Case Study - Audit

Pump Stopping due to pulling more amps than the motor rated amps.

A drinks manufacturer had a pump on one of their mixing lines and it was reported that the pump was stopping due to the pump pulling more amps than the motor was rated for, this event only occurred after the system had undergone a Cleaning In Place routine (CIP). Maintenance staff at the clients site had two ideas as to which piece of equipment was at fault it was either a faulty pump or a faulty valve it was easier to blame the pump and not the valve as the pump as it had been removed for overhaul since the pump was first installed a number of years ago . ERIKS were asked to attend site by one of the client's maintenance engineers to establish whether it was the pump or the valve that needed attention.

It was decided to fit an ultrasonic non-intrusive flowmeter to the discharge pipe of the pump in question and monitor the flows through a CIP cycle and then start-up production while the flow testing was being carried out. An investigation was carried out into how the pump interacted with the valves and what other equipment was used to monitor the process. The pump in question was fed by another pump and the system was set to maintain a constant pressure and was controlled with two pressure sensors.

The pump stopping on motor overload was caused when the pressure being developed by the pump (a) supplying increased and the pressure developed by the pump (b) was stopping, decreased indicating that a control valve was slow in re-acting to a change in demand. The slow acting valve was identified and replaced by the client. Removing the pump for overhaul would not have resolved the issue.

Below is a picture of the control screen showing the drop-in pressure on PPM307 and the increase in pressure on PPN301 this was occurred when the pump tripped