

# Temperature Technologies Provide New Insights to Improve Safety, Productivity at American Crystal Sugar

## RESULTS

- Improved plant safety
- Greater visibility in hazardous areas
- 2.5% reduction in operations time for higher operator productivity
- Improved pond management
- Ready for new upcoming EPA reporting requirements



## APPLICATION

Monitor bearing temperature and motor current in Weibull Bins (sugar silos) and conveyor system to prevent ignition point; remote monitoring of settling ponds.

## CUSTOMER

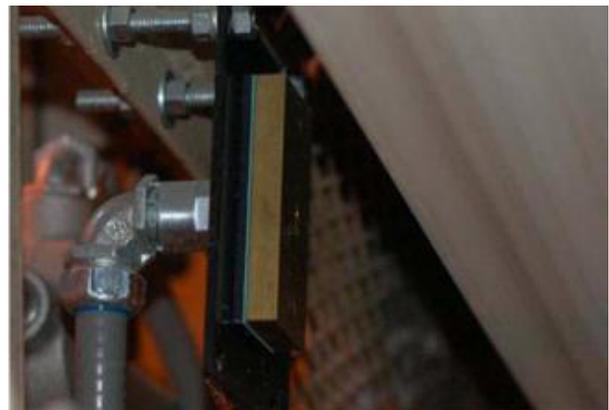
American Crystal Sugar (ACS), East Grand Forks, MN

## CHALLENGE

Sugar dust in safety equipment caused a small explosion at a sugar refinery near Savannah, GA. Just eleven days earlier, a similar but bigger blast killed nine workers at a Port Wentworth, GA plant according to a federal investigator. Alerted to the potential danger of sugar dust, American Crystal Sugar (ACS) proactively searched for ways to prevent a similar accident in its plants. The company looked to measure abnormal situations where field equipment could become potential ignition points in hazardous areas, including hazardous dust in the Class II Div 1 & 2 Group G.

“We first identified equipment and devices that were potential ignition points,” said Gary Phelps, Electronic Control Technician for ACS. “We were looking for devices that were not ignition sources under normal conditions, but had the potential to become ignition sources under abnormal situations.” Bearings and motors in the sugar silos where sugar dust was in the greatest concentration were the first to be identified, as were misaligned conveyors that delivered the sugar from the silos to the sugar handling area.

“We identified the bearings on the sugar conveyor system as well as the misaligned conveyors, as both could heat up and potentially introduce an ignition point,” said Jay Sorum, also an Electronic Control Technician



*Rub blocks provide an indication when the conveyor is even slightly out of alignment. A conveyor out of alignment can be a potential ignition source.*



*Sugar silos at ACS in EGF have a rotating bridge that made wired instrumentation impossible to implement.*

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