

REINHOLD ENVIRONMENTAL Ltd.



**2013 APC Round Table
& Expo Presentation**

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O&M Issues Startup, Shutdown & Cycling Loads

2013 APC Round Table

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WET FGD O&M Issues

- Regulations: Startup – Shutdown Rules
 - EPA proposal to start averaging time when switching from startup fuel to primary fuel or synchronization to the grid
- Cycling Loads
 - “Green” Energy and gas price: coal plant cycling
 - Low load operations
 - Shutdowns: hours to a few days

Startup & Shutdown

- Startup - Shutdown Conditions
 - Normal startup fuel up to $\approx 25\%$ load
 - 25% Load required to overcome draft loss due to slurry
 - Foaming???
- Agitators running
- Controls turn on pumps based on pH
 - Can cause excess maintenance or pumps to run when not necessary
- Turn down blowers or shut off?

O&M Issues

- Wet/dry interface issues
- Shut down: extra wash cycle on demisters with fans off
- ESP is not in service, may result in ash carryover:
aluminum fluoride blinding
- Extra cycling of pumps

Operating Changes

- Limestone prep
 - May have to run feed loop in colder weather
- Run recycle pumps in cold weather to prevent ice buildup
- More chance of nozzle fouling
- Change logic???

Low Load Conditions

- Increased cycling or lack of full-load condition,
 - Many systems were installed with constant speed pumps as it pertained to an existing design range. These pumps may need to be retrofitted with VFDs to prevent equipment cycling.

Continuous operation at low load may lead to solids settling in limestone feed lines. You may need to add a second pipe line for low flow operation. If a plant's new operating range is 25% to 50%, it probably is worth the investment to install reduced sized pipes to reduce solid settlement.

Thank You!