Audit Increases Safety at Candy Facility

When Cooper Wiring Devices' Arrow Hart team was tasked with conducting a wiring devices audit for Crown Candy Corporation — an 85-year-old candy manufacturer in Macon, GA — identifying opportunities for improvement in the areas of employee and equipment safety, compliance with codes and standards, reduced maintenance and downtime and overall product performance and longevity was key.

Problem Solvers

The primary reason for a facility to undergo a complete wiring devices audit is to provide a safe and productive work environment. Electrically unsafe conditions can contribute to workplace injuries, manufacturing downtime and loss of productivity. Faulty electrical wiring and devices are consistently among the top OSHA cited infractions and are a leading cause of workplace hazards. A proactive and ongoing review of the quality and service of a facility's wiring devices can enable cost-effective upgrades that will improvesafety and productivity while reducing downtime. For Crown Candy Corporation, these were all competitive necessities that prompted the company to seek a professional audit of their electrical infrastructure.

Comprehensive Recommendations

A detailed auditing process uncovered numerous opportunities for improvement. Recommendations included replacing standard devices like receptacles, plugs,

connectors, switches and motor controls with those that are designed for use in more complex environments. In food and beverage manufacturing facilities, it is common for the electrical infrastructure to be exposed to water, hose down, extreme temperatures, cleaning agents and physical abuse. Standard industrial devices repeatedly used in these harsh manufacturing environments will corrode, break down and present potential issues with safety and electrical integrity. For these unique environments, it is recommended to use devices that are watertight (IP66 or greater) to resist ingress of water, dust and other contaminants. Devices should also be constructed from durable materials specifically designed for use in harsh, corrosive environments. Protecting the devices from the hazardous environments to which they are exposed with covers, flip-lids and strain relief solutions is also vital. Replacing standard products with those designed specifically for harsh environments will maximize safety, productivity and longevity.

Understanding the Environment

Multiple opportunities to upgrade devices within the Crown Candy facility were also discovered. In those areas that are regularly exposed to hose down or spray with cleaning agents, watertight receptacles, plugs and connectors were recommended. These will provide the water and dust protection required for safe and dependable use even when exposed to repeated hose downs and cleanings. For areas exposed to incidental water spray, humidity and airborne contaminants, corrosion resistant receptacles, plugs and connectors were suggested. These devices are constructed from special materials made for long-term use in corrosive environments.

In addition, a variety of flip covers to protect receptacles and switches were installed throughout the facility. These common points of electrical control and distribution can easily fall victim to corrosion and physical failure, presenting a common safety hazard, and often requiring repeated replacement in a food and beverage facility. By simply using the appropriate device and protecting it with a cover while not in use, you drastically extend the life of the device and the safety of employees and equipment.

Another common point of failure with wiring devices is due to strain on cable and conductors. It is common for plugs and connectors used in industrial applications to experience cable jacket fray or pull away from an installed device, exposing the user to live conductors. This hazard can easily be avoided by properly installing the device to the cable and using a wire mesh grip for added strain relief.

Upgrading multiple motor control switches was also suggested. In industrial manufacturing facilities, an auxiliary means of motor disconnect is required within line-sight of the motor it controls. In food and beverage facilities, these motor disconnects are typically in close proximity to the food production line, which is often exposed to liquids, food particles, water and cleaning agents. In the case of Crown Candy, these motor controls were regularly exposed to sugars and syrups, which took their toll on device integrity over time. For these applications, an industrial motor control switch designed specifically for food and beverage applications was recommended. The product’s stainless steel, NEMA 4X enclosure and rugged switch design are ideal for motor control applications and will provide

quality, maintenance-free performance for years to come.

One of the more challenging evaluations involved the facility's chemical waste building, which houses spent chemicals used in the manufacturing and cleaning processes. The pumps housed in this building required a local means of connectivity, but the receptacles and plugs used in the past were prone to failure on a monthly basis. For this application, a rugged portable outlet box with corrosion resistant receptacles and flip-lid cover plates was recommended. This will ensure long-lasting durability in this extremely corrosive environment.

Long-Term Benefits

Following the initial wiring devices audit, a follow-up visit with Crown Candy further detailed the exact products and tools required to best perform the replacement of the devices. All applications were documented, and a detailed list of materials was created for the recommended upgrades. Crown Candy is currently in the process of integrating all recommended changes and products into their facility, taking advantage of equipment changeover and downtime of specific lines. Upon full integration, Crown Candy Corporation will enjoy a variety of long-term benefits, including increased efficiency, reduced downtime, code compliance and workplace safety.

For more information, please visit www.cooperwiringdevices.com *[1].*

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