CAB Aufbereitungs- & Verschleisstechnik Ges.m.b.H.

Coal Power Plant in CR

Dewatering of slag and ash 2011

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CAB ash processing and dewatering plant

Initial situation:

- 3 coal power plants with a total of 2.9 MW boiler capacity and 1.05 MW electrical capacity (9 boilers)
- Quantity of solids (slag): 65 t/h (0 - 30 mm)
- Ash (bottom ash and fly ash): 16 t/h < 0,063 mm (63µm)
- Moisture content of the slag: 97 – 98 %
- Operating cost before investment:
    - 3000 m3/h water from a river were pumped to the power plants for coal cooling. From there the slag was pumped to a pond in a distance of 5 km.
    - energy consumption for this transport were 1500 kW/h (24 h/365 days).
    - dirty overflow of the pond went back into the river. Sedimentation had to be excavated.
    - deposit cost for this were EUR/year 4,0 Mio + energy cost for pumping.
    - wear of pumps and pipes in addition.

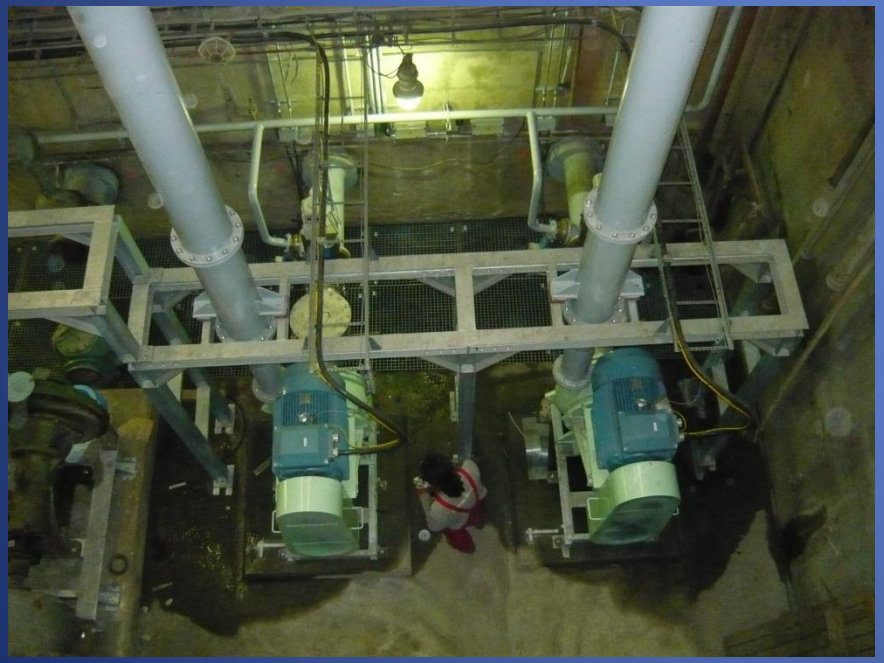
Situation today

- Capital expenditure for all 3 plants: EUR 19,5 Mio
- Amortisation of investment: appr. 4 years
- Quantity of water (total) after investment: max. 1.100 m³/h
  Recycled water is used in circulation. Additional water from the river is only 50 m3/h.
- Moisture of the end product: 25 - 28%

Process flow:

1. Collecting tank of slag/ash/water suspension (behind boiler)
2. Dredging pumps to pump suspension 0 – 30 mm to splitting tank
3. Processing of 0 – 30 mm with CAB „Slag Compacter“
4. Processing of 0 – 4 mm with 1st cyclone stage
5. Processing of 0 – 0,1 mm with 2nd cyclone stage (cluster)
6. Material discharge from „Slag Compacter“
7. Material discharge from dewatering silo to chute, conveyor belt and mixer
8. Processing of 0 – 0,03 mm with thickener (waste water treatment)
9. Recycling water for slag flushing (42 mg/l)

2. Dredging pumps to convey suspension 0 – 30 mm to splitting tank



Heavy duty pumps for very abrasive suspensions
(rubber lined and hard metal/chrome)

3. Processing of 0 – 30 mm with CAB „Slag Compacter“

4. Processing of 0 – 4 mm with 1st cyclone stage

5. Processing of 0 – 0,1 mm with 2nd cyclone stage

6. Material discharge from „Slag Compacter“

Material discharge from dewatering screen to dewatering silo

7. Material discharge from dewatering screen to chute, conveyor belt and mixer

8. Waste water treatment:
Processing of 0 – 0,03 mm with thickener