

ELECTRO MAGNETIC FIELDS

Electro Magnetic Fields (EMF) are generated by all elements that transmit and consume electricity. The formation of the fields relates to the flow of electricity and is measured in units called milliGauss. The intensity of the magnetic field reduces substantially several feet from the sources.

The exposure to magnetic fields can vary from 200 milliGauss (mG) when using an electric shaver to 40 mG when using a photocopier, to 2 mG when watching television. In the office environment fluorescent lighting may produce a magnetic field of 2 to 3 mG and a computer screen 10 mG.

Areas located above or below electric substation rooms, or in areas with heavy concentrations of electrical conduits generally experience higher levels of EMF because of their high electric flow. In many cases these levels are high enough (150 to 200 mG) to produce interference on computer screens some of which can be effected at levels of 10-20 mG. In most cases the solution is simply not to locate sensitive equipment in the area of these fields.

However, when there is no choice there are methods to reduce the impact of the electro magnetic field. The methods range from pin pointing the specific areas of high intensity fields and moving the equipment to providing shielding plates around the offending equipment on ceiling, floors and walls to "absorb" and reduce the impact of the magnetic field at the working level of the equipment. At the present there are no standards with regards to electro magnetic fields and their intensity in the work place.

Another source of magnetic fields relates to overhead transmission lines. Most of the publicity and issues that have been raised relate to these lines because of their widespread use throughout the country and their visibility.

This bulletin will not address the overhead line situation other than to recognize that it is an issue being dealt with in a number of areas.

The key issues involved in recognizing and addressing electro magnetic fields in commercial, institutional, and industrial buildings is to:

1. Identify the areas within the building where higher levels of EMF exist.
2. Measure the levels of EMF recognizing that the fields may vary based on the electrical load imposed on the building systems.
3. Attempt to locate functions that are not sensitive to electro magnetic interference in the areas of highest fields.
4. Recognize the EMF can be mitigated if required and provide physical solutions to reduce the fields.

At the present time the health risks associated with EMF in the work place have not been shown to have a detrimental effect on the occupants. However, the best policy in dealing with these issues is to always work towards minimizing the exposure by addressing the fields and taking action.