

Application Report - No.24



Series Pumping



The levels in the wet well were controlled by an Ultrasonic Level Controller to give efficient and reliable starting and stopping of the pumps. This was augmented by a GSM Telemetry System that sent messages to numerous mobile phones in the event of a breakdown or emergency.

Two 500kva generators were used with an AMF Panel, to ensure immediate start up of the standby if the duty Generator failed.

The system was installed over a 3 day period by the Selwood Southern Installation Team and ran continuously for 6 weeks to give a trouble free solution.

Thames Water had a problematic sewage station to refurbish, with a duty of 350 lts/sec at 18m through an existing rising main 3200m long. The refurbishment for Thames Water was scheduled to last for 6 weeks, and in the time, the entire scheme would need a reliable overpumping solution.

Once the pipe friction had been accounted for, it was quickly realised that the total head would be 38m and that it would be impossible to pump this duty by just placing Electro Submersible Pumps in the wet well. This would have required 3 very large pumps, and the existing wet well would not have had room for them.

Selwood designed a scheme with 3 x NS3202MT submersible sewage pumps in the wet well, pumping up to 3 x NS3301HT submersible sewage pumps on dry well stands on the surface. This is known as series pumping, and the combined discharge pressures of two pumps allowed Selwood to meet the required duty.

A wet well pump was paired with a dry well pump to give 3 pairs - Duty Pair, Assist Pair and Standby Pair. Each pair of pumps had 2 55kw Soft Start Control panels interlocked to give series starting with the dry well panels on a delay timer so that two motors did not start simultaneously.



	NS 3202MT	NS 3301HT
Power Requirement	30 kW	54 kW
Pump Speed	4 pole	4 pole
Running Amps	54 amps	100 amps
Flow (max)	200 l/sec	175 l/sec
Delivery Head (max)	25m	60m
Height	1415mm	1820mm
Width	1150mm	1250mm
Weight	605kg	1003kg



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