

Electrical Wiring On Dairy Farms

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LaVerne Stetson, an expert in farm wiring and the National Electric Code (NEC) recently spent several days visiting Pennsylvania dairy farms and reviewing wiring methods and condition. This was part of a Pennsylvania Department of Agriculture sponsored project investigating stray voltage problems and mediation on dairy farms.

Proper wiring methods are important both for safety reasons (fire and electrocution of people or animals) and to minimize on farm sources of stray voltage. Farm wiring is neither residential nor light commercial and is recognized in the NEC as having unique requirements. Particular characteristics include moist or dusty environments, wide variations in temperature, presence of corrosive materials including manures, gases, and cleaning agents, and vulnerability to physical damage from animals and equipment. Most buildings and areas on a dairy farm will require wiring methods and devices that are corrosion resistant, watertight and dust tight. Modern plastic materials are ideal for most of these conditions.

General observations on dairy farms reveal the following:

- Wiring on many farms has deteriorated, is poorly maintained, and represents a real threat to life safety, and fire.

- Many new installations are still being made with ordinary galvanized boxes, loose fitting covers and NM (household grade) wire.

Some general recommendations to follow include:

- High quality plastic (PV) boxes, covers and conduit, UF type cable and water tight box connectors selected and installed to be water and dust tight are a must for milking centers, animal barns and feed storage areas.

- Do not run cable inside wall cavities or attic spaces where undetected rodent damage can occur. Protect surface mounted cable from physical damage by animals or equipment.

- Light fixtures should have gasketed covers to protect the light bulbs and interior wiring, ballasts, etc. from moisture and dust.

Common wiring problems that can lead to stray

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