Electromagnetic Fields

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5.8.5 Electromagnetic Fields

Electromagnetic Fields (EMF) emanate from any wire carrying electricity. Members of the general public are routinely exposed to these fields in their everyday lives. Possible effects associated with the electric and magnetic fields from transmission lines (or similar electrical sources) fall into two categories:

- short-term effects that can be perceived and may represent a nuisance
- possible long-term health effects.

The issue of whether there are long-term health effects associated with exposure to fields from transmission lines and other sources has been investigated for several decades. There is little evidence that electric fields cause long-term health effects. Estimates of magnetic-field exposures have been associated with certain health effects in studies of residential and occupational populations. Research in this area is continuing to determine whether such associations might reflect a causal relationship. National and international organizations, such as IEEE, formerly known as the Institute of Electrical and Electronics Engineers, have established public and occupational EMF exposure guidelines on the basis of short-term stimulation effects, rather than long-term health effects. In so doing, these organizations did not find data sufficient to justify the setting of a standard to restrict long-term exposures to electric or magnetic fields. From what is known about short-term effects, EMF levels generally decrease exponentially as one moves away from the electrical wires.

5.8.5.1 Mitigation

The electromagnetic fields produced by the generation and export of electricity from a wind farm do not pose a threat to public health. Typically, electric cabling between wind turbines is buried in the ground, effectively eliminating EMF exposure to the public. Grid connection is normally made at no more than 132 kilovolts (kV), similar to the voltages used by utilities in existing residential distribution networks. In addition, project developers generally design the entire electrical system to adhere to applicable state guidelines and industry standards to minimize EMF exposure from any new overhead transmission lines.