



11 MW CHP PLANT DETAILED DESIGN / ENGINEERING @ LARGE FOOD PROCESSING PLANT IN THE MIDWEST

SUMMARY

Bryan Power Generation (BPG) prepared a complete detailed design for an 11 MW Combined Heat and Power (CHP) plant for a food manufacturing plant in the midwest. This natural gas fired CHP plant is based around two (2) used and refurbished Solar T60 combustion turbines with Rentech Heat Recovery Steam Generators (HRSGs).

The CHP equipment was originally installed at the United States Naval Station Great Lakes (NSGL) training base in North Chicago, Illinois where it operated from 2005 until being shut down in 2014. The complete CHP plant was salvaged and removed by Bryan Power and transported to Cedar Rapids where it was reinstalled. This included not only the major equipment but all of the supporting and structural steelwork, exhaust stacks, floor plating, conduit and piping.

The new CHP plant will generate approximately 11 MW of electrical power and up to 90,000 lb/hr of 350 psig steam for process use. Provision for a 2 MW 350/165 psig back-pressure steam turbine to be added later was designed into the system. Plant construction started in mid-summer 2016 with completion due in mid-2017.

PROJECT HIGHLIGHTS

- Evaluated the potential capital costs including the development of a complete 35% Design and a +/- 10% capital cost estimate for the proposed plant.
- Prepared all of the civil, structural, mechanical and piping bid specifications to allow contractors to bid for the plant construction and equipment installation.
- Bar-coded asset tracking software was used to accurately track pieces from site-to-site. Mobile app on iOS & Android platform used to read bar codes.
- BPG maximized the amount of the existing NSGL CHP plant that was re-utilized to reduce capital costs. BPG's salvage team and design team were able to seamlessly work together to accomplish this primary project goal.

Client

- Major Food Processing Facility in the Midwest

Location

- Cedar Rapids, IA

Date

- July 2016

Equipment

- Two (2) 5.4 MW Solar T60 SoLoNOx gas turbine generators, two (2) Rentech HRSGs and ancillary equipment

Service

- Equipment Procurement & Design/Engineering