Apptricity®

Business Transformation Study | Energy Plant Construction

Mind Blowing Asset Tracking Puts the Wind in Renewables

Company Overview

This privately-held, family-owned construction company has been in business for more than 60 years, and is recognized for its construction expertise in commercial building, green/sustainable construction, virtual design & construction (VDC), construction safety, construction quality, and much more. Most recently, they have emerged as a leader in designing and building alternative energy sites, such as wind and solar fields. With 11 regional offices across the United States, and hundreds of successful construction projects under their belt, the Company has cemented itself as an innovative market leader in the global construction business.

Wind Farms, and the Challenges They Present

Only a handful of construction companies can meet the specialized requirements of wind turbine construction. Construction of the Rush Creek wind project, the biggest single-phase wind generating facility in North America, is currently underway and expected to be complete in October of 2018. Located in Cheyenne, Elbert, Kit Carson and Lincoln counties in Colorado, the project is comprised of two wind farms owned and operated by Xcel Energy. Colorado expects this project will increase its wind generation capacity by 20 percent. Over 300 wind turbines and 83 miles of transmission are being erected and wired, new access roads are being created, and more than 4000 employees (many of them contract employees) are working over two job sites located 35 miles apart. The total job site end-to-end is a staggering 50+ miles.

With such a large job site, number of employees, and number of tools necessary to complete the job, it is understandably difficult to keep track of important materials that go in and out of the site. Further, each turbine essentially represents a “unique” job site, and a unique set of tools and materials are needed to erect each turbine and hook it up. At the beginning of each workday day, trucks that are leased by the primary contractor, are taken out by Company employees, loaded out with the tools for the day’s work, and dispatched to complete the day’s tasks. When the day ends, employees return the work truck to the loadout zone and will either replace tools back into storage containers, or “connexes”, or depending on specific situations requiring easy access, will keep the tools on the vehicles, for the next day’s job.

Additionally, many employees using Company trucks, are either leaving their truck idling too long, running up gas bills and possibly violating local EPA guidelines, or going to places out of the job site entirely, further eroding the ability to track expensive assets.

$3.8B

In annual revenue for primary construction contractor, founded more than 50 years ago, and family owned

2,500

Workers employed by the primary, plus additional 1,500 contract workers

300 Turbines

Each requires its own crew, materials, and tools

35 miles

Average distance between job sites

Tracking High-Value Equipment, Parts & Tools On Every Truck and Site

Apptricity Asset-Based Telematics, Integrated Inventory & Work Order

With hundreds of very expensive and specialized tools needed for a project like this, combined with thousands of employees, theft is a significant and very costly problem. Similarly, important tools are inadvertently left on job sites that are completed, forcing the Company to replace those missing assets. Thousands of dollars are being wasted to replace these assets.

Additionally, safety equipment is expensive and considered “critical assets.” The Company follows a strict code of employee safety. This means that safety equipment, such as harnesses, missing or deemed too worn to use and/or nearing the end of their lifecycle, must be replaced immediately. Again, a costly issue and one that presents significant risk to the Company.

Asset-based Telematics Delivers Results

With Apptricity asset-based telematics the Company can see inventory, tools and materials transported on every truck. The Company can track parts, equipment, tools, inventory, vehicles and crews with greater precision — warehouse to vehicle to work order – reducing shortages and improving asset tracking. By eliminating misplaced products or tools and matching onboard inventories to daily job assignments, Company crews can run more efficiently and productively. The Company can have full visibility into what they have in stock, what is going on and off of the work trucks, calculated end-of-life dates, and analytical reports detailing pertinent vehicle data and information on driver behavior. Solutions support cloud-based computing, allowing users to have secure, accessible data wherever they are.

With Apptricity Asset-based telematics, the Company can address many of the unique challenges found in plant construction:

High-value equipment and tools stolen, lost or misplaced. Through RFID-based asset tracking, the Company can choose any RFID tag to suit their tracking needs. The Apptricity Asset Management solution can interface with any RFID tag to grab important location data. Some assets may require real-time location information, while some may only need to be scanned once a day. Any RFID tag, regardless of cost, or how frequently it communicates with the server, will work with Apptricity solutions.

Scans of tags can be conducted in two ways: through mobile RFID guns or Apptricity, patent pending technology, I-Connect™ Controller. RFID guns running an Android operating system can load the Apptricity Asset Mobile application to directly input the scan data into the Apptricity application.

Alternatively, I-Connect Controller is a static interrogator that can be set up in strategic spots to ensure maximum coverage of a contained area (warehouse). Antennas are attached to the controller, and will run scans to collect RFID reads, which are then sent to the Web application via cellular or WiFi connection. With assets backed by RFID tags, missing or misplaced assets can be tracked back to the last scan date or custodian last assigned the asset – giving management complete visibility into asset location 24/7/365. Employees become more responsible regarding assets and are also less tempted to steal them.

Security checkpoints. At the beginning of the day, each vehicle is given a load-out profile of what tools and assets are supposed to be in the truck. At the entry and exit points of the main staging area, an RFID security checkpoint is set up with two I-Connect controllers attached to 10-foot-high wooden beams, pointing downward to scan all items (inventory, tools, equipment) in the trucks as they leave. At the end of the day when vehicles return to the staging area, automatic scans are again conducted, comparing end of day scans to morning scans. This allows operational personnel to immediately detect loss or missing tools and equipment.

Lifecycle discrepancies requiring higher-than-necessary purchasing. The solution also contains a robust lifecycle calculator so the Company can enter in purchase date, expected lifespan, and warranty information, to help management make informed decisions about when an item needs to be retired. The Company can set alerts to let management know when an item needs to be retired, or undergo service. This allows management to stay one step ahead on replacing old items and eliminates unnecessary, costly purchases.

Tracking trucks and proper use. By placing a GPS unit and I-Connect Controller in a Company truck, the Apptricity Asset Management system can consistently track vehicle location – in real time, as well as vehicle location history, idling times and other vehicle performance information. All data is stored centrally, where management can run reports and collect analytics on the trucks they are leasing for the project. Real-time reporting allows the Company to take immediate corrective action when necessary, thereby immediately impacting operational costs.

360° Visibility

Know what's on your trucks at all times, and when parts are deployed

Reduce Shrinkage

Know when equipment leaves and returns

Improve Service

Ensure techs have the right equipment when needed

Apptricity Solutions

Secure, cloud-based, asset tracking and inventory management, with RFID technology, for construction sites