



PT SEMEN PADANG

Increase time intervals and/or replace time-based with pressure differential jet pulse controls in compressed air system

SUMMARY OF THE OPTION

PT Semen Padang produces 5,240,000 tons of cement per year from its five plants, one of which is not functioning any more. The GERIAP project focused on Indarung IV.

Semen Padang has a lot of bag-house Air Jet Pulse systems or jet pulse filters (JPF). The main aim of bag-house filter (BHF) is to reduce dust emission level, which occurs in the production process. This option is chosen because JPFs consume a lot of compressed air at pressures of 5 to 7 bar for cleaning or shaking the bag by pulsing the air jet in certain cycle time.

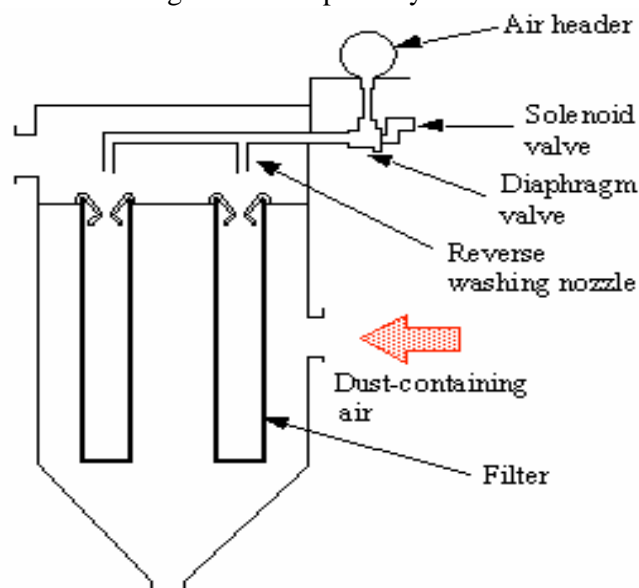
There are two methods available to control the pulse of air jets:

1. Time based – whereby compressed air is injected into the bag filters at fixed time intervals.
2. Differential Pressure – whereby the air jet pulse will only be activated if the pressure drop across the filter reaches a certain set point.

The 10 units Jet Pulse Filter that will change the setting in cycle time controller were already completed for five units at time of writing of this case study.

In this activity there is no special investment needed, because only the setting adjustment operation of existing equipment are made. Based on the calculation after the pulse time and shaking time adjustment, 10,432 kWh/year of energy is saved.

Figure: Air Jet pulse System



KEYWORDS

Indonesia, Cement, Compressors & Compressed air system, Jet pulse controls



RESULTS

Financial benefits

- Investment: none
- Annual cost saving: US\$ 593.49 * (10432 kWh/year x Rp 512 /kWh=Rp 5,341,460,-)
- Payback period: immediate

Environmental benefits

- Annual energy savings: 10432 kWh % energy saving from total energy consumption
- Annual GHG^(**) reduction: 7.55 tons CO₂ (= 10432 kWh/yearX0.000724 tCO₂/kWh)

(*) US \$ 1 = Rp 9,000

(**) www.unep.org/energy/tools/ghgin

FOR MORE INFORMATION

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