

cancer might increase from about 1 in 10,000 to about 2 in 10,000 by living near a major electric distribution line. However, other studies based on a similar kind of study have shown no increase in cancer among children living by power lines. Additional studies are underway.

Q. Are new EMF standards being considered?

A. A few states have set new limits on the maximum fields allowed at the edge of a transmission line right-of-way. New standards related to the fields from distribution lines, appliances, or home wiring have generally not been considered necessary and would, in any case, be difficult to set without additional information.

Q. How can EMF exposure to individuals be measured in the home?

A. Determining actual exposure to fields is difficult, since the task involves not only measuring field levels from various sources at different times of day, but also monitoring the time a person spends near each source. The Electric Power Research Institute is sponsoring development of new instruments that should greatly improve monitoring research, and a major study of exposures is now being organized.

Q. What should the government and industry do about EMF?

A. Most important by far is to continue and expand research on EMF to find out whether there is a health risk. In the meantime, there are three basic opinions about what we should do. They are:

- Decide there is not enough evidence to justify any action.
- Decide there is some basis for concern and adopt policies and operations to minimize risks.
- Decide there is a serious problem and adopt an aggressive program of regulation and control.

Obviously, the more we know about EMF, the easier it will be to make the right choice from among those possibilities.

Q. What should I do about EMF?

A. The best thing to do is to keep yourself informed. And, stay in touch with your electric system; we will share our information with you. There simply are no definite answers right now, but by staying informed we will be able to make the best judgments possible.

Prepared by the



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Q uestions and A nswers

During recent months, there has been increasing attention to, and concern about, electric and magnetic fields (EMF). There aren't answers to all questions about EMF, but there are to many. To help you understand the subject better, we're providing this question and answer brochure. A longer document, and one of the best published to date on EMF, can be obtained from Carnegie Mellon University for a cost of \$3.50.

Write: Dept. of Engineering and Public Policy
Carnegie Mellon University
Pittsburgh, PA 15213

Ask for: "Electric and Magnetic Fields from 60 Hertz Electric Power: What do we know about possible health risks?"

Q. What are electric and magnetic fields?

A. Whenever electricity moves through a wire both electric and magnetic fields (EMF) are present. Three things cause exposure to EMF to vary — how close you are to the wire, how much current is flowing through the wire, and the voltage on the wire.

Q. What are the sources of EMF?

A. Because electricity is so common in daily life, most of us are exposed to EMF produced by electric power virtually all the time. Examples of sources include utility power lines, home wiring, home water pipes (which return currents to the ground), kitchen appliances, TVs, computers, electric blankets, and heater wires in floors and ceilings.

Q. Is exposure to EMF harmful?

A. No one knows for sure. However, because of concerns raised by recent studies there was obvious need for more research and a number of projects have been initiated by the electric utility industry and others. One major report on EMF, by the U.S. Congress's Office of Technology Assessment, summarizes present knowledge this way: "In our view, the emerging evidence no longer allows one to categorically assert there

are no risks. But it does not provide a basis for asserting that there is a significant risk."

Q. Have any human health risks been discovered?

A. Over the past decade several dozen studies have examined health records, producing contradictory results. The disease that has been a major interest is cancer. Some studies have shown no association between cancer and exposure to EMF, others have suggested a possible weak correlation. A statistical association, for example, has been reported in some studies between measures of exposure to EMF and some forms of cancer in children, as well as among workers in electrical occupations.

Q. How should these contradictory results be interpreted?

A. Interpreting the results of studies requires considering the certainty of the evidence and the magnitude of the risk. So far, there is still a lot of uncertainty because of conflicting results. Possible causes other than EMF have not been ruled out and meaningful measurements of actual exposure to fields have not been made.

The worst case: Two studies have indicated that a child's risk of developing