

This copy is for your personal, noncommercial use only. You can order presentation-ready copies for distribution to your colleagues, clients or customers [here](#) or use the "Reprints" tool that appears next to any article. Visit www.nytreprints.com for samples and additional information. [Order a reprint of this article now.](#)

December 26, 2011

Ship's Espresso-Fueled Mission: Laying Cables Beneath the Hudson

By **PATRICK McGEEHAN**

For several minutes on Thursday, Al Figueroa was up to his neck in mud nearly 70 feet below the swift-moving surface of the Hudson River.

Mr. Figueroa, who has been diving in and around New York Harbor for 24 years, was well acquainted with the river's shifting currents. Not so for the sailors and engineers on the hulking ship floating above him: almost all of them had traveled from Italy in the fall to stretch several miles of power cables beneath the river between Midtown Manhattan and New Jersey.

The cables, coiled in huge steel baskets on the deck of the ship, were custom-made in a factory near Naples to survive for decades in the muck and clay beneath the Hudson. The ship, the [Giulio Verne](#), is one of only two in the world capable of laying so much heavy cable across ocean floors and deep riverbeds.

"The ship is filled like an egg," said [Sebastiano Aleo](#), an executive who oversees installation projects for its owner, [Prysmian Powerlink](#). "There is no more room on it."

The [Giulio Verne](#) left Naples in late October and, after 25 days on the Atlantic Ocean, arrived in New York, where a crew of 70 began preparing for a project that had been years in the planning. By Monday, it was halfway to its destination of Edgewater, N.J.

The cables on the ship were designed to carry as much as 660 megawatts of electricity — about 5 percent of the power consumed in New York City on the hottest summer days — to Midtown Manhattan from the main power grid west of the Hudson. The power could replace some of the supply that would be lost if Gov. Andrew M. Cuomo succeeds in his quest to shut down the [Indian Point](#) nuclear plant, 35 miles north of Midtown.

The New York Power Authority, which buys electricity for many city and state agencies, strongly supported the cross-Hudson cable plan. But the \$850 million project is a privately

financed venture, managed by PowerBridge, the same company that ran a cable from New Jersey to Long Island in 2007.

PowerBridge has sold most of the capacity on the cable to the power authority. But it can sell additional capacity to Consolidated Edison or other power providers. The laying of the cable accounts for about \$175 million of the total cost, said Edward M. Stern, the chief executive of PowerBridge.

The electricity that is to run through the cables, three of them bundled together with two thinner fiber-optic wires, is from the grid that serves New Jersey and several other states. It is usually significantly less expensive than electricity made in the city.

But first, the men on the ship — they are all men and almost all Italian — must get the cables buried. That was why Mr. Figueroa was deep in the water, feeling his way around a plow that had been lowered to the river bottom.

After plunging into the 48-degree water about 700 feet from the west end of 53rd Street, Mr. Figueroa reported his observations through a microphone inside his bright yellow helmet. He had a camera too, but it was virtually useless in the murk of the Hudson.

In the “dive shack” — a steel freight container filled with hoses and gauges — on a barge tethered to the ship, two supervisors listened to Mr. Figueroa’s transmissions. Beside them stood a member of the Giulio Verne’s engineering crew, who translated the information into Italian and relayed it to the control room on the ship’s main deck.

Inside the control room, Mr. Aleo and his engineers kept up a spirited debate as they surveyed the 21 computer screens mounted on one wall. Some displayed video of the situation underwater from different angles; some showed data about the angle of the plow and the tension on the cables passing through it into the riverbed.

The discussion rarely ceased, with one notable exception: Every hour, a crew member circulated with a pot of espresso and a stack of two-inch-tall plastic cups.

If an army travels on its stomach, an Italian ship’s crew floats on a steady stream of coffee. They eat well, too. On Thursday, lunch was fettuccine alla bolognese with an antipasto spread, oranges and, of course, espresso.

The Christmas tree in the mess hall served as a reminder that the crew would miss the holidays with their families. Their work in the Hudson was not likely to wrap up until just before or after New Year’s Day.

“Unfortunately, it’s not the first Christmas we have passed on this ship,” Mr. Aleo said.

The ship has traveled the world, laying cables across seas from Sardinia to Australia, he said. Mr. Aleo said that the length and depth of those crossings presented more vexing technical challenges than the Hudson project, which will run only a few miles underwater, from West 52nd Street to Edgewater. The construction on the two sides of the river is not scheduled to be completed until mid-2013. So, on Thursday afternoon, when the brief lull between the strong tides of the Hudson passed before the crew of the Giulio Verne could get the plow moving upriver, Mr. Stern, the chief executive, remained sanguine.

“I’ve waited four years, I can wait another few hours,” he said, leaning against the ship’s rail, BlackBerry in hand.

On Friday, the plow, using jets of water to cut through the silt and clay, began threading the cables into the trench at the tortoise-like pace of about 325 feet per hour. Almost immediately, it ran into some industrial junk. But after finding a way around it, the crew resumed laying the cables.

They expected to reach New Jersey before the end of this week.