



MVR MILL IN EXSHAW, CANADA, RUNNING FOR ONE YEAR

60 % Capacity Expansion at Exshaw Plant - Plant Efficiency increased, emissions reduced

// Exshaw cement plant belongs to the French-Swiss cement giant LafargeHolcim. A major upgrade aimed at raising the production capacity of the cement plant by 60 % was successfully completed in 2016. The plant's efficiency was increased while at the same time emissions were reduced. The use of the most modern plant components made this possible. Gebr. Pfeiffer's MVR mill for cement raw material grinding, featuring the most advanced vertical mill technology, has now been used for one year to the full satisfaction of the cement producer.

Project phase and requirements

Established in 1906, LafargeHolcim's Exshaw cement plant is located some 18 km from Banff National Park in the Bow Valley on the edge of the Rocky Mountains. In 2013 Lafarge Canada started a major expansion project to raise its Exshaw plant's cement capacity from 1.3 Mta to 2.2 Mta.

The large-scale project entailed decommissioning the aging kiln 4 production line, modifying kiln 5, installing the new kiln 6 and raising the grinding capacity through vertical mill technology.

Jim Bachmann, plant manager at Exshaw, points out that "along with increasing productivity, reducing the environmental performance of the plant was a major goal of the extensive modernization".

The entire expansion project was coordinated by Lafarge Canada. The majority of the suppliers contracted came from western Canada, with most of them originating from the southern Alberta area and the Bow Valley itself.



Gebr. Pfeiffer from Kaiserslautern was contracted to supply the vertical mill for raw material grinding. Ideally tailored to the customer's specifications and the specific material characteristic of the cement raw material, the MVR 5000 R-4 roller mill, featuring the most modern vertical mill technology in the world, was chosen for this task. Mounted on top of the mill was a high efficiency classifier of the type SLS 4750 B. The installation of the raw meal grinding plant was one of the first key implementation features of the entire

upgrading. The vertical roller mill with a drive power of 3300 kW was delivered and installed within the scheduled time frame and successfully commissioned in July 2016. The guaranteed throughput rate of 340 t/h at 12 % residue 0.090 mm was even exceeded by 20 t/h. The mill is in operation 7 days a week and 16 hours a day. Of course, preventive maintenance is of greatest importance. A programmed plant shutdown to inspect, regenerate or replace critical spare parts is required once a year.

Results and Benefits

The original production capacity of the cement plant was 1.25 Mta. The investment allows Lafarge Canada to annually produce 2.2 Mta cement, which has been estimated to have an economic impact of about US\$ 0.9bn per year on the Alberta region. In their totality the technology upgrades led to a 60 per cent reduction in sulphur dioxide (SO₂) emissions,

a 40 per cent reduction in nitrogen oxide (NO₂) emissions and a substantial dust and noise reduction. Gebr. Pfeiffer supplying the MVR 5000 R-4 roller mill for cement material grinding was able to successfully contribute to this ambitious target. Meanwhile, the operating time of the mill adds up to more than 5000 hours.

Project data:

- » Customer: Lafarge Canada Inc.
- » Project: Exshaw, Canada
- » Plant/Machines: Grinding plant for cement raw material with MVR 5000 R-4
- » Material to be ground: cement raw material
- » Throughput rate: 340 tph (guaranteed)
- » Fineness: 12 % residue on 0.090 mm

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