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Case History

CADDIS SYSTEMS IPPE BOOTH B35008 MACHINE MONITORING TRIGGERS IMMEDIATE INTERVENTION TO AVOID REPAIR AND DOWNTIME

No Need For A Meltdown

Or a 'freeze up', as the case would have been for LeClaire Manufacturing – a single-source sand and permanent mold casting and machining company – when a critical furnace failed within its aluminum die casting operations. These workhorse furnaces run almost continuously in foundry operations providing performance, energy savings and reliability . . . until they don't. Sometimes those reliable pieces of equipment develop mechanical or electrical problems that go unnoticed, but a failure alarm did not.

"At that moment a text message was sent by the CADDIS System to our foreman and action was taken immediately that saved our bacon", said Ralph Zimmerman, LeClaire Manufacturing Co-President. "We were able to intervene in literally a matter of seconds after the unit overheated and shutoff, continued Zimmerman.

Adding Up The Damage

If not addressed, what would have happened next is nothing short of a disaster. After a furnace failure, the unit shuts off and the front of furnace bath freezes, causing a cascading effect of failures. Tallying this up is daunting. It starts a lot of specialized labor to unfreeze the front of the furnace, estimated at \$8,000 - \$10,000. Next is to save the metal pump, which itself is a \$20,000 unit. Then to inspect the lining of the furnace to determine whether it had been damaged, a process that is very difficult to accomplish, and can be hard to fully know. Even fuel costs – for example to melt the metal – are part of the equation. But perhaps the biggest cost is downtime and resulting missed customer orders.

There's An Upside

It didn't happen. All these subsequent catastrophic failures were avoided thanks to the continuous and reliable CADDIS System. There was also no delay with the subsequent processes that LeClaire does for its customers. After the parts have been cast, they are heat treated, machined to customer specification, and delivered. LeClaire has Caddis installed on numerous presses where they track uptime, downtime, maintenance tasks as well as shifts and other key metrics.

So, What Is CADDIS?

CADDIS is a two-pronged Industry 4.0 solution that uses a shop floor device and an intuitive software platform. The device is housed in a durable and sealed aluminum casting and is designed to work without interruption in even the harshest environments. It connects to any type or vintage of machine relaying user specified data to a central dashboard. That dashboard is the brain of the operation, providing real-time monitoring for continuous observation, improvement, and intervention. The results are increases in uptime, improved Overall Equipment Effectiveness (OEE), predictive maintenance intervals, and most notably in this case avoiding downtime, repair, scrap and missed customer deliveries.

“It’s pretty impressive when you stop and think about it. We were in the middle of our shift thinking all was running perfectly, and then we got a text from the (CADDIS) system, very cool”, said Zimmerman. “We were really able to contain the failure right away and avoid what would have very rapidly become a next-level costly issue”, he continued.



Caption: LeClaire uses state-of-the-art furnaces for near constant production within its aluminum die casting production facility.



Caption: Operating environments of the CADDIS Machine Monitoring System include all manner of heat and chemistry encountered in today’s manufacturing.

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