



CASE STUDY

INDUSTRY: TIRE MANUFACTURING



CUSTOMER: Global Tire Manufacturer

LOCATION: Undisclosed

BACKGROUND: A global tire manufacturer was experiencing issues achieving and maintaining consistent production temperatures within their tire presses creating inconsistency in product quality. During operation, the steam system periodically had a few failed steam traps which caused water hammer due to condensate back up within the steam lines triggering temperature alarms in the tire presses. The failed steam traps and associated steam line issues caused production downtime, excessive scrap, and an increased chance of a safety event during production due to water hammer. The facility's steam traps are difficult to access and are unable to be checked by technicians to identify/rectify in a safe or timely manner when production is running.

SCOPE OF WORK: The customer had no option to run wired instrumentation to the tire presses due to the high temperatures of the equipment and space requirements in and around the tire press. The customer wanted to give the ability to an operator to safely watch the operation of the steam traps while the system was running on the HMI for each press, if there was an issue they could bypass the steam traps during press operation, allowing the tire press to get up to temperature and create good product.

The customer sought a solution to safely monitor the performance of the ALL steam traps in “real time” to prevent production interruptions.

SOLUTION: Installing a couple of gateways and several non-intrusive Armstrong ST6700 ISA100 Steam Trap Monitoring units, the customer was able to span the entire production area, monitoring all critical steam traps. Integrating real-time alarms into local HMIs would allow operators to ensure the steam system was operating properly in an effort to help eliminate the risk of scrap and lost production time. The problematic trap identified in the steam system was flagged to be investigated in an upcoming maintenance shift.

The ISA100 Standard sensor routing capability was enabled and a fully redundant wireless network architecture of powered field routers was deployed. This structure allows for wired-like performance through reduced latencies while delivering improved battery life and performance to the steam trap monitoring devices deployed.

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BENEFITS: The deployment of ISA100 wireless infrastructure allowed the customer to provide process information in a short time frame and in a very cost-effective manner.

As a result of improvements in the management of the wider steam system, the customer reduced routine MRO costs by around 5% per annum, previously caused by condensate remaining in the steam system at various times during operation and was able to reduce scrap levels by an extra 20%.

Utilizing infrastructure from WCI “standards driven/ISA100 open architecture” with multiple vendors for specialist devices, the customer can easily expand and monitor other critical process information without running wires to the same area resulting in more asset monitoring. Such enhancements around pressure, temperature, flow, and vibration monitoring on various parts of the equipment are being considered.

