

Case Study

Weight Control In Water Treatment Plant

Solution for City Municipality reduces costs by automating water treatment process

Challenge

- Eliminate continuous running of compressors used in processing. Use a single weigh hopper to save installation costs
- Reduce costs and wear and tear on processing equipment

Solution

Three systems including:

- Hardy ADVANTAGE® compression load points with C2® Electronic Calibration
- Hardy IT® Junction Box
- HI 2151/30WC weight controller

Results

- Automatic shutdown when material reaches threshold
- Drastically reduced cost to run system; lowered wear and tear of the processing equipment
- Reduced need for maintenance



A city municipality was using a system for processing the effluent that flows into the water treatment facility, and determined the process to be costly and inefficient. The system involved channeling material, containing a variety of solids, on a continuous basis into grit separators, shredder pumps, and up approximately 15 vertical feet through a six-inch diameter pipe into the digesters. The materials were moved with compressed air using 100HP compressors running 24/7.

THE CHALLENGE:

The cost to run the system in terms of electrical usage, and wear and tear to the equipment was unacceptably high. The City was looking for a solution that would not have to be run continuously, thus reducing costs and wear and tear on the equipment.

THE SOLUTION:

To eliminate the need to run the compressors 24/7 to move the effluent to the digesters, Hardy recommended the installation of catch tanks, sitting on three ADVANTAGE® load cells and monitored by an HI 2151/30WC weight controller. The catch tanks collect the effluent downstream of the grit separator, and when the HI 2151/30WC determines that the tanks have reached a particular level as measured by weight, the effluent is “batched” into the digester via liquid pumps.

Due to the dirty and hazardous nature of the material in the tanks, weight measurement, which is non-intrusive, is used to determine when the tanks are near capacity and the processing system should be automatically switched on. It is also imperative that the pumps not be run dry or severe damage will occur, so a low-level cutoff is used. Additionally, weight is used to determine when the tanks are near capacity or near empty, so the processing system can be automatically switched on or off as needed.

THE RESULTS:

With installation of Hardy’s recommended solution, the water treatment processing system runs at peak efficiency and shuts down during intervals when the material level in the catch tanks is below threshold. Due to the Hardy recommended process, the City’s water department has been able to drastically reduce expenses associated with electrical consumption, and wear and tear to the processing equipment. Maintenance has been reduced with C2® electronic calibration and INTEGRATED TECHNICIAN® (IT) for remote system diagnostics.

EQUIPMENT USED:

Hardy ADVANTAGE load cells with C2 electronic calibration, C2 cable, HI 2151IT Junction Box with IT, and HI 2151/30WC weight controller.

EXAMPLE CUSTOMERS and APPLICABLE INDUSTRIES:

Any water treatment facility or processing system where efficiency needs improvement.

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