POWER FREQUENCY ELECTRIC AND MAGNETIC FIELDS (EMF)

Electric and magnetic fields are a basic force of nature (like gravity) generated by electricity. They are found almost everywhere and are created by such things as lightning and static electricity. Manmade fields are found wherever people use electricity, such as near power lines and electric appliances.

"*Power frequency*" fields are generated by power lines, building wiring, and appliances. The lower the *frequency* of a field, the lower is its energy. Microwave and x-ray fields are high frequency fields and have high energy levels. Power frequency fields are low frequency fields and have low energy levels.

We are exposed to a multitude of power frequency sources each day. Household appliances generate an *electric* field as soon as they are plugged into an electrical outlet, i.e., most of the time. They generate a *magnetic* field when the appliance is turned on. The strength of both electric and magnetic fields decreases as you move away from their source, just as the warmth from a campfire decreases with distance. The EMF generated by common items such as can openers, electric clocks, and computer monitors varies greatly depending on the brand and the type of appliance. Some studies indicate we get relatively high exposure from electric blankets and hair driers since they are used close to our bodies.

The electric and magnetic fields generated by power lines are generally higher near the wires and decrease as you move away. We may be exposed to EMF from high voltage *transmission lines* (usually on metal structures or poles, carrying electricity from generating plants to communities) and *distribution lines* (usually on wooden poles, bringing electricity to our homes, schools and workplaces).

Some epidemiologic studies have suggested associations between proximity to power lines and childhood cancer. However, while epidemiologic studies help suggest factors that may contribute to a disease risk, experimental studies under controlled conditions are generally required to establish cause-and-effect relationships. Several major agencies have studied power frequency electric and magnetic fields and have not found that the fields around us cause cancer in humans. No federal or Texas regulations restrict power frequency fields.