



Installation Of New Emission Control Technology At The Fresno/Clovis Regional Wastewater Reclamation Facility

Stephen Hogg
City of Fresno
Assistant Director of Public Utilities

Fresno/Clovis Regional Wastewater Reclamation Facility



- Rated at 80 MDG – Current Flow is Approximately 70 MGD
- Activated Sludge Plant
With 13 Anaerobic Digesters
920,000 – 1,870,000 gallons
- Produce 1.0 – 1.2 million cf
of biogas per day



Fresno/Clovis RWRF Power Generation Facility



- New Combined Heat Power Facility Came Online November 2004.
- Two Alison 501, 3.5 Mw Combustion Gas Turbines.
- Ingersoll Rand 1 Mw Stream Turbine.
- Replaced two 660 Kw dual-fuel IC Engines.



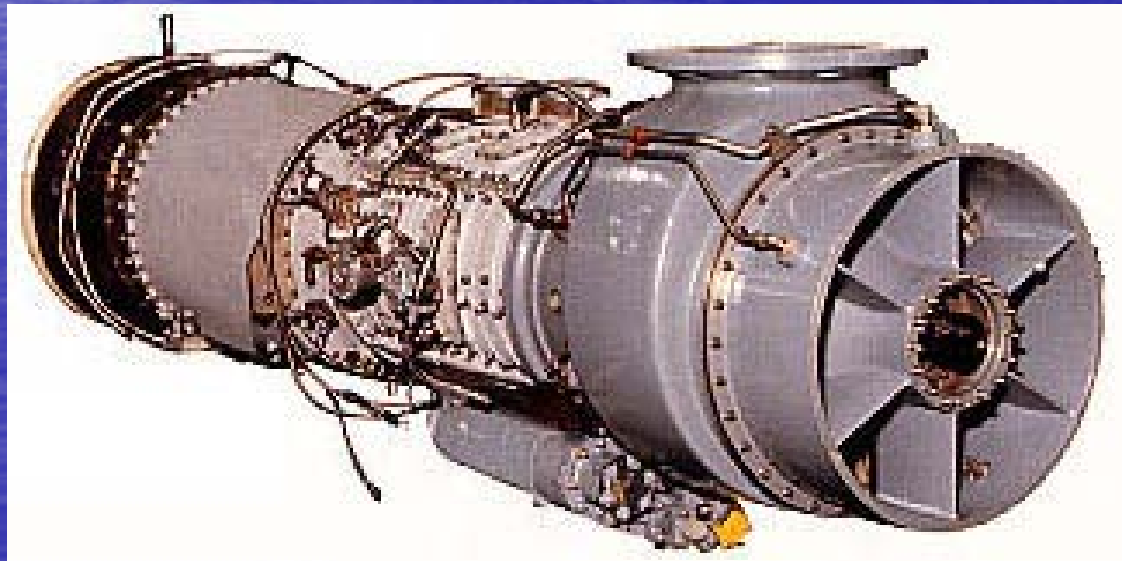
Current Emissions Limits



- NOX – 5.74 lb/hr and 25ppm
- SOx – 1.0 lb/hr
- CO – 27.95 lb/hr and 188 ppm
- PM10 – 1.34 lb/hr

RULE 4703 STATIONARY GAS TURBINES

- NO_x - 5ppm
- CO – 200ppm
- Effective October 1, 2011



Alternatives For Compliance



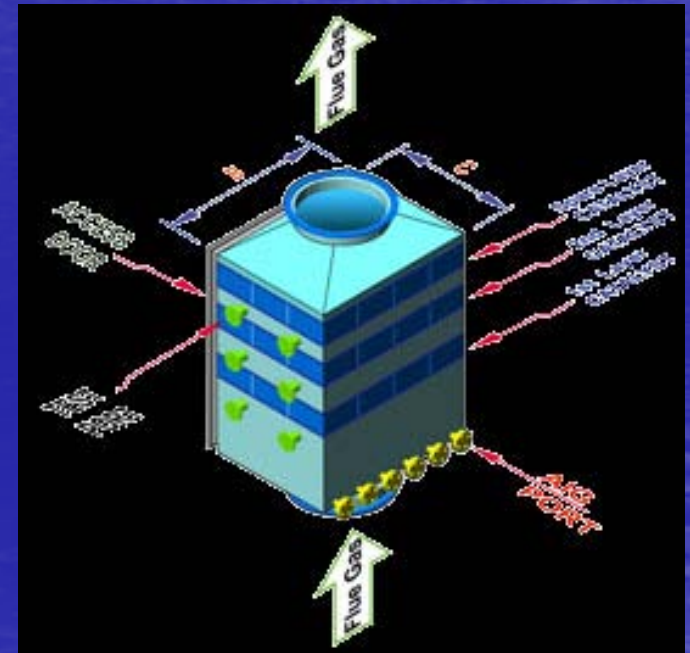
- **Cheng Low NOx (CLN)**
- **Selective catalytic reduction**
- **Turbine Replacement**

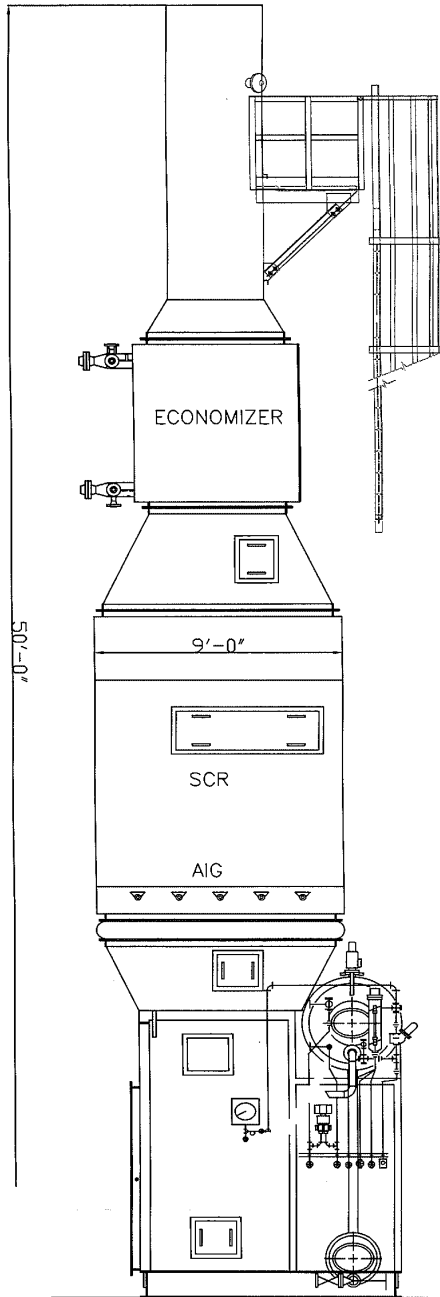
Gas Conditioning



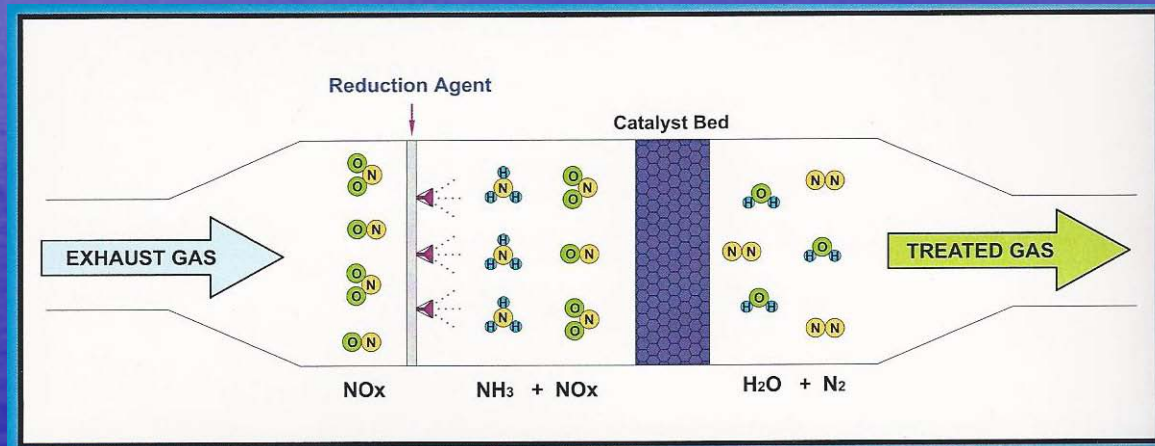
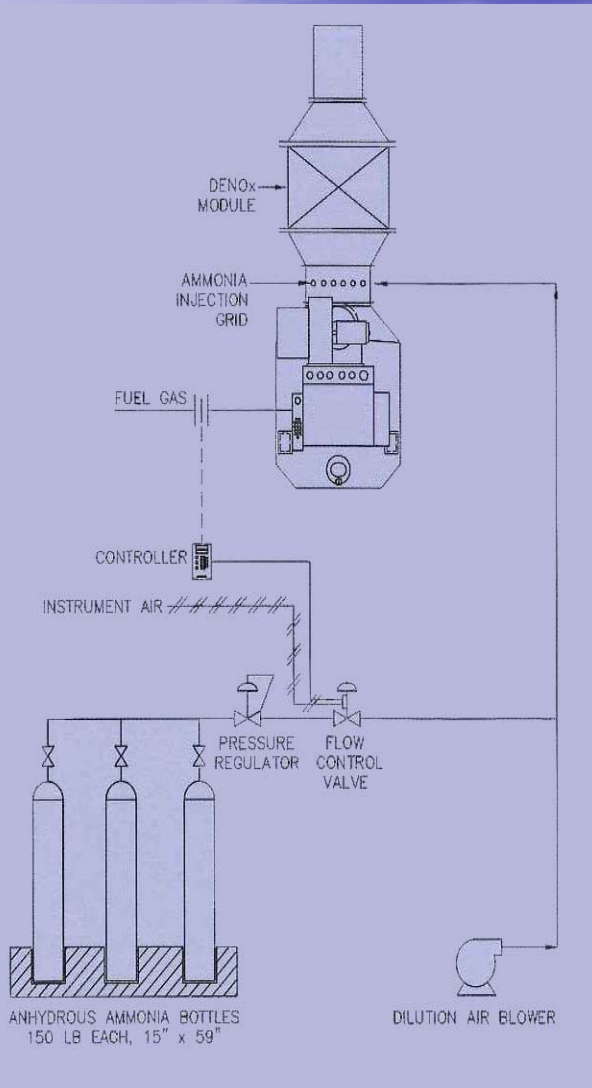
Selected System

- R.F MacDonald Co.
PaNOx™ from C&C Panasia





SCR Operating Principle



What's Next

