

ELECTRIC TRANSMISSION AND GIS

Where were you on August 14, 2003 at about 4:00PM Eastern Time? It was hot and humid all throughout the Northeast. I was one of the lucky ones. I was in Southern California. That's when much of the Northeastern United States was blacked out. No power. Sweaty office workers were stuck in elevators from Manhattan to Boston to Cleveland. Traffic signals were dead everywhere. Tons of food spoiled. People were still wary after the memory of 911. The culprit. Well there many. But two culprits were rather skinny ailanthus trees that became a little too big for their britches. They grew too close to the heavily load Stuart-Atlanta 345kV transmission line. The line tripped out. When transmission lines carry a lot of power their conductors sag. So as fate would have it, at the worse possible time, the sagged lines came in contact with those little trees. This was one in a series of cascading events. Those events created one of the largest power failures in the nation's history.

People often say that the blackout of 2003 was due to the three "T's" – trees, technology and training. To be precise – trees growing too big, failed technology and the lack of training.

Too bad we didn't have the ArcGIS platform back then.

The blackout illustrates the devastating impact that a failure of the electric transmission system can have. Most power failures happen on the lower voltage lines that we see on our city streets. People crash into poles, or ice forms on the lines. While these situations cause havoc, they are often relatively local. When a transmission line fails or is damaged, all hell breaks loose. Talk to Alabama Power, they lost a big chunk of their transmission system during a devastating tornado a couple of years ago.

Today, many smart electric transmission utilities have embraced ArcGIS technology to help with the three "T's" GIS is a critical technology for improving vegetation management – trees. It also helps operators with situational awareness. Back in the old days of 2003, control room operators had no easy visibility to the geographic aspect of the transmission system. They only had schematic diagrams. The ArcGIS can also help operators see the transmission system in a more meaningful way – an ideal training tool for operators and all involved in keeping the transmission system healthy and intact.

What's exciting is that there will be a special focus on electric transmission at Esri International User Conference starting July 19th and running through the 24th. There will be a pre-conference seminar specifically for electric transmission utilities. Electric transmission operators will share their experience in the use of the ArcGIS platform. Also during the main conference, there will also be several papers devoted to electric transmission.

What's great about the conference is also the ability to network with your peers. There will be plenty of folks who have taken advantage of GIS to improve the operation of their transmission system to talk to. In fact, there will be a social on Tuesday of the conference for you to get together. You can tell your stories and listen to your colleague's stories about the Three "T's" and GIS. See you at UC!