

Hospital Pressure Cure

Hydronics Modules Corporation (HMC), a division of N.H. Yates & Co., Inc. in Cockeysville, Maryland, is a booster skid pump design and manufacturing firm known for their ability to engineer pump systems tailored to unique application requirements. They were able to utilize Yaskawa iQpump®1000 drives to solve a water pressure problem for a Detroit area hospital.



**IT'S PERSONAL
YASKAWA**

YASKAWA'S IQPUMP1000
IS YOUR TOTAL
PUMPING SOLUTION
FOR WHATEVER YOUR
SYSTEM DEMANDS



- INTEGRATED PUMP FUNCTIONALITY MAKES SYSTEM INTEGRATION EASY
- DELIVERS CONSTANT PRESSURE WITH VARIABLE FLOW
- REDUCES WEAR ON PUMPS AND MOTORS
- KEEP PUMPS WORKING AT PEAK EFFICIENCY
- MINIMIZES WATER HAMMER
- IMPROVES ENERGY EFFICIENCY

Challenge

Beaumont Hospital in Grosse Pointe, MI needed to minimize maintenance and improve pressure regulation within their facility. The existing fixed speed booster pump system used adjustable, combination pressure reducing (PRV) and check valves for pressure and flow control and pressure switches to stage and destage pumps. The PRV valves became costly to maintain, requiring frequent adjustment. Eventually, Beaumont disabled two of the fixed speed pumps and only ran one pump, eliminating redundancy and pressure regulation.

The primary goals of the project were to provide 80 (± 5) PSI pressure regulation with pump redundancy and to minimize pump maintenance.

Solution

A new, built-to-order triplex booster pump was assembled by HMC with Yaskawa's iQpump1000 variable frequency drives, which accomplished the primary goals, saved energy, and included additional pump protection features.

The triplex pump system was designed with three 7½ HP pumps, iQpump1000 drives, and pressure transducers. Only two pumps were required to boost from 40 to 80 PSI during peak flow at 400 GPM. The iQpump1000 drives are networked together, eliminating the need for external PLC or switchgear for peak demand pump staging and destaging. The pump system was able to provide ± 5 PSI pressure regulation during staging and destaging.

iQpump1000 networked multiplexing provides pump system redundancy and minimizes maintenance for booster pumps. If any pump, transducer, or drive failure occurs, the system is self-healing and stages on the idle drive. Moreover, the drives are programmed to alternate lead pumps on a daily basis. Alternation balances the wear on each pump and extends pump life.

With the addition of an inlet pressure transducer, the iQpump system also provides low city pressure protection, shutting down the pumps when suction pressure drops below 5 PSI. The drives were also set to signal low pressure alarms and shut down the pumps on high pressure using the system transducer feedback and drive programming.

Results

Beaumont Hospital successfully installed their HMC triplex booster pump and regained their pressure regulation and pump redundancy. They now have a low maintenance booster pump with the energy savings benefits of variable frequency drives.

