



Stray voltage? We can help!

What's stray voltage?

Stray voltage is a small electrical potential between two conductive surfaces like metal stabling, milk pipelines, water bowls and floor surfaces. It usually presents no harm and is the byproduct of the normal delivery and use of electricity. However, if the voltage level is high enough, it may affect livestock behaviour and health.

What causes stray voltage?

There are many contributing factors to stray voltage including off-farm and on-farm factors.

Off-farm factors

In a properly functioning electrical distribution system, some voltage will always exist between the neutral system (ground conductors) and the earth.

For safety reasons, our neutral system is connected to a farm's grounding system. While this bond protects people and animals from shocks caused by faulty electrical equipment and lightning strikes, it can also result in a stray voltage appearing on grounded farm equipment, such as feeders, waterers, metal stabling, metal grates and milk pipelines.

On-farm factors

Poor or faulty wiring, improper grounding and bonding, unbalanced farm loading, overloaded circuits or panels, defective equipment or voltage from telephone lines or gas pipelines are all possible sources of stray voltage. By ensuring your system meets Electrical Safety Authority (ESA) standards, you can eliminate many contributing factors to stray voltage problems.

What are common effects of stray voltage?

Animal reactions to the presence of stray voltage may range from:

- Mild behavioural reactions such as eye blinking
- To involuntary muscle contraction or twitching
- To discomfort and or pain causing intense behavioural reactions

Animals may avoid certain exposure locations, which may result in reduced water intake or reduced feed intake. It may also be difficult to move or handle animals in areas of exposure.

What's Hydro One doing to help prevent stray voltage?


We perform a number of measures to help prevent stray voltage, including examination of neutral and grounding systems to ensure good working order, balancing loads and upgrading the neutral conductor of the supply system.

What should I do if I have a stray voltage problem?

Hydro One has a Farm Rapid Response Team that helps identify, assess and mitigate stray voltage problems on livestock farms.


If you believe that you have a problem with stray voltage, call our Farm Rapid Response Team at **1.888.405.3778**, Monday to Friday, or complete the Farm Stray Voltage Investigation form found at [HydroOne.com/StrayVoltage](https://www.hydroone.com/StrayVoltage).


In addition, you may wish to hire an electrician who can help identify on-farm sources of stray voltage. You or your electrician can refer to the ESA's Basic Troubleshooting of On Farm Stray Voltage guide found at [esasafe.com](https://www.esasafe.com).



We're here to help!

Farm Rapid Response Team

 1.888.405.3778 Monday to Friday

 FarmResponse@HydroOne.com

 [HydroOne.com/StrayVoltage](https://www.HydroOne.com/StrayVoltage)

Our Farm Stray Voltage investigation process

Start: Farm owner must submit a form to begin an investigation. After we receive your completed form, we'll call you within five business days to arrange a site visit.

First site visit: We'll meet with you at your property to perform pre-test inspections, conduct a site layout, carry out an animal contact test and install a farm stray voltage recording device. An extra visit may be required if underground utility lines need to be located.

Second site visit: Two to three business days later, we'll remove the recording device and analyze the recorded data.

Data Analysis: The Ontario Energy Board (OEB) has specified a threshold of 10 volt maximum animal contact voltage and 2 milliamps maximum animal contact current. If the stray voltage is below the threshold, the investigation will conclude.

Further Investigation: If the stray voltage measured is above the threshold, we'll do further testing to determine whether corrective measures are needed.

Final Site Visit: If corrective measures are implemented by us, we'll return to your property to conduct final testing.

Completion: Upon completion of all investigation activities and remediation work (if required), we'll send you an investigation report.

Please note, due to COVID-19 restrictions, the timelines shown above may be delayed.



Questions?


If you have a question or concern, please call us at **1.888.405.3778** or email us at FarmResponse@HydroOne.com. If you have an issue that we can't resolve, it will be assigned to our Customer Relations Centre for resolution. In the event your issue can't be resolved to your satisfaction, it can be escalated to the Hydro One Ombudsman.



Get in touch

 [HydroOne.com/StrayVoltage](https://www.hydroone.com/strayvoltage)

 FarmResponse@HydroOne.com

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