

ERLANGER MICROGRID

CHATTANOOGA, TN – 8,000 KW MICROGRID WITH STEAM PRODUCTION AND ISLANDING CAPABILITY

Erlanger Baroness Hospital, located in Chattanooga, TN, is a non-profit academic teaching center affiliated with the University of Tennessee's College of Medicine. Erlanger is also the area's primary trauma center, a Level-One Trauma Center for adults, and the only provider of tertiary care in the tri-state area.

Since Erlanger is an emergency care center that remains in operation 24 hours per day, 365 days per year, the optimal arrangement for this facility is four (4) packaged, reciprocating-engine based CHP units rated at 2,000 kWe each (total of 8,000 kWe). Each Heat Recovery Steam Generator (HRSG) is connected to two CHP units to optimize steam generation. The fourth engine is placed in standby and used when other engines are out for planned or unplanned maintenance. In this manner, at least one of the engines in the CHP system can be in operation 24/7/365 along with the hospital.

White Harvest provided development services and construction management for Central Utilities Plant upgrade including 4 x 2,000 kW CHP, 1 x 12,000 pph heat recovery steam generator, integrated with 2 x 400 hp and 2 x 900 hp boilers and 5 x 1500 ton chillers. $ 11,000,000 total project cost. Chattanooga Times Free Press link.

SOLUTION PROVIDED

- **Generating Capacity:** 8,000 kWe
- **CHP Equipment:** Four MWM TCG 2020 Recip. Engines
- **Heat Recovery:** Two Steam generators, hot water, and provision for chilled water in future.
- **Type of Fuel:** Natural Gas

OUR ROLES

- Feasiblity Analysis and Grant Writer
- Developer – PM & CM
- O&M Provider (ongoing)

IMPACTS

- Microgrid Outputs:
  - 52,000 MWh electricity annually
  - 12,000 lb/hr 115ºF steam
  - 14,000 MBtu/hr hot water
- Black start and Island mode capability
- Reduced cost for energy needs
- Lower reliance upon the energy grid
- Reduced carbon footprint
- Improvement in power factor
- Provisions for chilled water and battery storage