through a wire and are associated with transmission lines, distribution lines, household wiring and every day electrical appliances. The strength of magnetic fields is not affected by voltage.

To illustrate: A typical household extension cord operates at 120 volts. As additional appliances are plugged into it, the voltage level remains the same, but the amount of electrical current flowing through it increases. Therefore, the cord's electric field remains constant while its magnetic field increases.

#### **Why are People Interested in EMF?**

Public interest in EMF has existed since the 1970's primarily due to results of some epidemiological studies that suggested an association between estimated EMF exposure and certain cancers. Epidemiology is the study of the incidence of disease in human populations.

It is always possible that "confounders" can confuse the interpretation of epidemiological study data. In EMF research, confounders are possible disease-causing factors unrelated to EMF that can skew research findings. While some residential and occupational epidemiological studies have found a relatively small statistically significant increase in the risk of certain cancers, others have not.

#### **Summary of Research Findings**

Research has been conducted in three main areas -- epidemiological (the statistical study of human disease), laboratory (cellular and whole animal) and exposure assessment. Researchers emphasize that a balanced approach including all of these areas is critical to resolving this issue. Biological systems do respond to EMF exposure, but the evidence for a possible human health risk is controversial and very complex.

In its final report on EMF research, the Virginia Department of Health said:

*“Based on the review and analysis of the exhaustive literature review and other research projects completed under the EMF-RAPID program, the Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans. Even if it is assumed that there is an increased risk of cancer as implied in some epidemiologic studies, the empirical relative risk appears to be fairly small in magnitude and the observed association appears to be tenuous. The studies published in the literature lack clear demonstration of a cause and effect relationship as well as definitive dose-response gradient.”*

The report provides an overview of current research and is available at <http://www.dom.com/about/electrification/transmission/pdf/highfinal.pdf>

The U.S. Environmental Protection Agency in its document, Questions and Answers About Electric and Magnetic Fields (EMFs), provides answers to many questions people ask about EMF.

### **Dominion Virginia Power and EMF**

Dominion Virginia Power is sensitive to public perception and concern about possible health hazards from exposure to electric and magnetic fields. With this in mind, we continually monitor EMF research and speak to our customers and employees regularly. When considering all of the research that has been completed to date, there is no conclusive evidence of health risks from EMF.

Dominion Virginia Power will continue to talk with our employees and customers, sharing with them the latest information. We will continue to take electric and magnetic field readings at customers' requests. And we will continue to respond to customers' requests to provide timely information.

For more information about electromagnetic fields  
visit [www.dom.com](http://www.dom.com)

keyword: “EMF”

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