

# Trenchless TECHNOLOGY

*Nashville - Davidson County, Tenn.*

## Performance-Based Contract Key to Sewer Rehab Project



Annual Sewer Survey Results  
Cross-Bores and HDD  
- What's Being Done?

**Inside Cover:** ▶  
New Installation Winner  
Gazoduc Becancour - HDD Intersect

## Perfection President Heads AMCO

Roy A. Sutterfield, president of Perfection Corp., Madison, Ohio, has been promoted to president of American Meter Co. (AMCO), including Perfection Corp., Canadian Meter Co., North American Service Group and H&H Engineered Molded Products. Prior to his appointment as president of AMCO, Sutterfield was president of Perfection Corp. since March 2005.



Sutterfield

AMCO will relocate its headquarters from Horsham, Pa. to Madison, Ohio. Along with this move will be the creation of certain key functions to support its customer service, business development and sales activities.

AMCO is part of Elster Group, a worldwide leader in technology serving gas, electric and water utilities. For more than 160 years AMCO has paved the way for advancement in the gas industry with a history of design inno-

vations that have become the standard. AMCO has more than 1,400 employees at operations located in Canada, the United States and Mexico.

Sutterfield brings to AMCO more than 20 years of experience in senior executive management roles with prominent manufacturers and distributors serving the utility sector. He holds a master's degree in business administration from the University of South Florida and a bachelor's degree in business and engineering from the University of Missouri.

## AEM Names Director of Statistics & Market Info

The Association of Equipment Manufacturers (AEM) has named **Rex Spietsma** as director of statistics and market information, overseeing the association's equipment market data reporting programs, both domestic and worldwide.

AEM statistical programs cover more than 200 product lines and provide benchmarking and forecasting information at the county, state, national

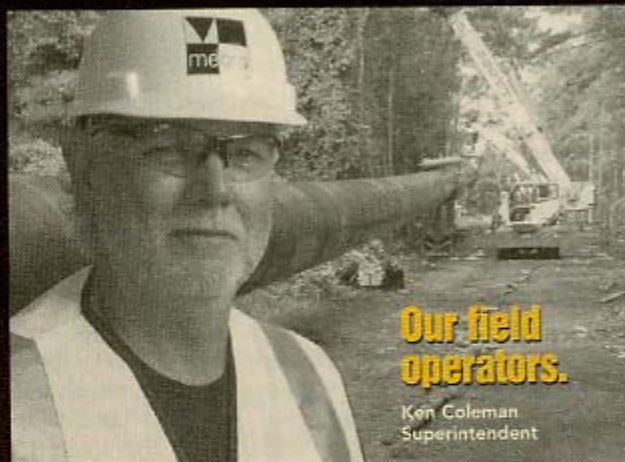
and international levels. The association is also developing in-country statistics programs, starting with China, to provide more in-depth data to program participants.

## CH2M HILL Names Sr. VP/CTO

CH2M HILL, a global full-service engineering, construction, and operations firm based, has named **Dr. Glen Daigger** senior vice president and chief technology officer for the firm's global Civil Infrastructure Business Group.

In this capacity, Daigger will provide overall leadership to CH2M HILL Civil Infrastructure technology organizations including the firm's OMI, Transportation and Water Business Groups. Daigger also will be responsible for directing the firm's Technology Leadership Group (TLG) and leading civil infrastructure technology exploitation efforts. As senior vice president, Daigger will continue his support of CH2M HILL's Water Business Group by lending expertise across several of the firm's initiatives.

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## RUNNER UP

# Elizabeth River 230 kV Electrical Crossings — Norfolk, Va.

By Sharon M. Bueno

The Runner Up for *Trenchless Technology Project of the Year* — New Installation was an HDD project that involved installing two parallel 8-in. steel pipelines under the Elizabeth River using the intersect method. Each bore was more than 7,300 ft in length and involved a series of 20-degree horizontal curves, plus 48-degree horizontal curves at their exits.

The purpose of the project — which took about 10 weeks to complete — was for Dominion Virginia Power to expand its electrical capabilities to the area by upgrading its existing line between the U.S. Navy's Craney Island fuel depot in Portsmouth, Va., to the container shipping facility on Tanner's Point, Norfolk, Va. After the steel casing was installed, new 230 kV transmission electrical cables would be pulled inside.

While the use of HDD was key to the project's success, the contract put out

for bid by Dominion Virginia Power didn't specify its use. "We understand that some of the bids incorporated HDD to a certain extent with some trenching at the end. We were the only ones to advocate complete use of directional drilling from Craney Island to Tanner's Point," explains Ron Halderman, project manager for Mears Group. "It was quite risky [to go with HDD] because the length was extremely long, the soils were not absolutely perfect and there were a series of horizontal curves in the right of way."

"Prior to the UTEC/Mears bid presentation, Dominion's Electric Transmission had no experience with HDD. The comfort level with HDD and the risk associated with the process made Dominion's engineering and management skeptical moving forward with the proposal. The pivotal point in the decision to go with the UTEC/Mears proposal was Mears'

presentation of the drilling process. Their demeanor, assuredness and assessment of the risks including the mitigation of the risk made the proposal palatable," explains Mike Helck Dominion Electric Transmission project manager.

The two lines were initially laid out as 7,500-ft bores, with a 50-ft right of way. The bores were also required to be 10 ft apart. However, with the 48-degree exit curves in the bore as they head into Tanner's Point, the right of way was shortened to 30 ft. Also, the bores themselves were shortened to just more than 7,300 ft each because the maximum length, according to UTEC and its engineers, that the 230 kV cable could be pulled was 7,350 ft.

Initially, an intersect wasn't planned for this project and Mears was going to try to drill both pilot bores all the way across in one shot; however, Halderman explains that contingen-

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cies (the intersects) were built into the plan in case they couldn't make it across.

For the project, Mears used its American Augers 660,000- and 140,000-lb rigs, placing the larger rig on the Craney Island side. A TRI mud recycling system was also used as were steering tools from Prime Horizontal, together with a ParaTrack system. The ParaTrack coil was laid by divers on the river bottom.

For the first bore, Mears got about a mile into the drilling when it became apparent that it would not make it across. "At that point, we elected to drop down to our first contingency, which was to use the 140,000-lb rig on the Tanner's Point side, drill around the S curve and make the intersection, which went beautifully," Halderman says.



This project involved two intersects, each more than 7,300 ft.

The first crossing was completed by running 12-in. casing over the intersection point and then pushing the Craney Island string out through the casing to the exit point on the Tanner's Point side.

The second crossing was another story. Given how the first bore played out, Mears was prepared to employ the intersect method. But when the pilot bore reached the S curve from the Tanner's Point side of the intersect, the soil geology changed just enough (got softer) that the bore couldn't come out of the curve straight. After several attempts, the drill pipe eventually bowed and broke in the hole about 5,000 ft into the bore.

At that point, Mears made two decisions. First, Mears decided to re-drill the Tanner's Point side of the intersect, paralleling the line with another string to intersect with the Craney Island pilot bore — this was so the crew would be ready to go in case the drill string was irretrievable. And secondly, from the Craney Island side, Mears would go into the original drill hole with a fishing tool to locate and then retrieve the entire broken drill string — which it successfully did. The fishing tool was modified to be

used in front of a steering tool, acting like a drill bit.

Once the drill string was recovered, the crew went back to the original Tanner's Point hole, completed the intersect and pulled in the casing.

"It's hard to say that you are pleased to have a broken drill pipe, but on the other hand, we are pleased that we were able to solve the problem and develop a technique that we

will use in the future," Halderman says of the modified fishing tool.

Sharon M. Bueno is managing editor of *Trenchless Technology*.

Project Owner .....	Dominion Virginia Power
Prime Contractor .....	UTEC Constructors Group
Pipeline Contractor .....	Mears Group
Engineers .....	Power Engineering

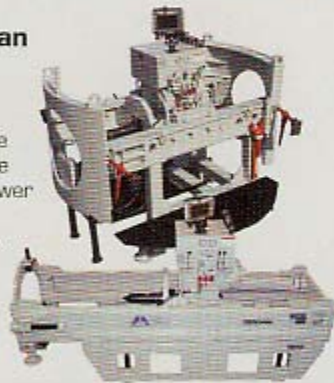
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