Focusing on Power Quality Can Reduce Downtime 20 Percent

Industry experts estimate the Total Downtime Cost (TDC) of failure in the food and beverage industry to be quite high - varying from $100K per hour to $1M per hour of production downtime. And, food and beverage manufacturers often report an average of 20 costly disruptions per year. And industry experts estimate 30-70 percent of disruptions are caused by poor power quality. Many experts estimate downtime can be reduced by 20 percent for those who choose to focus on power quality. (Source: Rockwell Automation).

In 2017, the size of the US food and beverage industry exceeded $16 Billion, with an expected growth rate through 2022 of 12.5 percent. (Source: Statista). Yet most companies do not measure and monitor power quality in real time resulting to create such positive impact - wasting opportunity.

Disruptions in food and beverage are often caused by complex problems to solve with long recovery times, product scrap, and associated possible safety hazards. Key applications and processes used in the food and beverage industry such as bakery ovens, dry extrusion, aseptic packaging, ovens, boiler controls, refrigeration controls, ammonia compressors, and air compressors to name a few all require a reliable, consistent and low-cost energy source to maintain operational stability and maintain product quality. Poor power quality experienced in any of these areas can have severe operational and financial impact.

Large bakery facilities present one example of a type of industry firm impacted by poor power quality. Voltage sags can have a negative impact in the baking process where foods are cooked under heat. If the oven controls or material handling are jeopardized, products can be over or under-cooked leading to reduced quality, scrap and added cost. Fire and safety hazards are also very real in that products and processes might be flammable. Voltage sags impacting a dough machine might create a 20 minute disruption. A main conveyor system stoppage in the same bakery might take 1-2 hours to auto restart or 2-4 hours to manually restart ovens, creating also a fire hazard depending on the type of product heated. Voltage sags impacting the back end of the same bakery process might take up to two hours of production loss.

A single production failure experienced by a large baker at the main conveyor taking 2-4 hours to remedy could cost $200K to $4MM.

Food Extruders (ex: cereal plants, pet food plants, extruded fruit products, and snack food manufacturers) are impacted greatly by power quality. In fact, some processes impacted by voltage sags experience 2-10 hours of downtime, costing an estimated $200K - $10MM per single occurrence. Reducing the probability of that same occurrence by 20 percent has a substantial impact to extruders, particularly when solutions are implemented across the entire enterprise.

Manufacturing is faced with reductions in technical staff and a shortage of people able to solve complex problems - spanning machines, processes, and experts needed to address, understand and solve complex problems.

Cloud-based, real-time hosted services managed by deeply tenured and technical teams provide a low cost, quickly scalable and easily deployed solution - with tremendous impact across the enterprise and seem to be one of the best use cases as we continue to deliver the IIoT.

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info@DenisonConsultingGroup.com

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by: Dianne Denison | CEO & Founder
DenisonConsultingGroup.com/Dianne

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