

What Goes On Down Under(ground)

By Brandi Meech

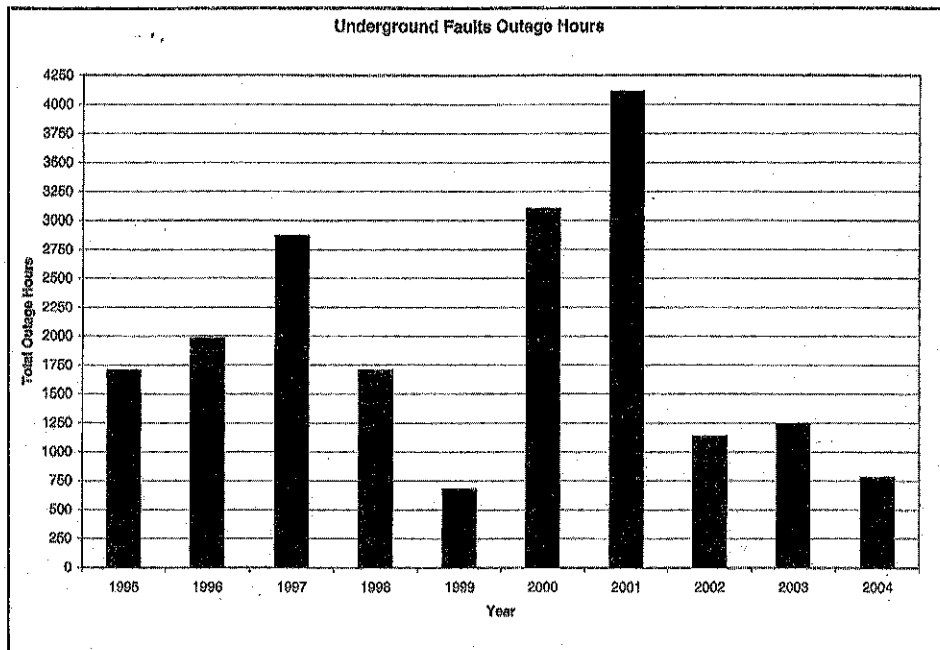
Each year in KPUD's underground power lines, dozens of faults occur, leading to hours of power outages and labor. The faults occur for a number of reasons, such as old cables—which break down and absorb water—and unplanned digging by property owners and work crews.

No matter what the cause of the fault, the outcome remains the same: KPUD customers are left without power until the fault can be detected and fixed.

An underground fault occurs when a cable underground is damaged and shorts out. This can be caused by wear and tear from the environment or age, or because the line is struck by people digging. There also is a high correlation between faults and lightning storms in an area. Typically, two to three days after a lightning storm passes, underground faults begin to occur. This is due to lightning stressing the cables to a point of faulting.

To avoid this problem, KPUD installs a 9-kilovolt clamp-on insulator at the end of underground lines. However, this does not stop the faults completely and outages do still occur.

Faults stop the flow of power to users of the line and result in a power outage. As a cable weakens, areas of the line begin to "grow" tree-like veins that eventually spread out so far that a fault occurs. Injecting a silicone mixture into the line and clogging the veins can sometimes fix the underground cable, but this does not always work. It is very expensive, usually more costly than simply replacing the cable, especially in rural areas.



A single fault can result in hundreds of outage hours and numerous hours of labor for the KPUD line crews to find and fix it. In 2004 alone, there were 16 underground faults resulting in almost 780 hours of outage time. Outage time is the combined number of hours each household is without power.

Generally the rule is three strikes and you're out. After the third cable failure, the cable run is scheduled for replacement. KPUD has purchased new and improved technology, which makes locating the faults easier. The crews now have a radar unit telling them the distance to the fault. It is combined with a thumper machine that sends an electrical pulse to discharge the fault. This narrows the area of digging to a specific section of the line for repair or replacement, if necessary.

This is a costly job, and careless diggers who cause any type of damage to the lines will be charged for the labor incurred by workers.

KPUD belongs to a program called "Call Before You Dig." Flyers are sent in customers' bills and contain a toll-free number for people to call before they start a home project involving digging.

All of your utilities, including electric, gas, water, sewer and communications, respond to the call and mark the locations of the underground lines that could potentially be hit and damaged. If a person fails to call the number and hits an underground line causing a repair to be needed, the person could be billed a minimum of \$300 for labor and repair costs.

This isn't the worst problem that could occur. An active electric line contains high voltage and could lead to a serious injury or even death.

To save KPUD employees time and yourselves money, and to avoid possible injury, please call before you dig. The toll-free number is: (800) 424-5555. ■