

Understanding stray voltage

DC lines do not induce voltage, greatly reducing the possibility of stray voltage

Stray voltage, sometimes referred to as stray current or stray electricity, is the general term used to describe low-level voltages that may occur between surfaces that animals contact. Stray voltage is typically associated with alternating current, or AC, electric systems. Direct current, or DC, systems such as the proposed Zephyr line, are not connected to AC distribution systems that serve farms and do not induce voltage on nearby metallic objects, which greatly reduces possible stray voltage effects.



Common sources

Sources of elevated stray voltage may be on-farm, off-farm or a combination of the two. In many cases, there may be more than one source. Some sources may include:

- On- and off-farm equipment ground faults
- Voltage drop on the farm neutral wires if the farm is not wired to minimize this concern
- Improperly installed electric fences or trainers
- Poor grounding conditions
- Unbalanced 120-volt loads



Mitigation

If you have concerns about the potential for stray voltage, many local distribution utilities offer on-site investigations and can recommend steps to correct stray voltage problems at facilities or farms.



Stray voltage is not the same as EMF

The term stray voltage is often used incorrectly to refer to other electrical phenomena such as electric fields, magnetic fields and, most recently, electric current flowing in the earth. These phenomena are generally referred to as electric and magnetic fields.

More information

Midwest Rural Energy Council

www.mrec.org

U.S. Department of Agriculture

www.usda.gov

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