

# Stray Voltage



## Dear Haldimand County Hydro (HCH) Customer,

If you own/operate a livestock operation within our service area, then we would like to make you aware of the potential impacts of Stray Voltage.

### What is Stray Voltage?

Varying amounts of low-level voltage may exist between the earth and electrically-grounded farm equipment such as metal stabling, feeders, water lines or milk pipelines. These voltages are known as "Animal Contact Voltage (ACV)", "Stray Voltage" or "Tingle Voltage." Usually, these voltage levels present no harm, however at high enough levels; these voltages may impact livestock behavior and health.

### What are the causes of Stray Voltage?

Stray Voltage can be caused by a variety of sources including: farm wiring and grounding issues, unbalanced farm load, equipment faults, or voltage from other sources such as telephone lines, gas lines and utility electrical distribution systems.

### What are the effects of Stray Voltage?

Tell-tale signs typically include cows being nervous at milking (esp. in the milking parlors), cows refusing to enter the parlor and anxious to leave, increased frequency of defecation and \ or urination in parlor as well as the

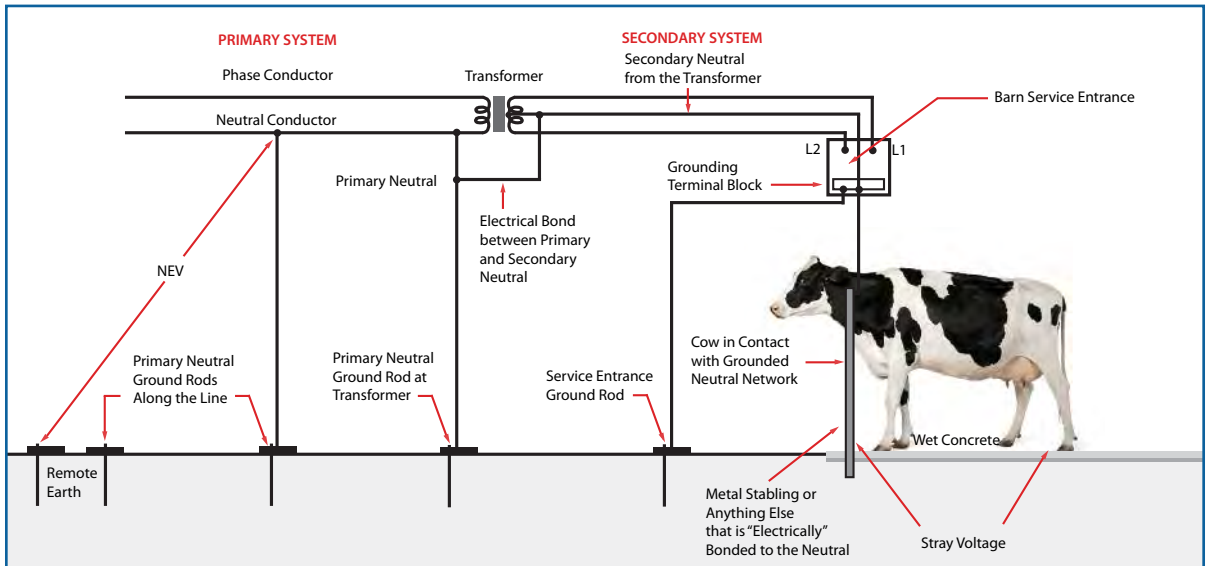
reluctance to consume feed or water. More information on the effects of Stray Voltage can be found on the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) website at <http://www.omafra.gov.on.ca>

### How to reduce the impact of Stray Voltage:

If the source of Stray Voltage is on the farm, the customer may perform mitigation measures such as installing a neutral isolating device, additional electrical bonding between contact points, wiring upgrades, or faulty equipment replacement. This work should be performed by a qualified Electrical Contractor and must meet the requirements of the Electrical Safety Code and Haldimand County Hydro Inc as applicable. If the utility distribution system is the source of the Stray Voltage, the utility will take the appropriate corrective actions.

### Do you have a problem with Stray Voltage?

If you believe that you have a problem with Stray Voltage, please complete, in full, the Stray Voltage Investigation form from our website [www.haldimandcountyhydro.ca](http://www.haldimandcountyhydro.ca) and mail or fax to the engineering department at HCH. All applications must be made in writing and be complete in order to process. You will be contacted within 5 business days of receipt of your application and provided a service order number. You will be further notified in advance to arrange the date of our first visit to your site.



## How will the investigation proceed?

The investigation will proceed in three phases, each of which the testing and results will be discussed with you.

1. Phase one will involve an investigator attending your site and performing preliminary testing including voltage & current measurements, checking for loose connections and adequate grounding at the transformer. If the animal contact voltage (ACV) is measured below 1.0V there is no stray voltage problem. We will provide you with our findings and close the investigation.
2. If the ACV measured is above 1.0 V phase two will proceed with HCH installing a voltage recording device for at least 48 hours to determine the distributor's contribution to stray voltage and to determine whether corrective measures need to be taken on the distribution system.
3. If corrective measures were implemented by us, phase three will commence, where we will return to your property to conduct final testing to see whether any additional corrective measures need to be taken by us.

If you have any questions or concerns, please contact our Engineering Department at (905) 765-5211 x 2248, fax (905) 765 5914 or email us at [info@hchydro.ca](mailto:info@hchydro.ca)

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