

Macawber Installation Case Study: Pulverized Fuel Ash – Retford UK

IN BRIEF

A large power station was built during the late 1960s. It comprises four 350 m watt coal fired boilers and provides a base load for the national grid. The ash handling systems originally installed were water slurry systems transferring the ash to distant lagoons. Modern environmental standards required the replacement of the lagoons with state-of-the-art dry fly ash handling and storage systems to allow reuse of the ash in other beneficial processes. Each of the boiler primary ash drop chutes were disconnected from the old wet system, and all nine chutes of each single boiler connected to an Ashveyor® low velocity ash handling system. It was arranged that each boiler system would cycle independently, on demand, through a 125mm (5") pipeline to a final destination at a large storage silo for subsequent out loading to a road tanker. The arrangement was totally clean and without dust or spillage. The first system was installed in March 1998 and the second system was installed in May 2002. A central control system was provided for each of the two ash handling systems for continuous automatic control.

MATERIAL CHARACTERISTICS

Material	Pulverized Fuel Ash
Bulk Density	850 kg/m3 (53 lb./ft3)
Size	< 100 micron
Temperature	Up to 400°F (205°C)
Moisture	< 1%
Condition	Highly abrasive Free flowing when aerated

SYSTEM OBJECTIVES

1. Continuous automated operation
2. Air consumption efficiency
3. Reliable consistent conveying
4. Maintain low pipe and valve wear

SYSTEM PERFORMANCE

Transfer Capacity	35 t/h each
Conveying Distance	235m (750 ft) total
Pick-up Points	9 per system
Reception Points	1

