

Tank Welding Alternative

By David Klein

The Olivenhain Municipal Water District (OMWD), Encinitas, Calif., is a public agency providing water, wastewater services, recycled water, hydroelectricity and the operation of the Elfin Forest Recreational Reserve. Covering 48 sq miles of North San Diego County and serving a population of approximately 68,000 residents, OMWD recently mandated a rehabilitative painting of its 10-million-gal, 300-ft-diameter potable water tank (SAN-227-A Black Mountain Norte).

Cable/cable tray holding system solves water district's tank repainting dilemma

To efficiently orchestrate the project, the tank's contents were drained prior to epoxy coating and painting its interior and exterior steel. The cable trays for the transmission lines had to be removed prior to the process for the multitude of cell phone companies that used the tank as a telecommunications hub for their antennas and cable trays. OMWD then provided an advanced removal/reinstallation request to these companies, noting that this was essential in order to not adversely affect the tank's protective coatings and seals.

Due to the invasive nature of this request, the district received delayed response and coordination with the carriers to reinstall the equipment. In fact, painting had already started and the carriers' welders were not able to replace the tray holders that run the cable up the legs, sides and across the curvatures of the tank, thus rendering rewelding an unviable option. At this juncture, OMWD Operations Supervisor Eric Phillips was faced with finding a noninvasive solution to advance the project's timeline for completion in the fourth quarter of 2010.

Magnetic Solution & Specs

Phillips quickly sought council with the project's construction manager, Chris Stump of Broken Arrow Communications, Carlsbad, Calif., to develop a solution for the application with Metal & Cable Corp. Inc., Twinsburg, Ohio, who had expertise in noninvasive magnetic design configurations. The ensuing invention was the patent-pending Magnemount cable/cable tray holding system, which presented a non-penetrating option to the welding and epoxy attachment methods that were delaying the project.

Designed to withstand winds up to 150 mph, the system presented OMWD with a high-capacity magnetic solution to carry the cables and trays securely across and down the curvatures of the steel water tank. Most importantly, it presented no damage to the water tank's interior or exterior surfaces, providing a fast and clean onsite installation that allowed the flexibility to remove and attach at will without welding.

System Features

Independently suspended/mounted magnets allow the Magnemount cable tray mounts to be placed securely on steel water towers or legs with as little as a 4-ft diameter, without welding or epoxy.

The solution also offers a quick, clean installation. The only requirement is to unload the framing system, place the supports and attach and secure the

brackets—typically only a couple minutes per holder.

Furthermore, it allows for on-the-fly adjustments. It takes no more than one minute to make adjustments, if necessary, to each magnet while it is installed on the water tower to orient to its specific curve.

Independent tests passed include stringent seismic, mechanical and failure capacity.

Results

The Magnemount system eliminated the need for Broken Arrow's carrier installers to weld, cut cable trays or add additional hardware to accept the arc of the tank. This was accomplished by placing one cable/cable tray mount on each end of every length of cable tray. The final system leverages the originally patented Magnemount (Patent No. 7,624,957) attached to 304-grade stainless steel (Unistrut).

Broken Arrow completed the first installation of the system for national wireless carrier Cricket Communications Inc., San Diego, in August 2010. The installation required approximately 250 ft of cable tray and 100 cable/cable tray holders. OMWD also has required installers for all of the tank's wireless carriers, including Verizon, Sprint and T-Mobile, to incorporate non-weld systems; all are in the process of implementing and installing these systems to meet compliance.

"This system is easy, flexible, maintenance free and eliminates permanent welding," Phillips said. "Also, with multiple wireless carriers on the tank, it simplifies the logistics of coordinating whose tray goes where. Because the Magnemount is not a permanent weld, it simplifies the process. The adjustments can be made easily on the fly for repositioning them wherever they need to be placed."

Broken Arrow's Chris Stump said: "The Magnemount system provides an outstanding alternative to welding, which is often not allowed by certain water districts. More importantly, this magnetic solution allows for a much less invasive installation process, which provides cell phone companies with a viable option to present to water municipalities who are averse to welding on their tanks. Ultimately, it's a win-win for water districts, cell phone companies and the contractors performing the work." **WWD**

David Klein is president of Metal & Cable Corp. Klein can be reached at david@metal-cable.com or 330.963.7909.

For more information, write in 1113 on this issue's Reader Service Card or visit www.wwdmag.com/lm.cfm/wd031113.



The cable/cable tray holding system set the OMWD rehabilitative painting project back on track.



The magnetic solution proved a viable alternative to welding and allowed for a much less invasive procedure.