

Special Issue: Industrial Vacuum Loading

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A Dynamite Idea

NY contractor blasts away at tough loading jobs

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The Problem Solvers
Gaffin Industrial vac-loading work serves clients well

A Dynamite Idea

New York contractor combines use of explosives with top-notch equipment and personnel to tackle tough vacuum loading jobs

By Scottie Dayton



Marcel McCaffity (left) and Danny Alley of North American Industrial Services move a vacuum hose with safety "T" break-off into position at the Chalk Point Generating Plant in Aquasco, Md. (Photos by Val Nyce and North American Industrial Services)

Franks and Tim Zilka of Ballston Spa, N.Y., cut their teeth on outage management at facilities — cleaning boilers, tanks, production lines, and special waterblasting and vacuum truck applications as part of their maintenance programs. The brothers followed in their father's footsteps, but only as far as the work they did. Together

with partner Kurt Prouty, they incorporated North American Industrial Services in July 1994, and had opened three regional branches by 1997.

Outage management and emergency outages form a competitive market, with six rival firms in the upstate New York area alone.

North American focused on operations that included hydro-demolition, water and abrasive blasting, explosive de-slugging and vacuum loading. As growth began leveling out, they refocused the company's sales program. In March 2002, the Zilkas hired Chris



Approximately 60 percent of North American's business involves explosives and grit-blasting, serving such high-profile companies as General Electric, DuPont, General Motors and Ford.

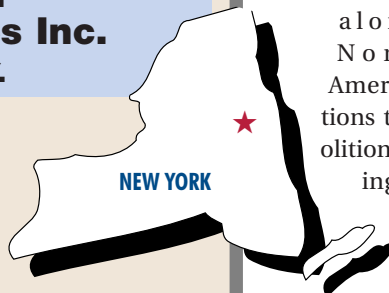
Spain, 32, as their national sales manager.

Under his aggressive sales plan, and with support from general manager Rick Matteson, the business expanded 30 percent from 2003 to 2006. As it did, management recognized the potential for geographic growth. Today, the company employs 360 people at its 16 branch offices, all capable of turnkey services. And some of the original 17 employees are still on the payroll.

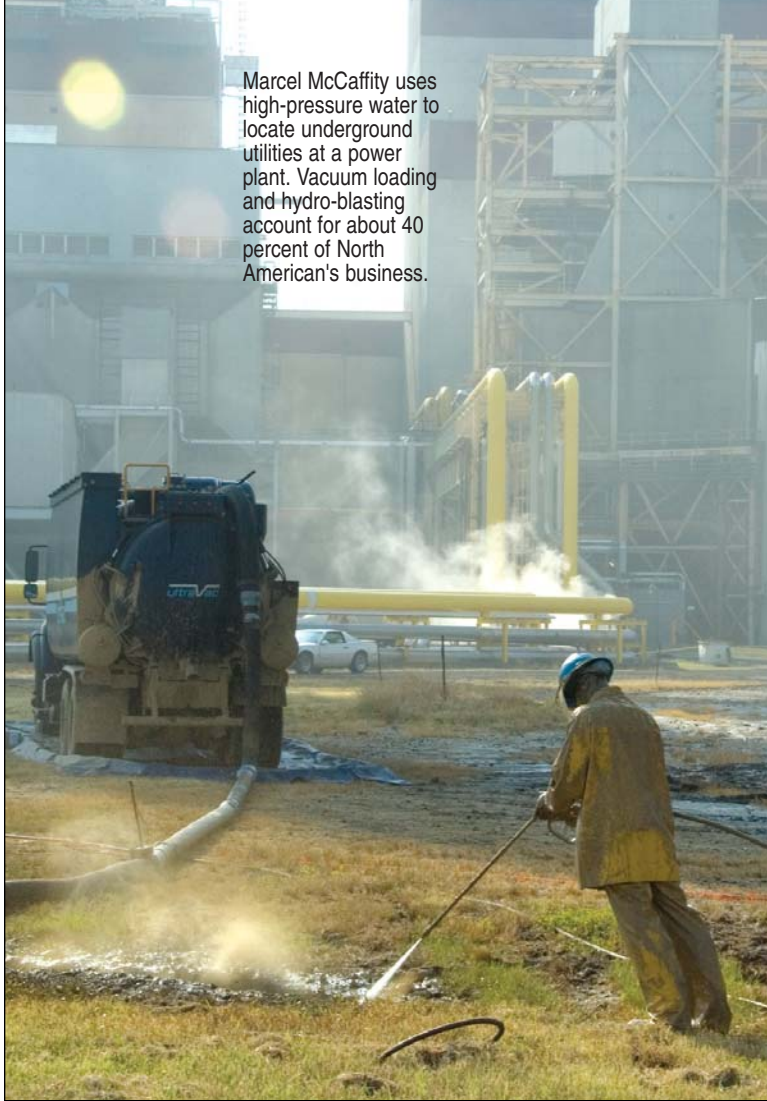
Profile

North American Industrial Services Inc.
Ballston Spa, N.Y.

Owners: Frank and Tim Zilka, and Kurt Prouty
Founded: 1994
Employees: 360
Service area: Nationwide
Specialties: Critical Path Outages
Web site: www.naisinc.com



Marcel McCaffity uses high-pressure water to locate underground utilities at a power plant. Vacuum loading and hydro-blasting account for about 40 percent of North American's business.



“THE EMPLOYEES ARE PROFESSIONAL, THOROUGH, ORGANIZED, AND DON’T NEED A LOT OF HAND-HOLDING. THEY KNOW WHAT NEEDS TO BE DONE IN A SAFE MANNER, AND THEY DO IT.”

Chris Spain

the surface and using a vacuum truck — sometimes on a barge — to collect the flakes. They did hydro-demolition for contractors, using water to cut off the top of concrete domes in nuclear facilities that were changing out their turbines.

During Spain's first year, management realized the company's niche was critical path outages for chemical, paper and pulp, and pharmaceutical factories, the power industry and refineries. They consequently reduced the amount of bridge and roadwork and concentrated on promoting the core business.

Most outage management operations are performed under critical path — where a job must be completed in a certain number of hours because other contractors are waiting to make repairs or upgrades at specific times. Missing deadlines holds up other vendors and costs plants hundreds of thousands of dollars in additional

online blasting. The process enables plants to maintain productivity and reach planned outage. “Blasting is roughly twice as fast as waterblasting, but more expensive,” says Spain. “Water can get into more crevices, but cleaning takes longer, so the cost of both processes is usually comparative. However, facilities can lose \$100,000 to \$300,000 a day when a boiler is down, so having it back online one day early makes them happy.”

EQUIPPED TO SUCCEED

North American's business is about 40 percent vacuum loading and hydro-blasting, and 60 percent explosives and grit-blasting. Their customers include high profile companies, including General Electric, DuPont, General Motors, and Ford. The work requires a fleet of vacuum trucks to clean up the debris.

“We prefer Hi-Vacs to handle fly ash because you can really load them,” says Spain. But we use all makes and each has its specific benefits.” The company has 19 Hi-Vacs, 17 Guzzlers, eight GapVacs, two Wastequip Cuscos, and two Presvacs.

With bridge and roadwork now limited, the abrasive-blasting division began removing coatings, cleaning boilers, tanks, and electrostatic precipitators (assist in lowering power plant emissions). “The cleaning process involves filling a 6-ton pot with grit, then propelling it at a high velocity through a gun,” says Spain. “It's sandblasting, only using multiple types of abrasive media.”

Knowing that production is key and equipment

CRITICAL PATH

“We did a lot of research on where to open branch offices,” says Spain. “Outages are highly technical and dangerous, often requiring 60 to 100 employees. We like to staff them using our trained personnel. That prerequisite meant the service area for each office had to be around 150 miles or a three-hour drive. Now if one branch needs more vac trucks or people, we can draw them from surrounding locations.”

Introducing turnkey services to all branch offices required tremendous organization and new employees, but the Zilkas have a talent for hiring people who fit their mold, then bringing out the best in them. “I've been in the industry 15 years and have never seen a team like the one we have,” says Spain. “The employees are professional, thorough, organized, and don't need a lot of hand-holding. They know what needs to be done in a safe manner, and they do it.”

Until 2003, North American's vacuum loading jobs often involved environmental bridge and roadwork. To prepare bridges for painting, the completely enclosed operation involved grit-blasting

hourly fees.

North American initially used high-pressure waterblasting (5,000 to 40,000 psi) and high-volume pumps (26 to 185 gpm at 600 hp) to remove slag from boilers and their tubes, but the water-ash mix can create a corrosive sludge. Always looking for better technology, the Zilkas switched to explosive de-slagging (the binary explosive is inert until mixed together).

The blast concussion knocks off the slag, and Hi-Vacs or Guzzlers pulling 27 inches of vacuum at 5,000 cfm suck it up. The boiler tube can then be power-washed to white metal for inspection, and the used water recovered by the vacuum trucks.

Instead of facing a forced outage to remove interim slag buildup, facilities call North American to do

North American's vacuum loading, hydro-blasting and grit-blasting requires a fleet of trucks to clean up the debris. The company owns 19 Hi-Vacs, 17 Guzzlers, eight GapVacs, two Wastequip Cuscos and two Presvacs.



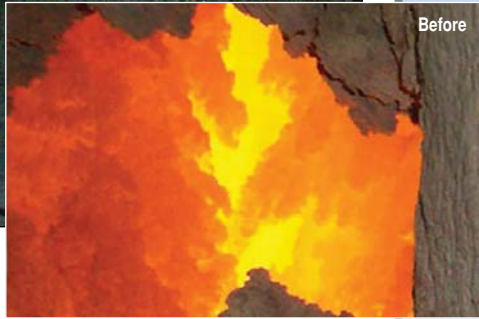
Larry Zimmerman, a supervisor with North American Industrial Services, monitors the vacuum controls.

“WE NO LONGER FEEL COMFORTABLE USING DYNAMITE, BUT A BINARY CHARGE IS VERY STABLE. OUR BLASTERS USE TELESCOPING POLES TO SET THE CHARGE AND ARE NEVER IN THE ENCLOSURE WITH IT.”

Chris Spain



Blasters use telescoping poles to set the charge, which knocks slag off boilers and their tubes so Hi-Vacs or Guzzlers, pulling 27 inches of vacuum at 5,000 cfm, can vacuum it up.



is 80 percent of the job, North American purchases only the best of everything. Its strategy pays off numerous times and wins new customers. One example was a critical path job to be completed in three days, but the bid-winning contractor took seven. Spain approached the company and said that North American could do it in less than three days.

“We brought in our usual rig with 6 tons of grit and a trailer full of extra grit,” says Spain. “We set up multiple gun lances and ran three shifts of operators. They finished the work in two-and-a-half days, and did a better job.”

The company also relies heavily on 2D and 3D nozzles (automated power-washing equipment) instead of employees manning guns. The nozzles are on a cable and spin 360 degrees. “Our men never enter the enclosure, enabling us to pump more water with bigger equipment and get a cleaner job,”



A robot, resembling a small bulldozer, has a camera mounted to its oscillating nozzle so operators can monitor the cleaning process.

North American Works to Meet Expectations of Demanding Clients

North American Industrial Services in Ballston Spa, N.Y., specializes in outage management. Their clients include chemical manufacturers, automotive giants, and pharmaceutical and power plants. Cleaning tanks and production lines is time-sensitive work, and must be completed on a rigid schedule to prevent customers from paying additional mechanical contractor fees.

“On many jobs, we’re not sure that we’ll make our deadline,” says national sales manager Chris Spain. “It happens a lot.” One example was a power plant in New York City that was more particular about the definition of clean than most clients.

The job involved cleaning four boilers, each larger than five single-family homes. After waterblasting a boiler, a vendor normally arrives to inspect it, but the plant wanted to wait until the boiler dried so no one got wet. As it did, the surface developed a coating of rust. The inspector insisted that the rust had to go, so North American cleaned the boiler again.

“It’s a cycle that doesn’t end unless you inspect the boiler while it’s wet,” Spain explains. “The outage was scheduled for 11 days, and it took us 11-and-one-half days. When management realized what was happening, they were apologetic and awarded us the next outage.”

The plant had told North American that a previous vendor used almost 300,000 gallons of water to clean just one boiler, so the company devised a technique to reduce its water usage. “We used high-volume — 26 to 185 gpm at 600 hp — pumps, the kind that arrive on tractor-trailers instead of little tow-behind units,” says Spain. “We were cleaning more, but using less — around 200,000 gallons per boiler.” The plant supplied the water from a fire hydrant.

Because the facility was in New York City, it had no way to dispose of the used water. North American’s turnkey service, however, included 22,000-gallon frac tanks to store the water, and the trucks to transport them to a wastewater treatment facility.

says Spain. Automated power-washing tools are usually purchased from NLB Corp. and Gardner Denver Water Jetting Systems.

When tools are not commercially available, North

American designs and manufactures its own. One example is robots that clean small places. The 18-inch wide, 14-inch high, and 24-inch long hydraulic tractors resemble small bulldozers. They have a camera mounted to the oscillating nozzle so operators can watch the cleaning process on a monitor. “It’s much safer than asking men to crawl into confined spaces with high-powered jetters,” says Spain.

North American also makes sprocket wheels and tracks for the transporters. The hydraulic systems are powerful enough that a man can stand on the tractor and drive it around.

TAKING CARE OF PEOPLE

North American, licensed to fly explosives around the country, employs 90 licensed blasters. “We no longer feel comfortable using dynamite, but a binary charge is very stable,” says Spain. “Our blasters use telescoping poles to set the

charge and are never in the enclosure with it.”

Safety is paramount. Each region has its own environmental and safety manager in charge of job-site analysis and pre-planning. Employees are cross-trained. Blasters can help the industrial crews with vacuum loading and waterblasting and can assist the explosives teams with monitoring or processing forms. (Since 9/11, tightened security has radically increased the company’s paperwork and cost of blasting permits.)

Blasters go through years of training before being licensed, and most states issue their own licenses. Re-certification also is required and is state specific.

The Zilkas treat their employees like family and offer above-average pay. “That’s the way to get good people and keep them, because they’re worth their weight in gold,” says Spain. ■

MORE INFO:

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