Pictured is a section of pumping equipment that utilizes vertical turbine pumps rated for 1,134 GPM at 51.5' TDH.

Metropolitan Pumps Life into Alaska Fish Hatchery

Continued from front

Company to make recommendations for several booster systems for the Anchorage Sport Fish Hatchery. HDR is a global architecture, engineering and consulting firm that has recommended Metropolitan's equipment in the past. Metropolitan was tasked with offering solutions for water pressure booster systems that would be an integral part of providing and regulating water and filtration systems within the hatchery. In order to avoid harming the fish, the systems would be designed with components that did not contain yellow metals. This improved aquaculture technology reduces the volume of freshwater required to raise the same quantity of fish and the energy required to heat water to an optimum fish-rearing temperature. It also reduces the amount of effluent water discharged from the hatchery.

HDR's Phoenix office was in charge of designing the process water systems. These systems take tempered well water and introduce it to the hatchery's filtration system and hold it in large reservoirs. Two of the Metropolitan packaged booster systems then take the water out of these reservoirs and "boost" it into the hatchery. The two systems handle the hot (65 -75° F) and cold (55 - 65° F) water.

The Hot Water Process System (HWPS) was designed as a triplex booster system that takes incoming well water and discharges it from a basin at the rate of up to 1,930 gallons per minute @ 50.3 feet of total dynamic head (TDH). Each pump is rated for 965 GPM at 50.3' TDH, 20 hp, 460 volt with the third pump being a back-up.

The Cold Water Process System (CWPS) was also designed as a triplex system rated up to 2,268 GPM at 51.6' TDH. Each pump on the CWPS is rated for 1,134 GPM at 51.5' TDH, 25 hp, 460 volt. With the layout of the basin and control room already in place, the design selected was to use vertical turbine pumps with variable speed controls on this particular system.

Both systems required FDA approved fusion bonded epoxy coated fabricated steel piping (in compliance with NSF61) consisting of 10-inch branch and 16-inch headers according to Metropolitan Project Manager Bob Bukowski who coordinated logistics for the project. Bukowski said, given the size of the pumps, pipe work and valves, Metropolitan had to lay the systems out in a split-skid configuration. This method has each system built in two parts making up one complete system skid, which is easily assembled on site and makes handling during installation easier and shipment more practical.

HDR's Portland office was in charge of the Influent Degassed Water System design. The degasser system functions just as the name implies, it removes the gas from the water. The water is then tempered and stored in above ground storage tanks. The layout that HDR already had in place had these holding tanks positioned above the location of the booster systems. Like the

Water... We Heat,

"Water…we heat, treat and move it!," is a slogan that now defines Metropolitan Industries moving forward into the future.

During the last 50 years, Metropolitan Industries built its solid reputation mainly on pumps, pumping systems and control equipment, which all serve to move water. But over time, as Metropolitan continuously expanded into new growth markets, they have added the heating and treating of water as well.

As you will see in this article, Metropolitan Industries has evolved into more than just a pump company but into a company that processes water in every way possible.

We Heat It

One of the newest and fastest growing divisions at Metropolitan is their HVAC department. They specialize in packaging components into complete systems for boiler feed, hot water systems, chilled water systems, condensing water systems, heat transfer, domestic hot water, hydronic heating systems, pre-fabricated boiler housed systems and solar domestic hot water heating systems.

HVAC systems are by far the largest consumers of energy due to the sheer nature of how they are specified and designed. Metropolitan Industries has taken the energy-savings approach used in all their pumping systems and applied the same philosophy to boiler systems. Currently, Metropolitan Industries incorporates a solution that reduces boiler fuel consumption by 20-50% using a patented procedure that addresses seasonal efficiency, which increases cycle efficiency and therefore reducing fuel consumption dramatically. This division, headed by Matt Brickey, is on track to be one of the largest producing divisions at the company.

A recent large project involved the installation of our patented "summer boiler" solution, a new heat exchanger and blending valve, which allowed the building owner to realize a 20-50% reduction in fuel consumption on any given day depending on load conditions. The entire package combines indirect water heating, condensing water heating and the blending valve function all into one complete system. Metropolitan Industries is the only company currently providing this technology. For more information, contact Matt Brickey at 815-886-9200 ext. 266 for a complete analysis of your system.

We Treat It

As America's communities continue to grow and expand, so does the demand on our potable water supply. Global freshwater demand has tripled during the second half of the twentieth century as the world population more than doubled and technological advances allowed users access to groundwater from greater depths than ever before.

For over 30 years, Metropolitan Industries has specialized in supplying control and pumping equipment for wastewater treatment plants, water

Treat and Move It

treatment for iron and radium removal and green conservation systems for water harvesting and gray water recycling.

A recent noteworthy project involved a large rainwater harvesting project for the purpose of pressurizing the harvested water for flushing plumbing fixtures, as well as an emergency source of water for the facility's critical cooling tower make-up demand.

During periods of rain, the rainwater falls on the 'Harvest-Zone'. In the case of Project Dolphin, the harvest-zone is the rooftop of the facility. The rainwater is collected via the roof-drain system, and eventually flows into four underground reservoirs. Once water is treated using several treatment mediums, the water is pumped to the intended locations reducing the large commercial building's demand on the local water supply.

We Move It

Metropolitan Industries delivers pumping solutions inherent to municipal, commercial and residential water and wastewater pumping systems.

Municipal installations deal with raw water supply and treatment, water distribution and wastewater collection. Sales engineers Ken Turnquist, Keith Girup and Dan Howorth work closely with City Managers, Engineers and Public Works officials offering them single source pump and control solutions.

Write In 101

Such systems include housed booster systems, water treatment systems, Supervisory, Control & Data Acquisition systems, valve and control stations, pressure reducing valve vaults and large pump stations. Wastewater equipment includes prefabricated lift stations, wastewater treatment plants, pumping control stations, seal water systems, non-potable water systems and standby power solutions.

Metropolitan's Commercial Sales department serves applications related to high-rise buildings, stadiums, museums, hospitals and universities. Headed by Kent Swanson, this department is known for pumping water in some of the most famous landmarks in Chicago such as Soldier Field, The United Center, The John Hancock Building and Trump Tower.

The backbone of this department are the skid-mounted, variable speed, prefabricated water booster systems. These systems pressurize water in the building so the tenant living on the top floor has just as much pressure as the tenant on the bottom floor. Other products sold by this department include self-priming sump and sewage ejector pumps, control packages and other related accessories.

Conclusion

We always will be "The Pumping World's One Stop Shop!" when it comes to moving water but as you can see we have developed into something much more over the years.

Write In 101

Metropolitan Put to "Test"

Write In 102

Write In 103

Metropolitan Industries' test center played a critical role recently in helping Wilo Pump Company save time and money by assisting them in the testing of three large horsepower pumps at our facility in Romeoville.

WILO, one of the leading manufacturers of pumps for heating, water supply, sewage disposal and cooling technology had a situation where the customer did not want field testing but rather opted for witness testing together with the engineer and representatives from WILO after the units had already shipped to the U.S. from the factory.

Unfortunately, WILO's U.S. facility did not allow for testing due to the specific requirements of the three dry pit submersible pumps. In order to complete the customer's request for witness testing the first option would be to ship the equipment back to Germany, costing time and money.

Chris Perkins, WILO's technical sales manager, contacted Metropolitan based on, "the relationship of working together," in the past and asked if Metropolitan could assist.

Metropolitan Sales Manager Bob Wedell (left) and and a representative from WILO Pump examine one of the large dry-pit submersible pumps during testing at Metropolitan's test lab.

Metropolitan obliged and testing included performing both a flow test and a hydrostatic test on each of the three pumps in one day while the customer's consulting engineer was present to witness.

"Paul Larson and the shop personnel involved did a great job," said Perkins. "It allowed us to complete our job quickly," he said. Paul Larson, General Manager at Metropolitan is also a registered Professional Engineer.

"Paul Larson and the shop personnel involved did a great job. It allowed us to complete our job quickly."

Metropolitan Industries has a state-of-the-art testing facility capable of testing systems up to 10,000 gallons per minute at 700 PSI with a 800 amp current capacity. Testing a system ensures that drive settings are updated, valves, pumps and mechanical components are verified and system performance matches the specification both in flow and control.

Before a system is delivered, hydrostatic, performance, and system testing are typicall performed on Metropolitan systems to ensure system integration meets customer specifications. Pumps or systems can be certified to Hydraulic Institute Standards by a Professional Engineer.

Many different types of pumps, controls, and systems have been tested including self-priming pumps, centrifugal pumps, submersible pumps, multi-stage pumps, pressure reducing valves, control system operation with mechanical components and instrumentation and more.

For more information regarding system testing, contact Paul Larson at 815-886-9200, ext 271.

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Testing included performing both a flow test and a hydrostatic test on each of the three pumps in one day while the consulting engineer was present.

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