POWER PLANTS – FGD
LIMESTONE SLURRY PROCESSES
w/ PULVERIZED LIMESTONE
&
CHEMICAL HANDLING, SLURRYING & DELIVERY
PROCESSES FOR SO2 & HG TREATMENT

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HOT TOPIC HOUR
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Limestone Supplier:
- Produces pulverized limestone with roller mills.
- Provide logistics for supplier storage and regional distribution
- Deliver and unload pulverized limestone to Power Plant silo.

Power Plant
- Supervision monitors automated slurry making process
VACUCAM® EJECTOR MIXER

Conditioned powder is vacuum conveyed into the system directly from a silo or a surge bin equipped with an Air-Cone® Hopper for conditioning of powder.

Powder, conditioned with air or inert gas, is conveyed into the mixer by the VACUCAM® system's near-perfect vacuum.

At the mixpoint, the powder is propelled through a curtain of atomized liquid before proceeding through the discharge tube.

Liquid is introduced into the system from a separate stream in a single pass or recycled.

Finished slurry is discharged.
1. Single Pass Process Direct Into Slurry Storage Tank
POWER PLANT-LIMESTONE SLURRY PROCESS
SINGLE PASS PROCESS DIRECT INTO SLURRY STORAGE
POWER PLANT-LIMESTONE SLURRY PROCESS
SINGLE PASS PROCESS DIRECT INTO SLURRY STORAGE
Dual Silo Feed to Dual Mixer System
Pulverized Limestone Storage
Two silos w/ Dual Cone Outlets
VACUCAM® LIMESTONE SLURRY PROCESS
DUAL EJECTOR MIXER SINGLE PASS IN-LINE SLURRY DIRECT TO SLURRY STORAGE

Limestone From Silo

Water Supply

30%+ Slurry to Storage Tank
1. Single Pass Process Direct Into Slurry Storage Tank
2. Single Pass In-Line Process to Remote Slurry Storage Tanks
Single Pass In-Line Process to Remote Slurry Storage Tanks
Limestone Slurry Process
Dual Silos & Slurry Processes
DUAL DOME STORAGE
PULVERIZED LIMESTONE
Limestone Slurry Process
Dual Domes & Slurry Processes
Limestone Slurry Process
Dual Domes & Slurry Processes
Limestone Slurry System w/ Dome Storage Supply
Limestone Slurry Process in Dome Vault
VACUCAM® DUAL EJECTOR MIXER PROCESS
W/ LIMESTONE SUPPLY HOPPER
W/ SLURRY TRANSFER PUMP
LIMESTONE SLURRY PROCESS
IN VAULT OF DOME
LIMESTONE SLURRY PROCESS
IN VAULT OF DOME
POWER PLANT
Process Options

1. Single Pass Process Direct Into Slurry Storage Tank
2. Single Pass In-Line Process to Remote Slurry Storage Tanks
3. Single Pass Process for Direct PH Control
POWER PLANT-LIMESTONE SLURRY PROCESS
SINGLE PASS PROCESS FOR DIRECT PH CONTROL TO SCRUBBER
-DIRECT INJECTION TO SCRUBBER
-ELIMINATE LIMESTONE SLURRY STORAGE
Semi-Bulk Systems has applied its technology and experience in Powder Handling & Powder/Liquid Mixing to provide the most efficient Limestone Handling/Slurry Processes for FGD. The Technology offers many benefits over conventional slurry processes.

- The VACUCAM® Mixing Systems incorporate no mechanical mixing devices and has no moving parts (other than liquid pumps).
- Lower Initial Capital Costs
- Lower Installation costs
- Less real estate required for installation.
- Lower Operating Cost in terms of manpower, maintenance and operating costs
- System never requires scheduled downtime for prolonged maintenance or preventative maintenance.
- Capacities to meet any requirements
- Energy—90%+ savings per ton of slurry
- Much greater Operation Flexibility
  - Instant start and stop of slurry process
  - Total System Automation
  - Simple wash down of slurry process
  - 100% Reliability
- Quality- efficient dispersion of dry powder to provide maximum surface area contact for scrubbing efficiency –no dry dust collection required.
- Lowest Cost of Ownership
Additional Treatment Options

Wet Scrubber vs. In-Furnace Treatment
So2 and Hg Slurry Treatment Processes

- In-Line limestone slurry w/ direct injection to FGD scrubber or Furnace
- In-line Sorbent slurry w/ direct injection to FGD scrubber or Furnace.
- Liquid Chemical feed into sorbent slurry with direct injection to FGD scrubber or furnace.
SBS Typical System
Dry Ingredient Handling & Powder/Liquid Mixing

VACUCAM® Ejector Mixer
Air-Cone® Hopper
FGD & Hg TREATMENTS IN SCRUBBERS VS IN-FURNACE SO2 AND/OR HG TREATMENTS
**FEATURES***** BENEFITS OF THE VACUCAM® SLURRY MIXING PROCESS**

- Direct In-Line single pass mixing. No moving parts.
- Produces high quality slurry mix with rapid and maximum surface area contact to maximize reaction.
- Direct Injection – no slurry storage required.
- Totally enclosed mixing system – minimal dust.
- Small footprint required.
- Minimal maintenance—very reliable—no scheduled maintenance downtime required.
- High quality slurry mix provides maximum contact and reaction rate while maximizing process yield.
- Very low energy usage—save 50-90%.
- Minimal dust control required.
- Minimize real estate requirements.
- Easily automated and fine tuned to optimize chemical additions with direct feedback from on-line analyzers.
Questions and Answers

Thank you ...............