Continuous Dry Fly Ash Removal System
Airslide® to Fuller-Kinyon™ Pump (A2P™)
Overview

- Traditional pneumatic fly ash systems
- Continuous fly ash system (Airslide to F-K Pump)
  - Operation
  - Components
  - Picture tour of equipment at JEC (typical for A2P)
Traditional fly ash systems

- Under ESP or Baghouse
- Ash residence time in collection hoppers
- Many cycling valves
- High amount of control I/O
- Moderate maintenance
Airslide to Fuller-Kinyon Pump (A2P)

- Only new in name and concept. Utilizes two well proven ash handling technologies
- Airslides and F-K Pumps
- Manual gate valves
- Airslide network transfers ash to F-K Pumps
- Rotary flow control valve
- Pneumatic conveying blowers
- Airslide fluidizing blowers
Airslide to Fuller-Kinyon Pump (A2P)

- All hoppers empty all the time
- No cycling ash intake valves at each hopper
- Only 2 moving parts between precipitator hopper and ash silo
- Less control I/O
- High capacity conveying rate over long distances
- Low operating costs
Airslide Air Assisted Gravity Conveyors

- Developed by Fuller Co. in 1945
- Upper and lower duct separated by a porous fabric membrane - .25” thick
- Fabricated from thick gauge steel
- Weather-lip seal
- Fabricated to several widths to accommodate low/high conveying rates
Angle of repose and fluidization

- All ash has a natural angle of repose
- Without any form of fluidization, the ash must be tipped on an angle greater than the angle of repose to establish gravity flow
- With fluidization, the angle of repose can be greatly reduced and gravity flow can be achieved
Airsride Air Assisted Gravity Conveyors - Concept

- Low pressure fluidizing air supplied to lower chamber - 0.5 to 3 PSIG
- Ash supplied to upper chamber atop membrane
- Air permeates through fabric membrane causing fluidization
- Ash will become motive when Airslide is pitched on a slight angle
Fuller-Kinyon Pump Dry Bulk Line Charger

- Developed by Fuller Co. in 1926
- Rotating screw acts as volumetric line charger and airlock
- Screw advances ash into conveying chamber
- Flapper valve acts like check valve and provides back-pressure
- Easy to maintain
Airsides
Airslides

- Ash collected under hoppers is transferred into main trunk Airslide
- Transfers ash toward F-K Pump
- All Airslide insulated for personnel protection & heat retention
Airslides

- Circulation air heaters heat ambient fluidizing air to Airslide. (1) per Baghouse/precip.
- Eliminates risk of condensing hot flue gas in Airslide
Rotary flow control valve

- Rotary flow control valve positioned in Airslide just upstream of F-K Pump
- Works in conjunction with convey line pressure transmitter
- Meters ash into pump at controlled rate during upset conditions
- During steady state ash production, valve is open 100% and does not modulate.
F-K Pump design
Thank You
Questions?

Jim Patterson
Sr. Sales Engineer
FLSmidth Inc.
Pneumatic Transport Dept

Tel: +1-610-264-6569
james.patterson@flsmidth.com