

T-FIRED TURNKEY RETROFIT SUCCESS

SITUATION

Procter & Gamble needed to increase production at their Mehoopany, PA plant which produces the popular Pampers™ diapers, Bounty™ paper towels and Charmin™ toilet tissue. This required an increased steam load at reduced emissions to remain within an overall umbrella emissions level required by local air quality standards. To minimize downtime, this required quick turnaround retrofitting of three boilers, two 185,000 PPH CE tangentially fired gas and oil fired units and one 120,000 PPH B&W multiple burner wall-fired unit, to operate at lower overall emissions with the latest state of the art combustion technology.

In addition to reliable burner equipment, P&G wanted a comprehensive turnkey retrofit to insure a seamless installation. P&G selected Coen's retrofit team to provide sole source accountability for the entire turnkey project from removal of existing material to installation and commissioning of the new equipment.

As combustion specialists for over 89 years, Coen understands that burners need to operate at or below their guaranteed performance levels. We also realize the importance of single point accountability from someone who knows how to do the job right the first time.

Name:	Procter & Gamble
Location:	Mehoopany, PA
Boilers:	CE Tangentially Fired -- Units #1 & 2 B&W Wall Fired -- Unit #4
Capacities:	(2) 185,000 PPH (1) 120,000 PPH
Burners:	(4) Coen T-Fired Burners (4) Coen QLN Low NOx Burners
Fuels:	Natural Gas / #6 Heavy Oil
Limits (Gas/Oil):	0.10/0.38 lb/mmBtu NOx--Unit #4 0.12/0.40 lb/mmBtu NOx--Units #1 & 2 0.11/0.12 lb/mmBtu CO

SOLUTION

The successful turnkey installation included four **(4) QLN-2.4 Low NOx Burners with fuel piping trains** for Unit #4

and four **(4) Coen T-Fired Low NOx Burners with**

igniters and fuel piping trains for Units #1 and 2. All of the burners fire natural gas and #6 oil with **450-500 degree F preheated air and no FGR**. In addition, Coen provided the engineering to modify the existing Triconex BMS and Honeywell DT 3000 Combustion Control.

"...the burners, controls, etc. will be robust enough to allow real life flexible plant operation" stated Kenneth Price, P.E., Section Head Thermal Energy Systems, Engineering Division, Procter & Gamble.



Procter & Gamble Mehoopany, PA



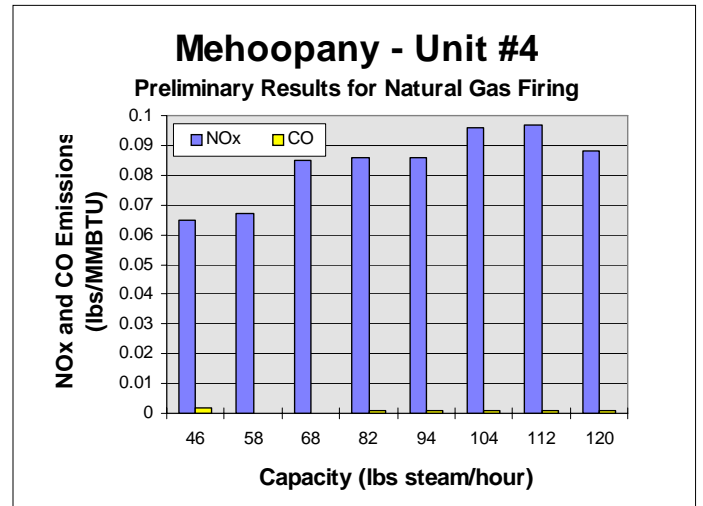
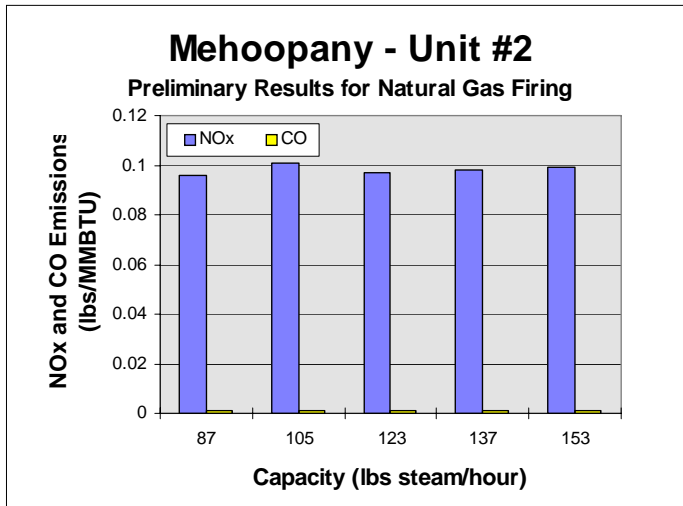
Installation of Coen Low NOx Burners

RESULTS

Preliminary start up results proved better than expected and included:

- ☐ **LOW NOx** -- NOx remained below 0.1 lb/mmBtu (gas) and 0.3 lb/mmBtu (oil) throughout the firing range with High Preheated Air and No Flue Gas Recirculation
- ☐ **LOW CO** -- CO remained below 0.02 lb/mmBtu throughout the load, near “zero” CO in some cases

“When Coen is involved I feel that I do not have to worry about meeting the “EPA” requirements -- Coen meets their guarantees” stated Kenneth Price, P.E., Section Head Thermal Energy Systems, Engineering Division, Procter & Gamble.



CUSTOMER NEEDS

- ✓ Single Point Accountability
- ✓ Less Engineering Resources
- ✓ Lowest Installed Cost
- ✓ Increase Steam Capacity
- ✓ Meet Emission Regulations

OPERATIONS

- ✓ No FGR Required
- ✓ Good Turndown
- ✓ Safe Continuous Operation
- ✓ Stable Performance
- ✓ 100% Capacity Achieved

AIR QUALITY

- ✓ < 0.1 lb/mmBtu gas NOx
- ✓ < 0.3 lb/mmBtu oil NOx
- ✓ < 0.02 lb/mmBtu CO

Strict Federal air pollution regulations trickling down to the district level are creating great economic challenges to remain competitive in a fierce global environment. It is no longer an option, but a necessity for industry to pursue and implement the latest technology that provides economic and environmental benefits.

Coen Company, producers of combustion equipment since 1912, understands this trend. Coen Company is committed to providing the latest in combustion and emission control technology to meet the needs of industry. We also offer sole source Turnkey responsibility.



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