Denton Municipal Electric

Solutions to streamline GIS, design and outage management processes

PROJECT AT A GLANCE

Project Type
Operational utility solutions

Location
Denton, Texas

Number of Customers
50,000

Applications
Provide a geographic view of utility assets and outages in real-time that can be updated directly from the field, strengthening the efficiency of data transfer and ensuring all workers are viewing accurate information.

Software Implemented
ArcFM™ Network
ArcFM Operations
ArcFM Viewer with Redliner & Inspector Extension

CUSTOMER BENEFITS

- Improved communication between field crews and operators
- Conservation of resources due to increased data accuracy
- Assurance of safety and security in the field

Denton Municipal Electric (DME) is an electric utility that has served the city of Denton, Texas for more than 100 years. A college town located on the north end of the Dallas-Fort Worth metropolis, Denton qualifies as one of the top 25 fastest growing cities in the nation.

DME serves 50,000 of the city's 130,000 residents while maintaining a 99 percent electric reliability index. To further enhance Denton's electric infrastructure, multiple substations have been selected to receive upgrades and expansions from 2014-2015.

Challenges

Prior to implementing Schneider Electric's ArcFM solutions, DME relied on CAD maps to manage its network and identify outages. In 2004, the utility began printing these maps each year to be displayed around the utility. Once printed, field crews and operators knew the information was immediately out of date. In short, DME did not have an accurate, up-to-date view of its network.

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> Trey Price, engineering technical GIS analyst, Denton Municipal Electric

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On top of that, its outage management system (OMS) was difficult to use and did not suit the utility's needs. Operators experienced delays in network updates, which left the utility with inaccurate representations of its assets and made the solution difficult for system operators to embrace. Furthermore, the utility lacked the ability to transfer information to and from the field in real-time. This lack of data integration prevented dispatchers from tracking assets and performing live functions in a timely manner, as there was no assurance of safe conditions in the field.

The OMS also lacked the ability to digitally track switching orders, compromising the reliability of predictions and reports. Operators and field crews stood the risk of being misinformed on which projects had been completed and which still required assistance, resulting in delayed response times and wasting of valuable time. Making matters worse, comprehensive knowledge of the network was confined to one employee due to their sole responsibility to enter all updates into the system. This one-way communication created a significant challenge as workers lacked updated network information. Finally, the system operators demanded change.

Solution

In 2004, DME decided to implement Schneider Electric's ArcFM Enterprise GIS to design, maintain and manage its network in an integrated geo database, allowing the utility to update its maps more efficiently. Because geographical information is built into the map data, asset changes and updates are more likely to operate appropriately, reducing the chance of outages and increasing reliability. To further strengthen the efficiency of data transfer and gain access to realistic views of field assets, DME implemented Schneider Electric ArcFM Viewer with Redliner Extension in 2008, followed by Responder Outage Management System (OMS) in 2014.

DME selected ArcFM Viewer with Redliner Extension for its hands-on capabilities — if an operator or field worker notices incorrect data on the map, they can redline, sketch or place graphics to support initial design, inspection work or map adjustments. Being granted direct access to view and alter drawings whether in the office or in the field eliminates confusion between dispatchers and field crews regarding project status. The ability to update the system in real-time gives workers more ownership over the network and increases overall efficiency.

Additionally, Responder has facilitated a two-way communication model throughout DME. The utility is now able to update the location of its assets in real-time, giving everyone within the utility a realistic view of the network. Now, DME can locate and respond to outages faster. DME also plans to replace its printed GIS maps with TV monitors displaying the Responder view, giving all workers access to the most up-to-date network information.

Paired with the real-time representation of the network, Responder includes a view of system switching states, allowing operators to prioritize work and effectively manage its field crews without wasting time and resources. Responder has increased overall safety and security as operators can now assess field conditions before dispatching work orders and avoid blind switching.

The Bottom Line

DME system operators have embraced the dynamic ArcFM software and its plug-in modules. The utility has already seen enhanced communication between field crews and system operators, which has improved performance accuracy and reliability.

"The system is changing much more rapidly than it used to; much faster than a lot of people can keep up with," said Trey Price, engineering technical GIS analyst, Denton Municipal Electric. "Our operators understand that this new software helps our system's reliability."

As the utility industry continues to rapidly shift toward new technologies, Schneider Electric's ArcFM Enterprise GIS offers innovative solutions to stay ahead of the changing landscape. Operations standards have shifted to prioritize field safety and security, which can now be ensured with two-way communication and real-time data updates.

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GIS has become the core of DME's organization, integrating everything within the utility from its outage management system (OMS) to its supervisory control and data acquisition (SCADA) system to accounting. With the integration of Schneider Electric ArcFM Enterprise GIS, Responder OMS, and ArcFM Viewer with Redliner Extension, DME has been able to utilize all the benefits of its GIS system to provide superior utility service to its community.

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