



Turbine Generator Set

Project Owner and Location

Cinergy Solutions
Lafarge Gypsum Drywall
Silver Grove, Kentucky

Firm's Responsibility

MEP Engineering
Instrumentation and Controls
Commissioning and Start-Up

Total Budget

\$5,500,000

Completion Date

2000



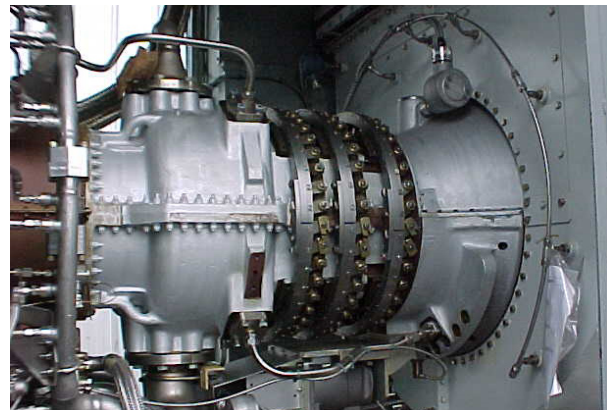
ThermalTech was retained by Cinergy Solutions (now Duke Energy) to perform design engineering services for a new cogeneration plant for Lafarge Gypsum in Silver Grove, Kentucky. Lafarge would be getting their raw gypsum materials from the Cinergy power plant across the river. ThermalTech provided design services for controls and instrumentation, as well as commissioning and start-up assistance. The project included the following:

- ❑ Cogeneration system which provides 5-mW electric for drywall plant power, as well as turbine exhaust that dries the plant's entire output of wallboard
- ❑ 5-mW natural gas-fired turbine and 5-mW, 13.8-kV, dual-cycle gas turbine generator set with 90 to 300-PSIG gas compressor
- ❑ Optimized system using inlet air cooling (with 200-ton air-cooled chiller) and waste heat in a process application
- ❑ New control building, acoustic sound wall, 150' free-standing stainless steel stack, and miscellaneous ancillary systems
- ❑ PLC control system design, turnkey fabrication, commissioning, and start-up
- ❑ Integration of multiple PLC manufacturers to a Wonderware front end

This project earned an Honorable Mention in the 2005 National ASHRAE Technology Awards and a 2004 Energy Star Combined Heat and Power Award.



Gas Compressor



5 mW Gas Combustion Turbine