RSCR

High Efficiency
NOx Control System

Vogt Power International

A Babcock Power Inc. Company

www.babcockpower.com

RSCR = Regenerative SCR

New, High Efficient NOx Control System

Utilizing and Combining the

Advantages of two Proven Technologies

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RSCR - Highlights

- Targeted at tail-end applications
- Boilers, Biomass, process applications, kilns
  - Flue gas downstream of ESP or Baghouse
  - Low concentrations of particulate matter, poisons (As, Pb, Na/K)
  - Low SO_3 content (after a scrubber or low S fuel)
  - Flue gas temperature is low (saturated to 350F)
- Boilers to 100 MW

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RSCR - Highlights

- Modular, standard design
  - Minimizes installation cost
  - Trains added for higher capacity
- Uses proven, guaranteed catalyst
- Utilizes existing NO_x CEM
- CO reduction optional with separate catalyst
- Achieves high heat recovery (95%) minimize energy cost
- High removal efficiency (to 80%) in compact design
- Patent pending

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RSCR - Design

- Multi-chamber design
- Ceramic media used for heat transfer
  - Provides uniform gas distribution to catalyst
- Catalyst bed above heat transfer bed
- Beds cycled rapidly to ensure proper gas temperature into catalyst
- Designed for simple, quick installation

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RSCR - Thermal Module

- Based on conventional RTO/RCO system
- Over 4000 units in operation since early 80's
  - Many industries; low gas temperature; particulate laden
- Issues on media, controls, valving, etc have been solved
  - High reliability
  - Moderate cost
  - Predictable
  - Guaranteed
  - Cleanable
  - Minimized construction costs
- Key modification is addition of mixers, reactant, and catalyst dynamics

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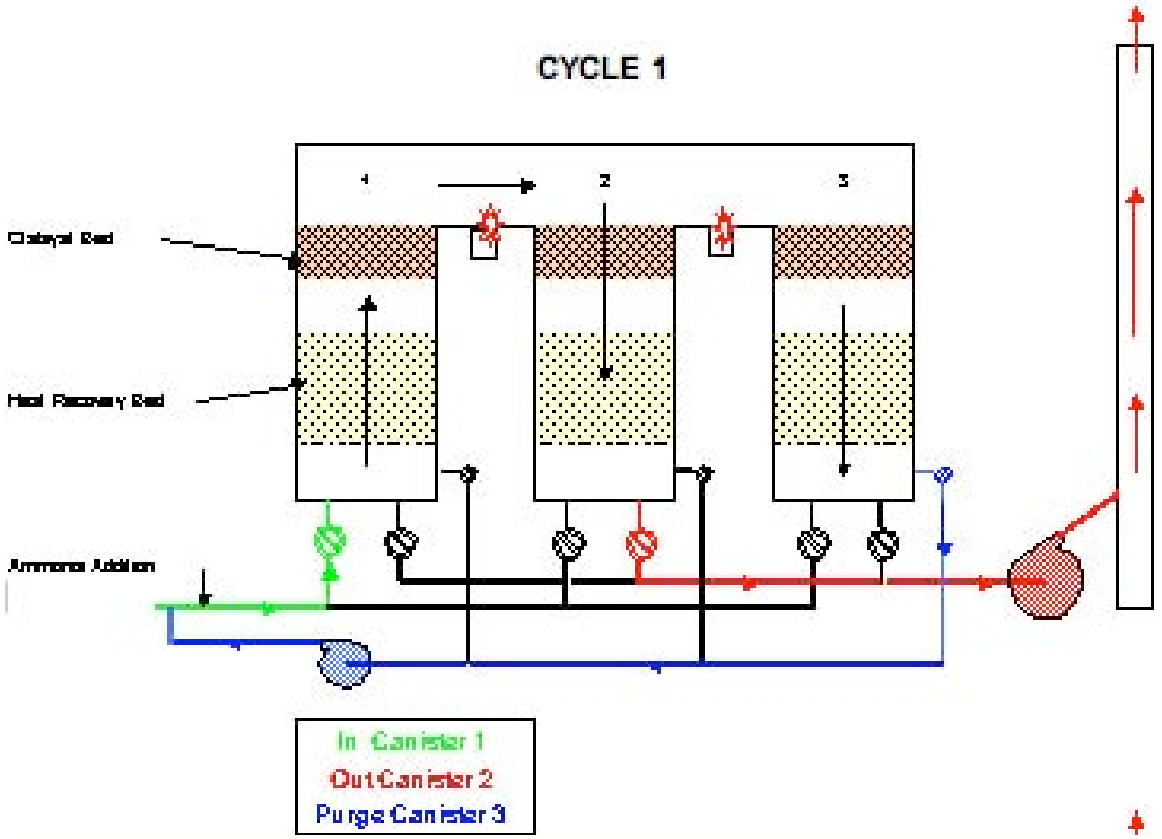
RSCR Flow Sequence



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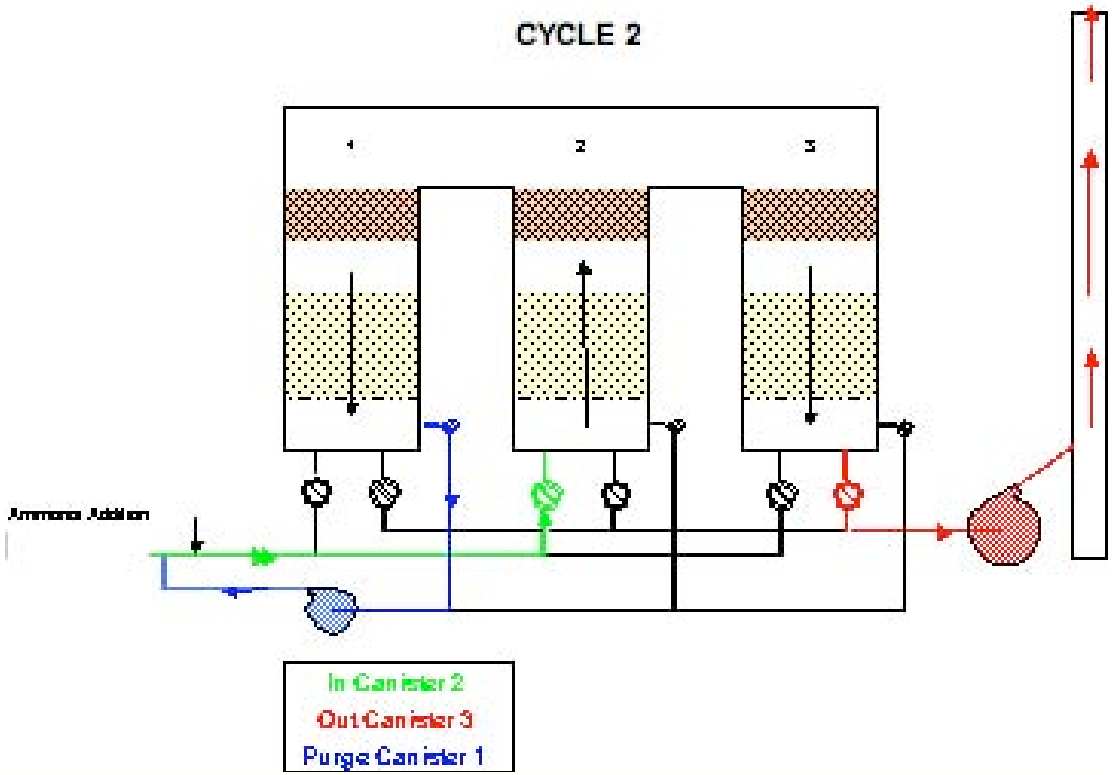
RSCR Flow Sequence



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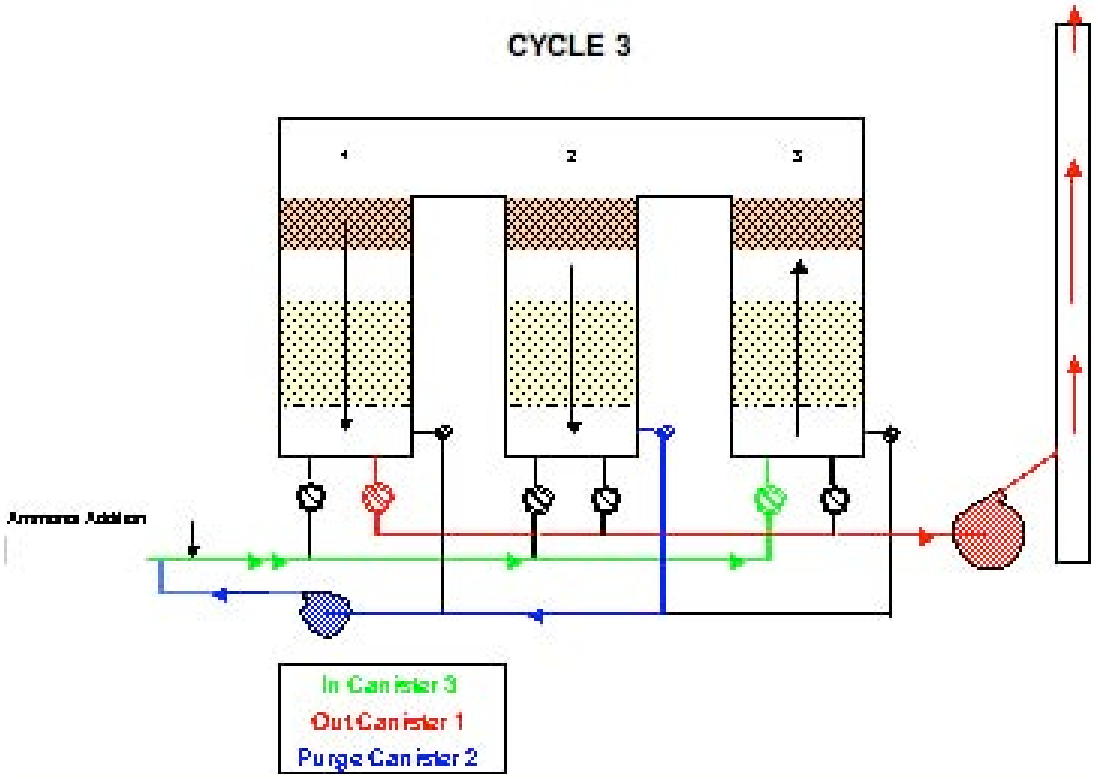
RSCR Flow Sequence



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Serial Number 2 - Stratton

- 50 MW WFB (2 x 5 can unit)
- Whole tree chips/waste wood/C&D
- Targeted CT REC program (0.075 lb/MBtu)
- Inlet 0.25 lb/MBtu
- Able to achieve < 0.01 lb/MBtu
- Started up 12/27/04

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RSCR – Stratton

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RSCR Features -Summary

- High NOX removal efficiency (to 80%)
- Low energy consumption (>95% recovery)
- Optional CO removal
- On-line cleaning capabilities
- Self-contained tail-end unit including:
  - Fans, Controls, Burners (gas, propane, fuel oil)
- Bypass capabilities for maintenance
- Install/start up with short outage (weekend)
- Patent pending

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