No Ground Fault Interrupter, no Pulse

Failure to have a ground fault circuit interrupter (GFCI) in place was a key element in the death of a Minnesota turkey farmer.

What happened?

The 72-year-old victim was electrocuted when he came into contact with energized turkey feeder equipment in a barn housing thousands of birds.

The feeder equipment had been malfunctioning and it had been disconnected the previous evening. Investigators weren't sure whether the victim had been trying to fix the problem or had come into contact with the equipment accidentally.

Why did it happen?

The feeder equipment did not have a continuous mechanical ground or a GFCI as part of the electrical system supplying power to it. A GFCI will open a circuit within 1/40th of a second if it senses a flow of fault current between four and six milliamps. This prevents a person from receiving a harmful shock.

Investigators discovered that a homemade two-conductor extension cord with badly worn (perhaps bird-pecked) insulation, was being used to power the feed-line system. Ground continuity was broken when the extension cord was wired.

The aftermath:

Investigators made the following recommendations following the fatality:

? That effective grounding be established and maintained as part of any electrical system to prevent the presence of fault current that could energize non-current-carrying parts.
? That ground fault circuit interruption be incorporated into electrical systems to protect workers against dangerous levels of

fault current and to alert them when a problem occurs within a system.
? That preventive maintenance programs for electrical equipment and electrical systems be established and implemented, especially when these systems operate in hostile environments.
? That power cords constructed for special services or purposes be made from components that are safety laboratory approved for such service and should be tested for continuity with the electrical system.