

Mobile trailer idea improves utility company's ability to deploy quickly.

Customer:
Midwest Utility Company

Location:
Upper Midwest US

Sector:
Public Utility

Footprint:
1,600 square miles

Background

An electric utility located in the northern Midwest needed 7.62kV, 250kVA voltage regulators to deploy at a moment's notice for emergency situations. For successful, quick deployment in emergencies, the regulators would need to be easy to transport to site as well as easy to connect to the electrical system at any time of day and in any type of weather.

Solution

Southern States is an industry leader in switching equipment and in the last few years has responded to customers' requests that we mobilize devices for emergency use. Partnering with Howard Industries, for the regulators, we were able to apply our expertise in the design and assembly of mobile solutions to meet the requirements of this utility. For optimization, we utilized Solid Works™, a 3D software program, to model this design. Due to the weight of the regulators, positioning was a key design focus to insure proper balance and support allowing safe towing of the trailer. With detailed product information from Howard Industries, we worked with the trailer manufacturer on a custom design that seamlessly integrated the beams, cross members, and support plates to the trailer's frame providing a well-balanced design allowing for safe, controlled towing.

Additional features of the mobile regulator included:

- Integrated Grounding connections designed to prevent voltage gradients, allowing for easy and quick grounding.

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- Neutral bushings prewired to a common terminal pad, and power bushings prewired to NEMA pads that are insulated from the supporting structure, allowing for quick connections.
- Conductor support structures designed to securely hold the incoming and outgoing bus, relieving bushing strain while ensuring that proper air clearances for conductors are maintained for enhanced safety.
- Regulator controls are located in a weather-proof enclosure on the rear of the trailer at a height for maximum operational convenience.
- A cabinet for storage of the outrigger pads, wheel chocks, grounding provisions, and other miscellaneous items.
- The mobile regulator can easily be towed by a bucket truck and has electric brakes, so air brake certification is not required

Results

Our customer is pleased with the uniquely-designed trailer that allows temporary distribution regulators to deploy on short notice. The trailer design proved to be efficient, intelligent, and robust for years of trouble-free operation.



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Publication No. CF809-CAP38-R0 04142010
Printed in USA April 2010 ©2010 Southern States, LLC