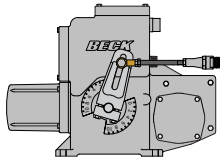


### Valve Upgrades Reduce the Number of Corrective Work Orders by 99%



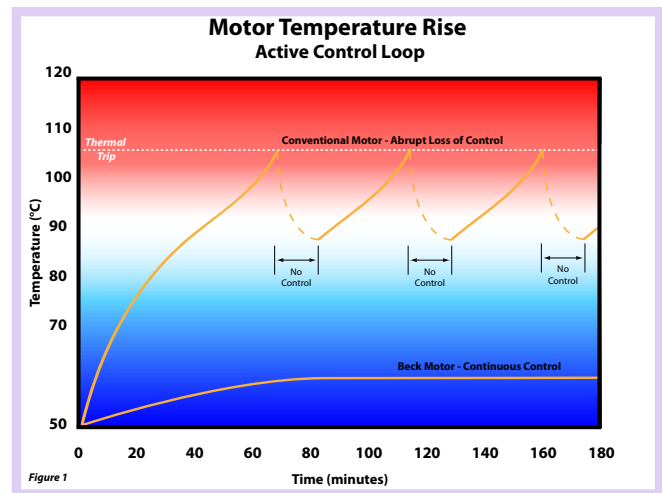
*Aqua – Pickering Creek WTP, PA U.S.A  
Dave Marozzi, Plant Superintendent.*

Aqua Pennsylvania has been supplying potable water to residents since 1892. Its largest facility, the Pickering water treatment plant, was using conventional electric actuators on valves across the facility, including the modulating Filter Effluent applications. A history of actuator problems prompted plant personnel to consider replacements.

Pickering's Filter Effluent valves consisted of AWWA butterfly valves operated by conventional electric actuators. The actuators used a multi-turn, squirrel cage motor to operate an external gear-head to operate the quarter turn valves. These are commonly used because they are economical, and widely supplied as part of systems. Unfortunately, there are inherent duty-cycle limitations and potential reliability issues in modulating service like Filter Effluent valves.

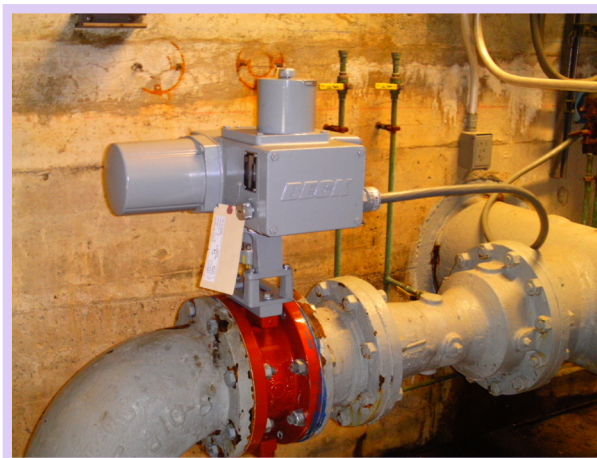
Due to inrush current and a high temperature rise, squirrel cage motors have a propensity to overheat on active control loops, and eventually burn out (Figure 1). The Pickering plant maintains a log of corrective work orders that take place during a year, and filter valve maintenance accounted for a large portion of them. Plant-wide, they were replacing as many as 20 – 30 actuator motors per year. In an effort to reduce maintenance and repair costs, the plant began evaluating new actuators. They learned that in contrast to other brands that use the same technology as their existing actuators, Beck actuators provide a unique solution. Rather than

squirrel-cage motors, and inefficient worm gear trains, Beck actuators utilize a NO-burnout motor, and all spur gear train. The design results in exceptional reliability and no periodic maintenance is required.



**Figure 1**  
*Conventional Motor vs. Beck Motor*

After flawless performance on an Effluent valve trial application (Figure 2), the facility began retrofitting Beck's across the plant. Over 35 Beck actuators were installed in the subsequent 18 months. Aqua's investment in Beck has proven itself at Pickering Creek. After two years of service in the water treatment plant, the plant manager reported that the number of corrective work orders for the Beck actuated valves has been reduced by 99%.



**Figure 2**  
*Beck Electric Actuator*



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