

CASE STUDY

POWER GEN Plc - COTTAM POWER STATION FOUR x 500 MW UNITS

Retford, Nottinghamshire, U.K.

March 1998

SUMMARY

Conveying PFA from an electrostatic precipitator to a silo at low velocity, providing for low pipewear and minimizing maintenance costs.



CASE STUDY

Mactenn Systems Ltd.
Maryville, Tennessee USA

APPLICATION FEATURE

PFA conveying system
for a large power utility.

CUSTOMER Power Gen Plc - Cottam Power Station
Four x 500 MW Units

LOCATION Retford, Nottinghamshire, U.K.

INDUSTRY Power Generation

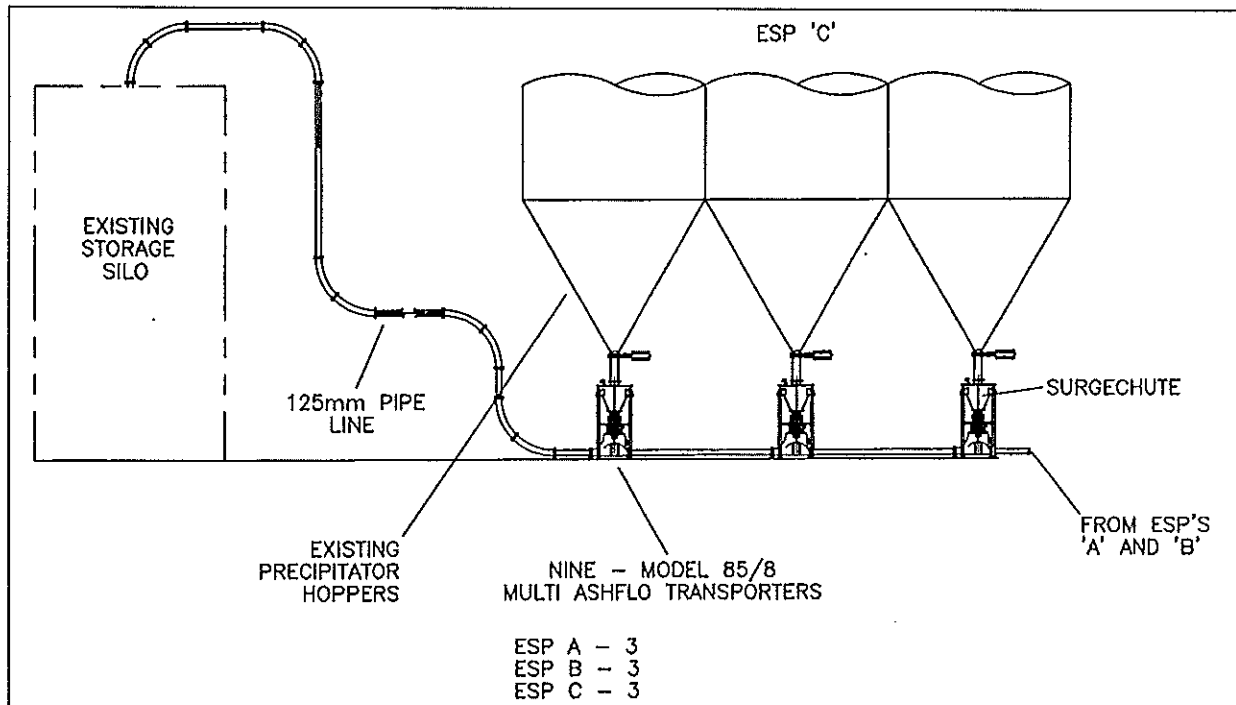
INSTALLATION DATE March 1998

APPLICATION Conveying of P.F.A. from an electro-static precipitator.

SYSTEM SUMMARY Nine x Model 85/8 Multi-Ashflo® transporters arranged on a common 125-mm conveying line.

- **SYSTEM OBJECTIVES**
 - A) Convey P.F.A. on a continuous basis with reliable operation.
 - B) Minimize pipe wear.
 - C) Low maintenance costs.
 - D) Easy retrofit to replace existing hydraulic system

SYSTEM LAYOUT



■ **MATERIAL CHARACTERISTICS**

MATERIAL	Pulverized Fuel Ash
BULK DENSITY (aerated)	850 kg / M ³
PARTICLE SIZE	100% below 100 micron
TEMPERATURE	200°C
MOISTURE CONTENT	Less than 1%
FLOWABILITY	Extremely fluid when aerated
ABRASIVENESS	High

■ **SYSTEM DESCRIPTION** The **Multi-Ashflo**® system is located on the electro-static precipitator of Unit #2. There are three electro-static precipitators: 'A', 'B' and 'C', each having four fields with three hoppers in each field. The first field hoppers remove 80% of the PFA from the gas stream, and it is these nine hoppers where the **Multi-Ashflo**® system is located. The ash is conveyed via the 125-mm pipeline to a single ash storage silo.

■ **SYSTEM PERFORMANCE**

Conveying rate	Normal: 20 tons/hour
	Maximum: 35 tons/hour
Conveying distance	171 M including 36 M vertical
Reception point	Single storage silo
Material velocity	4.4 M/S
Phase density	63
Average air consumption	8 NM ³ /minute

■ **SYSTEM ADVANTAGES**

- Proven equipment design ensures years of reliable performance and economy.
 - Pipeline boosters not required.
 - Inflation Valves provide long life with low maintenance costs.
 - Low material velocity provides for low maintenance costs.
 - System is compact, easy to install and operates in a fully automatic mode requiring no operator attendance.
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