

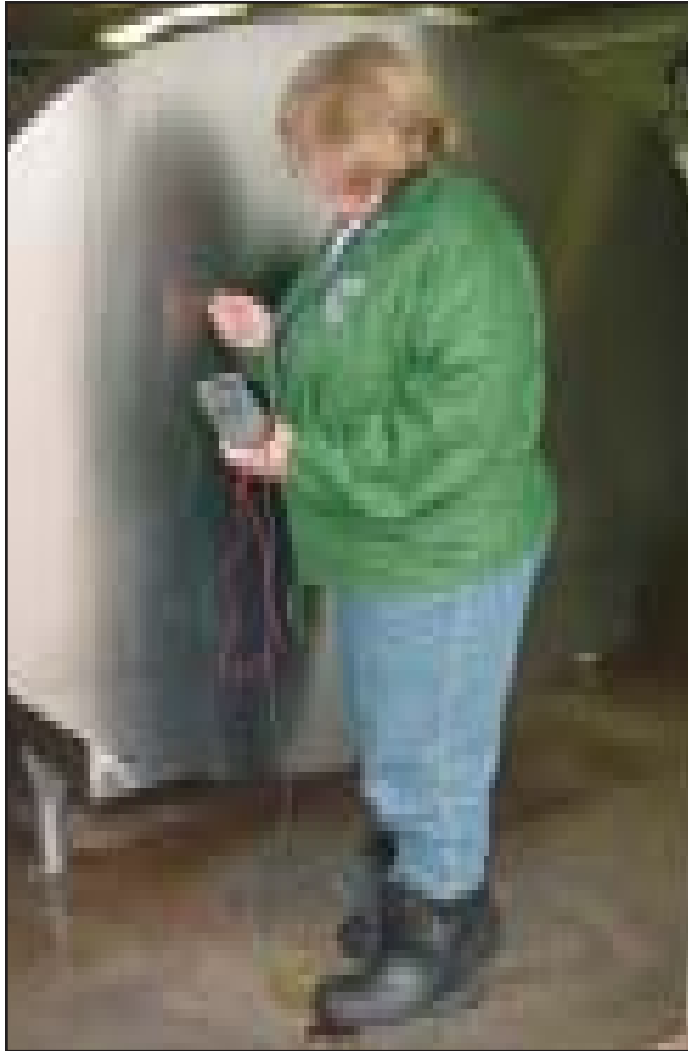
Electrical Safety Checks

Michigan Department of Agriculture (MDA) Food and Dairy Division milk inspectors will be performing an electrical safety check on each dairy farm they visit in August and September. The simple test can help identify potential electrical safety problems on farms.

“The electrical safety check program takes advantage of the field inspectors being on farms and in a position to help identify potential electrical safety problems,” says Keith Tinsey, Director of the Michigan Agricultural Electric Council (MAEC).

The free safety checks are part of an annual campaign that began in 1996 to emphasize the need for electrical safety on Michigan dairy farms. The MDA and MAEC make the electrical check program successful by working together. Formed to develop and present educational programs on electrical issues to agricultural professionals, the MAEC provides training and testing equipment to the MDA milk inspectors.

The milk inspectors report their electrical check findings to the MDA Dairy Division office that



MDA Dairy Inspectors measure ac voltage from the bulk tank to the milkhouse floor drain during an electrical safety check.

tallies the data and shares the information with the MAEC. The MAEC then analyzes and studies the data inspectors collect from across Michigan looking for trends. The program is non-regulatory and was set up to preserve the anonymity of the dairy producer outside of the dairy field inspection organization.

Performing the safety check

MDA milk inspectors take a single open circuit ac voltage measurement from the milk bulk tank to the milkhouse floor drain or the concrete floor next to the drain. The inspector shown in the photo making an electrical safety check measurement is standing on a 4-inch diameter copper plate placed on the drain or floor. This simple reading is a quick and easy way to identify some potential electrical problems.

The milk inspector records the voltage reading on an electrical safety check brochure and leaves it with the producer. The brochure includes an explanation of the safety check, basic information on electrical safety and contact information should the farmer have a concern. Telephone numbers for each power supplier serving dairy producers in Michigan are also provided in the brochure.

Understanding voltage readings

It is normal to have a small level of voltage between the bulk tank and the floor. The source of this voltage can be due to normal

or abnormal conditions in the wiring on-the-farm or the electrical distribution system supplying the farm. A reading around one volt can be considered normal and typically not a concern. A reading measuring two volts or higher may indicate electrical safety problems.

If a reading greater than two volts is found, the milk inspector suggests that the farmer should contact their power supplier for a free evaluation. A measurement of 10 volts or greater is considered to be cause for immediate action and the producer is encouraged to immediately contact a licensed electrician and the farm's electric power supplier.

"Upon further investigation of most readings where greater than two volts was found, experience has shown that there is usually not a problem that would affect humans or animals," Keith says. "However, it is our belief that taking a conservative approach is better, especially since Michigan utilities are willing to check farms for free if the farmer has an electrical safety concern. We have found some readings greater than 10 volts, which has led to immediate correction of the problem by electricians and power suppliers."

While the chances for error are low, a single voltage measurement taken under unspecified conditions is not necessarily representative of conditions that may exist on the farm, according to Keith. Some electrical conditions vary and may only occur when certain equipment is in operation.

"Dairy producers should be aware of any abnormal livestock behavior that may be caused by an electrical condition and know where to request assistance to investigate the situation," Keith says. "For example, if animals are avoiding an electrically heated

waterer, the heater element may be short-circuiting and should be checked."

Electrical safety checks are performed every year over a two-month period. During that time, milk inspectors will make electrical safety checks on approximately 25 percent of the more than 3,000 dairy farms in Michigan. The two-month electrical safety check period takes place each year so most dairy farms in Michigan are checked within four years.

"The goal is to reach at least 25 percent of the dairy farms during the two-month period," Keith says. "That way, within four years, most dairy farms in Michigan should have gone through at least one electrical safety check."

Farms that are not checked during the current electrical safety check may ask the milk inspector to perform an electrical safety check during a regular Grade A Survey.

MMPA Member Representatives are also trained and equipped to perform electrical safety checks on all MMPA member farms, not just those in Michigan. MAEC provides training, equipment and support so MMPA Member Representatives can perform electrical safety checks on MMPA member farms.

In addition, producers may ask the farm's electric power supplier to perform a safety check at any time during the year and the electric power supplier will provide a detailed follow-up evaluation upon request.

For more information on electrical safety checks, contact Susan Esser at the Michigan Department of Agriculture, (517) 373-1060 or Keith Tinsey at the Michigan Agricultural Electric Council, (517) 353-0643, www.egr.msu.edu/age.

What does the reading mean?

1.0 VAC - A reading of one volt may be an expected reading. It is typical to have a small voltage present when 120-volt loads are running.

>2.0 VAC - If the reading is greater than two volts or if the farmer is concerned about a potential voltage condition, the farmer is encouraged to *contact their power supplier for a free evaluation*.

>10.0 VAC - If the reading is greater than ten volts, it is likely there is an electrical ground fault or wiring problem. In this case, the farmer should *contact a licensed electrician and their power supplier immediately* to correct a potential electrical safety hazard.