

LONGER CABLE PULLS OBTAINED WITH VERSATILE, ECONOMIC FRE DUCT

Underwater installation meets Wisconsin paper company's needs

When the Nekoosa Edwards Paper Company of Port Edward, Wisconsin planned a new expansion facility for their effluent treatment plant on the opposite side of the Wisconsin River to the main plant, the job of designing a power and control cable circuitry supply system, connecting the two facilities, was awarded to Beck Consultants.

In the course of exploring various systems, Beck Consultants became interested in the FRE[®] –Fiberglass Reinforced Epoxy - underwater duct concept developed by Canadian General Electric. They subsequently specified this system to carry the cables under the Wisconsin River.

According to specifications obtained by General Electric Supply Company's Appleton, Wisconsin office, the cable was rated 15 kV, polyethylene insulated, concentric, with a 124 70Y /7200V , single or three-phase grounded system, suitable for burial in wet or dry locations, at a maximum continuous operating temperature of 90°C. The cable size was 300MCM, 37-strand.

Therefore, ~ five-inch, I.D., FRE[®] helically-wound, semi-rigid underwater duct was chosen for the Wisconsin River crossing. It was factory-joined in 40-foot lengths with a bell and spigot joining system.

The five lead ducts used in pulling the assembly were supplied with bull-nose pulling heads incorporating a flooding system and were attached at the factory before delivery. This would permit the duct to flood and sink to the trench bottom during the pull-in operation. With splicing completed on the site, the duct was left assembled in relaxed condition -five, 1,200- foot-long, joined lengths -on the river bank.

On the mid-winter pulling date, three of the five ducts were pulled through the river in one assembled package. These were to house the power cables. The two remaining ducts were also pulled, as one assembly, to house the system's control wiring. Estimated river width, at the crossing point, was approximately 1,000 feet. The maximum depth of the navigable river's bottom was estimated at between 15 and 18 feet. The whole pulling operation was completed in less than a half-day. Although the temperature was close to 0°F, no problems were encountered with installation or duct. Since installation, the paper company is completely satisfied with the system.