

Burns Harbor Gets a Charge from High-Capacity Connectors

One of the many recent efforts to improve throughput volume at Bethlehem Steel's Burns Harbor Div. started with a close look at the integrated works' massive 60,000-lb electric coil carriers.

"We were seeing a large number of failures on our coil carriers due to excessive amp draw across the 350 amp battery connectors on the carriers," the plant's general foreman, Richard Jankowicz, says. "Our operators need to run the carriers hard, constantly, to keep up with the customer service. The batteries on the carriers would get discharged down to 85%, or until they were stone dead, generating greater heat and amp draw across the connector — and resulting in meltdowns."

Burns Harbor was going through as many as 200 350-amp end connectors every week, creating a tremendous overrun in cost and man hours and the potential of dangerous fires.

Bethlehem was looking for a higher-rated capacity connector for these carriers, so it turned the task over to Voss Equipment, a Harvey, IL, distributor of material-handling equipment. The company is Burns Harbor's primary supplier for the coil carriers.

Hoping to find a source for power connectors that would address all of Bethlehem's demands, Voss Equipment settled on Anderson Power Products, Sterling, MA. Recently, APP had introduced its new SBE 700-amp power connector for "opportunity charging" applications.

Voss Equipment president Peter Voss, Sr., says, "We discovered that there were a number of companies that manufactured connectors for smaller trucks and carriers, but for high-current truck applications, APP is really the only option for high-quality, high-current connectors."

Engineers from APP traveled to Burns Harbor, helped to install the



Electric coil carriers at Burns Harbor were running out of power because demand on the battery connectors was too high. A new, 700-amp connector cuts the downtime, among other improvements for the plant's coil transport process.

SBE 700-amp connectors, and trained the operators there to use the product. Jankowicz says, "We are fortunate to have such a great working relationship with both APP and Voss Equipment. They provided excellent hands-on support throughout the installation and training process."

APP designed the SBE 700-amp

connector for high-current, high-speed opportunity charging applications. A genderless connector, it is hot-pluggable with space for up to 10 individual auxiliary signal lines. The 700-amp connector is engineered with flame-retardant UL94 V-0 material, and is "finger proof" and self-aligning. An important element in any power connector is its

ability to be connected and disconnected safely. APP designed its connector with a specific keying system that ensures only matching connectors can be mated.

APP's attention to precision engineering with the 700-amp connector made it the solution to Burns Harbor's problem. Its amp allowance has decreased tractor downtime significantly. And, with the opportunity charging feature, the plant has been able to modify its carriers to include battery discharge interrupts and indicators. It means operators can recognize when the battery is running low.

Additionally, the 700-amp connectors allow the carriers to use an interrupt system that prevents the hoist from operating while the vehicle is in motion, greatly reducing downtime for battery recharging. "The SBE 700's amp allowance has granted us the ability to install these additional features. In doing so we have been able to solve our tractor problems, saving us precious resources like time and money," Jankowicz summarizes.

A serious problem that Bethlehem sought to avoid when it inte-



The SBE 700-amp connector is designed high-current, high-speed opportunity charging. It's a genderless connector that is "hot-pluggable" with space for up to 10 individual auxiliary signal lines.

grated the 700-amp connector was fire hazards. Burns Harbor needed to split the currency line with two connectors to accommodate the over amperage, posing a potential fire hazard. "Safety for our tractor operators was the primary factor in choosing APP's connectors, followed by the connectors reliability," says Jankowicz. The flame-retardant connector has integrated cable clamps that protect the operator

against cable pullout under the most adverse conditions, which may be frequent in a steel mill.

"To date, Bethlehem Steel has ordered 48 mated pairs of connectors, and each tractor uses eight connectors. This includes two connectors on the tractor, battery, charger, and spare battery. The connectors have exceeded expectations," Peter Voss concludes.

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