

# Between the lines



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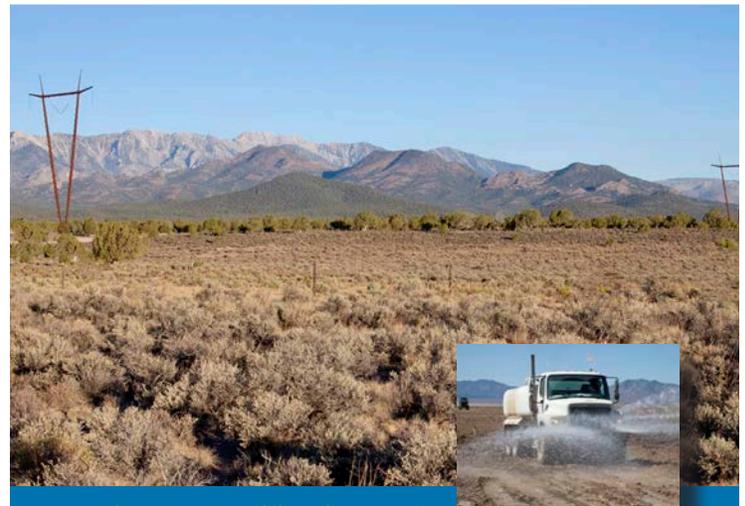
## Sturgeon Electric is On the Move Following Success of ON-Line Project

story by Christine Young Pertel

MYR Group Inc. (MYR Group) subsidiary Sturgeon Electric Company, Inc. (Sturgeon Electric) has successfully finished construction of the 500kV One Nevada Transmission Line (ON-Line), an eagerly anticipated energy milestone that links Nevada Energy's northern and southern power grids for the first time. The 235-mile high-capacity line became operational in January, 2014.

Sturgeon Electric's skillful performance on the high-profile assignment set a new benchmark for the century-old company, said Mindie McIff, Sturgeon Electric's Vice President, Utah T&D.

"We've never before constructed a 500kV line of this magnitude," said McIff. "We completed it on time to the revised schedule, on budget, and it was a successful project that will help Sturgeon Electric move forward. There are a lot of large transmission lines anticipated in the west over the next 15 years, and the majority will be 500kV or higher."



**ENVIRONMENTAL ISSUES** were of major concern on the project. **INSET: 100% dust control and constant water application was required to preserve the desert's delicate topography.**



**ALL SET:** A crew sets one of the massive guayed-V structures into place on its six-foot foundation.

The \$552 million ON-Line is the first phase of the Southwest Intertie Project (SWIP), a venture planned by Great Basin Transmission to build 510 miles of transmission line between Idaho and southern Nevada, where a shortage of transmission capacity has impeded development of renewable power resources. Senate Majority Leader Harry Reid of Nevada helped Great Basin Transmission obtain a \$343 million federal loan guarantee to partially finance SWIP and provide greater access to renewable energy.

Over the course of the project, Sturgeon Electric crews installed over 11 million feet of three-phase triple-bundle conductor through 844 steel tower structures, working through all kinds of weather.

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The crews started at the Harry Allen Substation in Apex, Nevada, north of Las Vegas, and worked their way north through the vast Nevada desert. They finished at the Robinson Summit Substation near Ely along a quiet stretch of Route 50, aptly named “The Loneliest Road in America.”

“Some of the men on this crew were away from home for three years,” said Sturgeon Electric Sr. Project Manager Mark Wojtal. “I think this was the best crew I’ve ever seen. They worked hard, long hours, but always with good attitudes, and they were very professional.”

The workers faced an array of construction, design, and environmental problems, the most serious of which was a design flaw in the steel guyed-V structures.

In December, 2011, eleven months into the project, a wind storm produced structural vibration so severe that hundreds of horizontal braces were ripped from the steel towers, critically compromising their stability.



**A VERY VORACIOUS VENTURE:** Sturgeon Electric crews constructed 866 of these 146’ tubular guyed-V structures along the 235-mile route.

Working with Nevada Energy, Sturgeon Electric took down the new construction and hauled two towers to Texas Tech University, where the structures were erected and studied by engineers with wind expertise. Following months of analysis, a circular strake system was installed around the vertical masts of each tower, changing the vortex of the wind, vastly reducing vibration and thereby eliminating the hazard.

More than a year went by before the strake system was deemed a success, having stabilized all of the towers. Work on the project resumed in February, 2013.



**GOATEES AND PPE: L to R:** Mark Wojtal, Sr. Project Manager, Bryan Vorwaller, Director of Field Operations/Construction Manager, Alex Phillips, Superintendent and Chad Hansen, Wire Foreman

Climate extremes also created concerns, with temperatures swinging from early-morning 20’s to scorching low-100’s in the afternoon.

“We actually planned not to be in the south during high heat,” said Bryan Vorwaller, Sturgeon Electric’s Director of Field Operations and Construction Manager for the ON-Line project. “We did build some lattices in the heat, but had to pull out and head north because crews were becoming overheated and dehydrated.”

In the northern section outside Ely, crews cut roads through mountainous terrain that required extensive blasting just to reach the right of way. All mountain work had to be completed by early October to avoid snowfall and various environmental restrictions.

Much of the construction took place on public property overseen by the U.S. Dept. of the Interior’s Bureau of Land Management, which strictly enforces land-use rules. The Nevada desert is home to a fragile sagebrush habitat that supports a myriad of flora and fauna, including migratory birds, pygmy rabbits, and the endangered desert tortoise.

“We were constantly watching out for tortoises,” said Wojtal. “We had to stop for a week in the spring because of the desert tortoise activity, and once we got back to work, migratory birds started nesting in our towers. We had to skip a section of wire and go back later and finish.”

Obstacles and challenges aside, Wojtal considers the ON-Line a “fantastic project” for Sturgeon Electric.

“I’m proud of the excellent performance of our crews, who came from places all across the nation,” he said. “They had a big job to do, and they did it very well. The line Sturgeon Electric built is serving customers already, and the client is very happy.”

**WANT TO SEE MORE? [CLICK HERE](#) TO VIEW THE ON-LINE VIDEO!**