



SOUTH WEST WATER EMPLOYS 250kW FAIRFORD SOFT STARTERS TO HELP SAFEGUARD SUPPLY.



South West Water is employing 200kW and 250kW QFE soft starters from Fairford to safeguard pumping operations at its Pynes Treatment Works on the outskirts of Exeter. Installed on large pump motors, the Fairford units are protecting pumps and pipe work against the damaging effects of water hammer, a condition that occurs if flow is stopped suddenly for any reason.

South West Water (SWW) provides water and sewerage services to customers in Devon, Cornwall and parts of Dorset and Somerset. Each day, the company supplies an average of 505 mega litres of water, rising to 600 mega litres during periods of exceptionally warm weather.

With this level of demand, safeguarding of supply is essential. One way in which SWW has met this challenge is by protecting the operation of its pipe work distribution and pumping systems with QFE soft starters from Fairford. At SWW's Pynes Treatment works, 200kW and 250kW Fairford QFE units are being employed on the motors of pumps that drive treated water to storage reservoirs. The average diameter of the pipes used in this operation is 18" and the distances pumped can be up to 15 miles. When water in this volume is pumped over such long distances considerable care has to be taken with starting - and particularly stopping- cycles, due to the possible effects of water hammer.

Water hammer is the result of a shock wave of very high water pressure that occurs when flow is halted suddenly. Water does not compress, and under sudden stoppage conditions it bounces back and forth trying to dissipate its high- pressure shock wave within the closed pipe work system. If this problem is not addressed the result can be extremely costly: broken shut-off and distribution valves, or, worse still, fractured water mains.

The Fairford QFE soft starters installed at Pynes Treatment Works provide an effective answer to water hammer via an inbuilt ramp down feature, which is designed to handle heavy dynamic loads.

At Pynes Treatment Works, the usual ramp down time is between 10 and 15 seconds, although in some cases it can be as much as a minute. As this process is progressive, rather than sudden, pressure surges are prevented, removing the potential threat to both pumping and pipe work systems.

"I think that this application ably demonstrates why soft starters remain the first choice for controlling fixed speed ac motors in the water industry - despite the falling costs of variable speed drives," said David Taper, Technical Sales Manager for Fairford Electronics. "By employing our QFE soft starters, SWW is able to safeguard its operations effectively and reliably, and, *at the same time*, benefit from an equipment cost which is less than 20% of that for a variable speed drive of equivalent kilowatt rating."