Lifting Equipment In The Water & Wastewater Industry

As Water and Wastewater Facilities have evolved, so, too, has the technology that goes into their operation, processes and designs. Pumps and mixers are larger and heavier, UV treatment systems sterilize the water and Plants have gotten bigger with more motors, compressors and valves to maintain.

As we have experienced this growth in our industry, fewer new Operators are coming into the industry, forcing existing Operators and Maintenance Staff often to perform necessary maintenance and day-to-day operations with less than the ideal number of staff. Engineers are oftentimes working double duties, as well, to get designs completed for the ever-growing number of Plant upgrades and new construction; maintenance seems to get pushed by the wayside. With Health and Safety as a top concern among Operations staff, we need to look at the way that modern Plants can be maintained keeping both Safety and cost efficiencies in mind

The standard maintenance procedure for new-build Water and Wastewater Treatment Plants is the overhead crane, or 'I' beam in the ceiling. This is a very simple, expensive and inefficient device in most cases; it requires very little planning, and demands huge structural support, and often a permanent hoist-and-trolley assembly. These cranes are generally rarely used, and during upgrades, are often removed as they do not service the new equipment. Overhead cranes and 'I' beams often do not allow equipment to be removed from the room, meaning that the equipment must be placed on carts and manhandled through the plant. Oftentimes, an area will have too many pumps or motors spread around the room, making an overhead crane impossible to utilize, or prohibitively expensive to install to accommodate piping and wiring near the ceiling.

Another very common issue that operations staff encounter on a daily basis is the "portable" davit crane. These units are generally supplied by pump manufacturers to lift the pumps or mixers as part of a package. Because pump manufacturers have little or no experience with lifting devices, the "portable" davit is generally made of steel tubing, in a generic socket or mounting base plate and is very heavy. The units have been shown to fail under load with unsettling frequency, and are nearly impossible to rotate with even two Operators. The supplied winches are generally low-

cost boat winches which do not have disc brakes to prevent dropping of the loads or proprietary chain hoists that utilize the pump chain, which pulls all the assorted greases and solids through the chain hoist while to pump is lifted.

Utilizing these "standard" devices is neither cost effective, nor the safest way of allowing Operators to perform their duties in maintaining the Plant.

Recently, innovative new aluminum lifting products have been introduced to the marketplace by Easily Moved Equipment Inc. (known as eme). The units are strong, lightweight, and very easy to move from location to location, in and around a treatment facility. As an example of the light weight of the units, a 4400-lb capacity eme GANTRY Crane, with a height adjustment from 5.5 feet to 7.5 feet and a Beam span of eight feet weighs just 258 lbs – much lighter than the weight of the next-lightest, 2-ton crane available on the market.

Utilizing up to two portable lightweight GANTRY Cranes for an entire treatment plant can eliminate the need for almost ALL the overhead or 'I' beam cranes in the ceiling, and allow the maintenance of every piece of equipment in the entire facility. Because of the portability of the lightweight eme GANTRY Cranes, they offer significant capital savings over permanent overhead cranes, as well as the flexibility of rolling the removed equipment to a repair facility on site, or to a truck for removal to a repair facility.

With the introduction of truly portable, lightweight, aluminum lifting eme DAVITS, entire Treatment Plants and Pumping Stations can be maintained using just one or two units. Installing permanent bases at each location and moving the DAVIT from site to site again offers significant capital savings. These eme DAVITS can be rotated easily under a full load with one Operator, and the setup time is under one minute. As an example of the weight of these units, an eme DAVIT Crane, with a capacity of 1100 lbs, weighs just 31 lbs, with a height of seven feet and an adjustable radius of 38-to-44 inches. These units are up to five times lighter than the next lightest DAVIT of the same capacity in the marketplace.

Health and Safety is paramount in the modern world, and Water and Wastewater Treatment Plants should be no exception. State and County governments are limited in their budgets, and getting maximum use of allotted dollars is critical to ensure the safe treatment of water and ensure that effluent discharges are maintained at safe levels.

Operations staff must get involved to ensure that Consulting Engineers are directed to consider maintenance as an extremely important component of Plant design. The technologies are available to ensure that maintenance can be done quickly, safely, and cost effectively.

Talk to us; we can offer you the correct solution for your lifting problems.