Keephills Unit 3
Spray Dryer Absorber, Pulse Jet Fabric Filter and Mercury Control Systems

Contract Order
2007

Commercial Operation
2011

Overview
Babcock & Wilcox Power Generation Group, Inc.'s (B&W PGG) spray dryer absorber (SDA) systems feature a combination of design components to provide a level of reliability and sulfur dioxide (SO2) removal efficiencies that are among the highest in the industry.

B&W PGG is the exclusive North American licensee of GEA Process Engineering A/S, Denmark, for the GEA Niro SDA process. The GEA Niro SDA is globally recognized by the power generation industry as the dry scrubber technology of choice.

Features of the system include a unique flue gas dispersion system for optimal gas and reagent mixing, a low maintenance rotary atomizer with a slurry capacity that is among the highest in the industry, large SDA chambers, and a complete reagent recycle system. Benefits include high SO2 removal efficiency, low capital cost, high system availability, and low operation and maintenance costs.

Boiler/Plant Information
Unit 3: 495 MW
Boiler type: Hitachi supercritical pulverized coal with natural gas for startup
Design fuel: Western subbituminous

Project Summary
B&W PGG’s project scope includes an SDA system to limit SO2 emissions, consisting of 2 x 50% SDA vessels and reagent preparation system (for lime and recycle ash), a pulse jet fabric filter (PJFF), and a sorbent injection system using powdered activated carbon (PAC) to limit mercury emissions.

B&W PGG Scope
- Two SDA modules, size 10000 (16 meter)
- Two Niro F800 rotary atomizers
- SDA inlet and interconnecting flues
- Lime preparation system with paste slakers
- Recycle solids preparation system
- Eight compartment plenum style PJFF with integral bypass
- PPS/P84 filter bags
- Pulse air cleaning system
- Sorbent injection system for mercury control using PAC reagent

Results
- Met all performance and reliability run guarantees
- Project was structured using a variable price/fixed price arrangement and was executed on budget and below the original price estimate

Spray dryer absorbers and pulse jet fabric filter for Keephills Unit 3.

(Continued on reverse side)
3D projection of Keephills Unit 3 SDAs and pulse jet fabric filter.

Environmental equipment construction at Keephills Unit 3.

Babcock & Wilcox Power Generation Group, Inc. is a subsidiary of The Babcock & Wilcox Company (B&W). Established in 1867, B&W is a world leader in providing steam generating and emissions control equipment, nuclear operations and components, and defense program management services.

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