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Pump reliability improved with variable speed drive and motor upgrade

ABB variable speed drive and motor solve recurring pump failure, improving reliability and cutting maintenance costs.

Scottish Water has cut the risk of pump set failure at its Mannofield water treatment works in Aberdeen with the installation of an ABB motor and low harmonic variable-speed drive (VSD).

The 560 kW matched AC motor and drive replace a soft start and 30-year-old motor on a pump set at the treatment works, solving recurring failures caused by overheating bearings and thus reducing maintenance costs.

The pump set is one of three at the Mannofield site, which are used in a rotating duty, assist and standby configuration. The pump sets are critical to the treatment works. If they fail, water supply to Aberdeen would be cut off.

The original panel for the pump set had an ABB variable-speed drive and another manufacturer's motor. The motor was tripping out on overload, over-current and under-current. Tests showed that the problems with the motor were caused by its age. It was 30 years old and the bearings were heating up and failing.

To solve these problems, Gordon Christie, managing director of Aird Walker & Ralston, Scottish Water's electrical consultants, approached ABB authorised value provider, Quantum Controls, and requested an upgrade to an ABB variable-speed drive and matched motor.

Quantum supplied a low harmonic drive to avoid introducing harmonics into the electrical network system as the preferred alternative to fitting separate harmonic filters.

The project has been a great success for the treatment works, which is now enjoying problem-free operation. Since the new motor and drive were installed the pump has worked smoothly with no interruptions.

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Caption: Scottish Water has cut the risk of pump set failure at its Mannofield water treatment works with the installation of an ABB motor and low harmonic variable speed drive.

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