

## A BETTER WAY TO BUILD A SUBSTATION

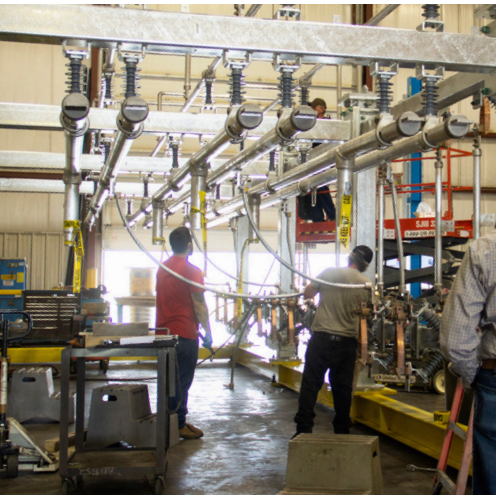
Construction is the phase of substation development where your exposure is greatest for delays, budget overruns, missed deadlines and worker safety. By building substations indoors, you eliminate most of the exposure and unpredictability in the substation construction process.



Valmont Utility® Controlled Environment Construction (CEC) offers so much more than simply moving on-site construction indoors. By eliminating the need to build on-site, substations are now able to be built the way they should have been all along. For Valmont Utility, that means:

- **Proprietary Jigs & Fixtures** — We engineered and built our own jigs and fixtures to ensure more precise construction, while reducing waste and potential problems that could occur during field installation.
- **Non-sequential, Simultaneous Construction** — We optimize your substation construction schedule so that multiple phases of construction can take place simultaneously. This reduces construction time and saves money.
- **3D Modeling, Augmented Reality and LIDAR Scanning** — By first building your substation digitally, we're able to ensure a precise fit and the most efficient construction processes. This virtually eliminates problems during construction or when installing on-site.

There's no question that the ability to build substations indoors has changed how they will be built forever. The savings in cost and time, the increase in worker safety, improved construction quality and the creation of a more exact and robust substation are noteworthy. But where some simply moved outdoor construction inside, we saw the chance to deliver more.



## INCREASING QUALITY, REDUCING RISK

Valmont Utility CEC is more than an alternative method to stick building your substation in the field. It reduces your exposure to the risks involved with substation construction because it touches nearly every part of the process:

- **Provides Financial Benefits** — CEC provides two distinct financial benefits:
  - Significant savings for the construction of each substation go right to the bottom line.
  - Faster construction means that substations are online and operational sooner.
- **Minimizes Weather Impact** — Extreme conditions (rain, snow, storms) can delay on-site substation construction. But even on a sunny day, winds may limit what a crew can accomplish. Building inside means the weather is ideal for substation construction every day.
- **Improves Worker Safety** — Every site has its own challenges (elements, terrain, remote location) that are virtually eliminated with the control and predictability of indoor construction.
- **More Tools and Resources** — By building in a factory, workers have access to the right resources—lifting equipment, tooling, engineering data, etc. They're not limited to what will fit on a truck. When construction standards are higher, the result is a better substation.
- **Reduces Installation Time** — A substation that takes multiple weeks to construct once on site will only require 1 or 2 days to install in the field.
- **Produces a More Robust Substation** — To meet the demands of over-the-road transport, each CEC substation must stand up to motion equivalent to an earthquake and sustained winds up to 70 mph. With Valmont Utility CEC, you're getting a substation that's proven itself in environmental extremes before it ever enters service.
- **Labor Shortage** — Recruiting and retaining specialized craftsmen is difficult—especially during a labor shortage. CEC eliminates recruiting worries and puts the industry's best to work building your substation.

For decades, electric utilities have looked to Valmont Utility for leadership in the design, manufacturing and delivery of substation structures that are the industry's best. It only makes sense that we would lead with Valmont Utility Controlled Environment Construction as well.

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