

Stray Voltage

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Welcome to StrayVoltage.org StrayVoltage.org is brought to you by the *La Crosse Tribune*, a site dedicated to covering the important agricultural and environmental issue of stray voltage.

The Tribune coverage of this story by former Local News Editor Chris Hardie has won five Wisconsin journalism awards and was nominated for a 2000 Pulitzer Prize. In 2002 the coverage received first place in the Wisconsin Newspaper Association Enterprise/Interpretive reporting category.

Journalism judges had this to say about the coverage: *"This is a fair treatment of a long-disputed issue. In a class of 57 contenders it stood out. The whole series is outstanding. It gained attention of officials."*

The Society of Environmental Journalists cited www.strayvoltage.org as a "Link of the Week" giving the page its highest ranking.

Cows are dying, and farmers think they know why

In lawsuits filed against utilities, some farmers contend stray voltage from overloaded power lines nearby has killed their cattle. Xcel Energy argues the cow deaths could be blamed on other factors.

By H.J. CUMMINS, Star Tribune
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As dead cow No. 79 lay stiff in a tractor scoop one recent cold morning on Greg Siewert's dairy farm, it was pretty clear in the nearby sick barn which would become No. 80.

Wobbly on three legs, the fourth swollen and kinked at her side, one cow stared out below stooped shoulders, her black and white coat hanging dull and low from a grim row of ribs.

"It's a slow, painful tortuous death, is what it is for them," said Siewert, who with his father, Harlan, owns Siewert Holsteins in Zumbro Falls. "It's like watching someone die of AIDS."

But Siewert contends it's not disease that's killing his cows. It's electricity. Specifically, it's something called "stray voltage" from a nearby Xcel power line. He has filed a \$4 million lawsuit in Wabasha County District Court against Xcel.

The utility, in its legal response, argues that bad farming could be at fault, that cows get sick from bad herd management, improper feed, and a general lack of "cow comfort," as it's described in the dairy world.

Xcel also argues this kind of dispute belongs before utility regulators -- in Minnesota, the Public Utilities Commission -- not in court.

The Siewerts' suit is one of at least six in southern Minnesota -- and one of three against Xcel, the first against the utility in Minnesota since 1992, several attorneys said.

The farmers' suits blame overloaded power lines, some strung 70 years ago that now have to carry power to all the refrigerators, clothes dryers and TVs in houses built since. They also claim new science is on their side. And farmers, with bigger operations and smaller margins, have little choice but to protect against losses of cows or milk production.

Stray voltage is a real phenomenon. New York City, with its aging infrastructure and growing electrical needs, sees the problem often. Consolidated Edison recorded 1,214 incidents of stray voltage in 2005. Among the deaths attributed to it was a woman stepping on a metal plate and a dog standing on wet cement.

On or off the farm, the key question is how much stray voltage is enough to hurt.

Completing the circuit

Dairy farmers complain about two kinds of stray voltage. One is extra spillover from overworked power lines onto the farm's own electrical system, where the two connect. The other, more controversial, is ground current. Electricity needs to run in a complete circuit. If it can't return to its source over the utility's lines -- for ill repair or lack of capacity -- it takes to the earth through the lines' grounding rods.

Some estimates say two-thirds of the current runs back that way. And when a dairy farm stands in its path, the mud, metal milk machines and water troughs conduct the current to the cows, shocking them.

Dairy farmers and utilities have been fighting about stray voltage since the early 1980s, according to Chris Hardie, in the dairy state of Wisconsin, who runs a website on the issue. The first disputes were whether it was even real, and then they became about how much voltage is harmful -- something several government agencies in the mid-1990s set at 1 to 2 volts, Hardie said.

Utilities still cite a 1996 advisory report to the Minnesota Public Utilities Commission as the latest, best wisdom. Its authors found "no credible scientific evidence" that ground currents can sicken dairy herds.

As for stray voltage overall, a Minnesota official doesn't see it as a widespread problem.

"Some farmers have experienced stray voltage, but it has also been used for decades as an excuse for issues on the farm," said David Weinand, dairy development grants administrator at the Minnesota Department of Agriculture.

However, since 2004, two state supreme courts have significantly advanced the farmers' cause. In Wisconsin last month, the court granted farmers a long window to sue a utility, recognizing it takes time to determine if stray voltage is causing a herd's problems. In Idaho in 2004, the court denied an Idaho Power Co. appeal of a \$17 million judgment against it in a stray-voltage case involving dairy cows.

Scientific developments are also helping farmers. Immunology has advanced enough to explain the connection between electricity and the immune system, said Siewert's attorney, Will Mahler of Rochester.

And lawyers are getting smarter about the science, going behind government studies and challenging the utilities' on-farm test. Utilities measure at noon, said John Bass, an independent engineer in Minnetonka. But stray voltage peaks during peak electricity demand, because that's

when the power lines are carrying the biggest loads, he said. "We always measure at 8 a.m. and 5 p.m."

Still, attorney Barry Hammarback doesn't expect stray voltage cases to pour in, because they take years and farmers need to disprove other culprits for their cows' illnesses.

Five years after dairyman Chuck Untiedt of Lakefield sued Xcel, the case was settled in mediation last month, according to Untiedt's attorney, Richard Diamond of Minnetonka. Terms are confidential.

Persistent disagreements in Minnesota led to the formation in 2005 of the Minnesota Stray Voltage Task Force, a standing group of utilities, state government, and veterinary and dairy industry representatives trying to avoid more lawsuits.

"When most of the litigation comes, it's when the utility has already done what they perceive to be the easiest, clearest fixes, but the farmer says, 'Well, but there's something else going on here,'" Hardie said.

Ruling out other culprits

Greg Siewert filed his suit in 2004.

Siewert, 43, bought his dairy farm in 1990, 5 miles down a country road from the family dairy farm where he grew up.

Over the years, his cows lost weight and gave less milk. They developed chronic mastitis, an infection of the udder. They fell lame, with swollen and tender joints, and they developed ulcers. The herd of about 350 behaved strangely, too. They were jumpy at the milk machines. And Siewert noticed they didn't slurp water, like cows normally do; they lapped it like a dog.

"My nutritionist kept telling me it can't be the ration, and my vet kept saying it's not an infectious disease," Siewert said.

Finally in 2004, someone suggested stray voltage. Xcel's testing measured its level at 2.2 volts. The utility and Siewert installed equipment, which Siewert said reduced his stray voltage but left enough to keep making his cows sick.

Take cow No. 79. "She laid down yesterday, and couldn't get up. I had to shoot her."

Xcel declined to comment specifically on Siewert's case. But in a general statement, the utility said, "Xcel Energy takes these concerns/complaints very seriously. We will work with the farmer/landowner and do testing as needed to determine if a problem exists, and what the cause of the problem is. If, after testing, it is determined a problem exists, one or a combination of solutions may be implemented."

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