Upgraded Outage Management Helps Florida Utility Prepare for Hurricane Season

GRU
More than Energy

aspentech | UDC | Case Study

"Working together, UDC and AspenTech® Digital Grid Management enabled our team to better prepare for managing the real-time outages that often come with hurricane season. This allowed us to respond to our customers' needs quickly and efficiently."

—Tony Holstein, Utility Project Team Leader, Gainesville Regional Utilities

CHALLENGE

The team at Gainesville Regional Utilities (GRU) wanted to improve outage management operations to better prepare for hurricane season and to provide safe, reliable, competitively priced utility services in an environmentally responsible manner.

SOLUTION

By partnering with UDC to connect existing **AspenTech Digital Grid Management (DGM)** solutions to an upgraded Geographic Information System (GIS) solution, the team at GRU was able to enhance grid data exchange to deliver new functionalities and keep the lights on for its customers.

VALUE CREATED

Partnership between GRU, UDC and AspenTech resulted in a smooth software upgrade with enhanced data inputs into GRU's real-time control system before hurricane season began. In addition to added grid visibility and safety, GRU's outage management crews were able to quickly locate and respond to outages, just when they were most needed.

Overview

Gainesville Regional Utilities (GRU) is a multi-service utility owned by the City of Gainesville in Florida. As the fifth largest municipal electric utility in Florida, it serves approximately 93,000 retail and wholesale customers in Gainesville and surrounding areas, offering Electric, Natural Gas, Water, Wastewater and Telecommunications services.

GRU's mission is to provide safe, reliable, competitively priced utility services in an environmentally responsible manner and actively contribute to enhancing the quality of life in the community. In order to better support its mission and customers, GRU sought to improve its outage management operations through modernizing its digital technology.

The AspenTech OSI Outage Management System (OMS) is a state-of-the-art solution that empowers utilities to better manage outage response times and keep customers, management and regulators well informed about the scope, status and forecast of restoration efforts while improving overall system reliability. Highly scalable and easily configurable, OMS enables efficient job and crew management, mobile communication and reporting.

Leverage Enhanced GIS Data to Manage and Analyze Outages

GRU and AspenTech have partnered since 2015, leveraging AspenTech's Digital Grid Management (DGM) product suite across real-time operations in Transmission and Distribution. The company's AspenTech OSI monarch SCADA™, AspenTech OSI Outage Management System (OMS), and AspenTech OSI eMap Distribution Network Model, have been key enablers in GRU's reliable and safe electric service. Together, these products comprise a comprehensive Operational Technology (OT) system for managing outages and post-event reporting (SAIDI, SAIFI, etc.), and serve as a single system for operations.

GRU recently migrated its Esri Geographic Information System (GIS) to the new ArcGIS Utility Network format to take advantage of the new network management capabilities. This work included adding substation assets to the Utility Network data model to replicate actual conditions from the field, and cleaning existing data to support more accurate data reporting and improve system capabilities.

Following the migration, the enhanced data and new data model needed to be re-integrated into the AspenTech OSI monarch SCADA platform and network model. The company tasked UDC, a vendor-independent provider of GIS-centric system integration services to the utility industry and a qualified and valued partner of AspenTech, to re-establish the extraction and integration of GRU's GIS data from the new Esri platform.

Working with the experts from UDC, GRU assessed its existing AspenTech OSI OMS software and determined it needed to be upgraded to use the recently migrated GIS data for all OMS-related applications. Leveraging the improved, higher-fidelity GIS data would enable the GRU team to support more comprehensive work management, outage analysis, storm functions and regulatory reporting.
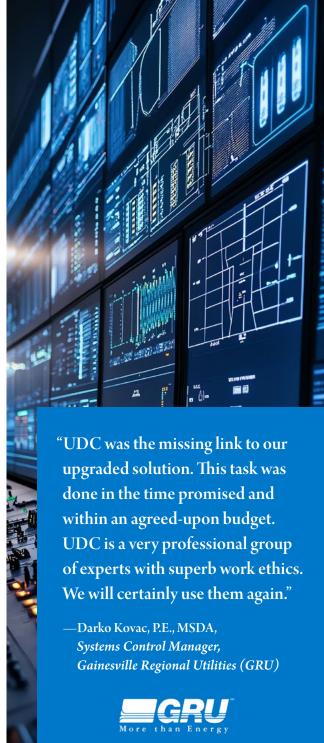
A Collaborative and Systematic Approach

UDC employed a systematic approach to upgrading GRU's software, leveraging AspenTech DGM automation tools. UDC follows the same security policies as AspenTech, deploying all projects to comply with NERC/FERC industry standards.

Over the course of about six months, UDC performed the following high-level tasks:

1. Mapped the Esri ArcGIS Utility Network schema to the AspenTech OSI OMS schema. GRU's AspenTech OSI Advanced Distribution Management System™ (ADMS) applications were reviewed to help identify additional source data.

2. Extracted the GIS source data from the geodatabase and Esri Utility Network Portal. The results were reviewed, errors were resolved, and the database connection to GRU's ArcGIS Utility Network environment was established for testing.

3. Extracted and imported the new Esri Utility Network substation features into GRU's current model to make them part of the AspenTech OSI ADMS network. The new Utility Network substation includes transformers, breakers, busbars, transfer buses and transfer breakers. These features changed the starting point of the ADMS network model from the feeder breaker to the transformer that included the substation networks and circuits in the trace.

4. Using the newly available information in the electrical network, UDC configured the electrical hierarchy data for the new substations, areas and regions, improving the network data that the AspenTech OSI ADMS system uses in their automation. The result was improved visibility and efficiency for GRU's system operators.

UDC configured the software using an iterative approach, which helped refine the software configuration and improve data accuracy. This approach enabled data issues to be identified and addressed before moving on to the next phase of the project. As a collaborative effort, GRU was able to review the configuration progress at each milestone and play an active role in ensuring an accurate data model in their real-time control system to meet operational goals. Following site acceptance testing, UDC provided remote support to GRU for configuration adjustments prior to the upgrade going live.

> "UDC was the missing link to our upgraded solution. This task was done in the time promised and within an agreed-upon budget. UDC is a very professional group of experts with superb work ethics. We will certainly use them again."
>
> —Darko Kovac, P.E., MSDA, *Systems Control Manager, Gainesville Regional Utilities (GRU)*

Just-in-Time Upgrade Helps GRU Prepare for Real-time Outages

Due to the high-quality performance of the UDC engineers, whose deep knowledge of the AspenTech software enables them to work efficiently on both sides of the project, UDC was able to quickly show GRU the benefits of the Esri Utility Network software together with the AspenTech OSI OMS product.

The many resources available to UDC enabled them to perform the project in line with GRU's schedule, and the upgrades were completed just in time, before two major hurricanes hit the region.

The real-time AspenTech DGM OT products provide a broad range of benefits to GRU's customers:

- **Reliability:** Improved distribution network reliability by minimizing outages, reducing response times and optimizing asset performance.

- **Efficiency:** Operators can manage electricity flow efficiently, reduce losses and ensure the best use of grid infrastructure.

- **Safety:** Prevent unsafe conditions by quickly identifying faults, isolating problem areas and dispatching crews where needed.

- **Customer Satisfaction:** Faster restoration times, accurate communication and fewer outages enhance customer experience and trust in the utility.

The upgraded system gave GRU's operators a comprehensive and modern situational awareness of the real-time distribution network. With UDC's expertise and AspenTech's Digital Grid Management solutions, the GRU team was able to better prepare for the real-time outage management that often comes with hurricane season. The updated technology enabled the outage teams to more quickly pinpoint the source of the outages, thus improving the efficiency and responsiveness of outage management crews just when they were needed most. Additionally, more accurate data modeling between the field and control room improved the safety of the line crews.

"The upgrade project to configure GRU's future operating requirements was a collaborative effort among AspenTech and UDC. This supported a more comprehensive outage management system and positioned GRU for future ADMS applications. UDC is grateful to GRU and AspenTech for the opportunity to participate in this mission critical endeavor."

—Hamid Akhavan, *CEO of UDC*

About Aspen Technology

Aspen Technology, Inc. (NASDAQ: AZPN) is a global software leader helping industries at the forefront of the world's dual challenge meet the increasing demand for resources from a rapidly growing population in a profitable and sustainable manner. AspenTech solutions address complex environments where it is critical to optimize the asset design, operation and maintenance life-cycle. Through our unique combination of deep domain expertise and innovation, customers in asset-intensive industries can run their assets safer, greener, longer and faster to improve their operational excellence.

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