2023 Case Study

Case Study:
Cook Induction
Troy Doolittle,
President

Website:
www.cookinduction.com

Industry:
Thermal Processing,
Heat Treatment

About Cook Induction

Cook Induction, based in Maywood, Los Angeles CA, has been serving its customers since 1945. The company's commitment to enhancing customer experience and capabilities has helped it evolve into a NADCAP approved facility. Cook Induction provides a wide range of services, including heat treating, brazing, and soldering. Their heat treating services include induction case hardening, localized hardening, localized annealing/stress relieving, heat treatment of BeCu, localized annealing of BeCu, and hydrogen annealing and tempering. In addition, their brazing and soldering services comprise silver, copper, nickel & precious metals, induction, torch and furnace brazing, and atmosphere induction brazing. Cook Induction has continually demonstrated its expertise and commitment to meeting its customers' needs by providing high-quality services.

About Troy Doolittle,
President, Cook Induction

Troy grew up in this company, and it is all he has ever known. He is now a 3rd generation owner, having started working there during his high school summer breaks and even throughout college. Troy has spent the last 12 years overseeing the quality department, and when his father retired last June, he took over as President. This company has been around since 1945, and he is honored to follow in his family's legacy.

"Cook Induction was looking at upgrading our SCADA system for our furnaces and we were referred to SSi by our calibration services company. We quickly learned that SSi had become the leader in this field with an exemplary reputation in our industry."
-Troy Doolittle,
President, Cook Induction

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"Our experience working with SSi has been nothing short of first class. The sales team had extensive knowledge of the issues we were facing and the industry standards that we were looking to conform to. The field engineers worked closely with out team as to not disrupt production. The implementation of the SCADA package was seamless and easy for our operators to use. Our partnership with SSi did not end there as soon we were working on different projects within our facility. We are very grateful to have found SSi and now as partners, Cook Induction is better equipped to serve our customers needs. Thank you SSI!"

-Troy Doolittle
President, Cook Induction

Strategy and Goals

Cook had two gas-fired furnaces, both experiencing occasional issues with burners failing without any audible or visible alerts for the operators. The objective of the project was to enhance the furnace's visibility and safety. SSi accomplished this by upgrading the gas train to meet NFPA guidelines. They incorporated safety features such as suitable actuators with limiting cams, double blocking valves, adjustable regulators, and individual burner functionality to improve control and efficiency.

The project involved significant labor, including replacing all gas lines, pilot and main burner blocking valves, as well as cleaning up the wiring for the system by installing two large wall panels. The updated hardware provided the necessary feedback for the system to self-correct. Each burner was configured for auto-reignition, and if this process failed to relight a burner successfully, an audible alert would notify the Cook team. A newly added touch screen displayed the specific burner that failed, enabling operators to address issues promptly. Faulty burners could be disabled for further testing and debugging.

In addition, temperature controls and redundant digital data logging were implemented to provide vital information on burner status, control temperature, load temperatures, and high-limit process variables. This ensured compliance with AMS 2750 standards and achieved precise accuracy.

The project strategy aimed to minimize the impact on Cook's production efforts while achieving the furnace's goals. The smaller furnace was retrofitted first, allowing the larger furnace to remain operational. Cook operated both furnaces for several weeks to catch up on production and address any system issues. Subsequently, the second furnace was retrofitted, and both furnaces have been in operation since then. The specific project goal was to enhance safety, efficiency, and visibility of the burner system, while aligning with the larger corporate objectives and vision, including compliance with NFPA and AMS 2750.

The Final Results

- Now up to code for NFPA86 furnaces.
- All furnaces are now data logging efficiently.
- Successful startup and temperature survey that got facility back in production.