



White Paper

Lessons Learned
In Omaha

Power

Lessons Learned in Omaha

Alpha Power Nodes Rise to the Challenge



Mother Nature has a sobering way of reminding us all of our vulnerability and dependence on engineered convenience.

This was certainly the case in the Midwest as record snowfalls buried the region for more than 10 days early this winter. Temperatures plummeted, the snow fell, the storm raged and the utility power went down—for 10 days in some areas.

The significance of this region to the communication industry is well documented. Omaha has served as a strategic test-bed for the most advanced and technically sophisticated communication architectures deployed.

Plans for the Omaha project began after a long-awaited federal commission decision was made to grant the region's telephony provider permission to offer additional services.

Bundled services now include telephony, pay-per-view, 80 channel video, and high speed data services—all to a subscriber base of more than 60,000.

Nearly 200 Alpha Broadband Network Power Nodes are currently in use, providing the network with the required clean, uninterrupted power, as well as critical backup power during utility outages.

In the Omaha architecture, extended backup power is provided by fully integrated engine generators.

The need for "extended backup" was tested in Omaha early Saturday, October 25, 1997, when an unexpected storm dumped nearly two feet of heavy snow and ice over the entire region. In its wake, the storm left the area in a state of emergency with hundreds of snapped trees, inaccessible roads, downed power lines, and 150,000 homes without utility power.

As the region's emergency crews made extraordinary efforts to rescue stranded motorists, clear roads of debris and restore power, communication was vital.

Fortunately, the region's communication network installed just a few years prior kept emergencies like this in mind. Of the more than 60,000 homes served by the network, less than 50 had any integrated in communication services.

Alpha Power nodes supplied the network with the power that kept critical telephony service available.

Only a few hours after the storm began, utility power was lost to approximately 50 Alpha power nodes supporting the communication services to thousands of customers.





Sensing the utility loss, the nodes switched automatically to generator power and communications continued uninterrupted.

By Monday, 48 hours later, utility crews had restored power to a significant portion of the service area.

However, 15 Alpha power nodes were still providing backup power to communication services for nearly 5,000 homes.

With only minor and appropriate attention from network operators, 5 Alpha power nodes were still providing required backup power on Friday morning—144 hours later!

Finally, by Monday—ten days after the first snow fell—utility power was fully restored. That added up to a total of 216 hours of continuous backup power from these generators that ran the duration of the outage.

All told, the October storm was blamed for the loss of eight lives, uncountable injuries, and hundreds of thousands of dollars in property damage all across the region.

There is no way to measure what could have happened in Omaha had people and emergency services there not been able to communicate with each other.

Omaha's test-bed has provided an extraordinary lesson in the critical importance of communication powering.