



CASE STUDY

Modern materials handling solution installed at Eraring power plant, Australia

The situation

Eraring Power Plant, owned by Eraring Energy, is located near the town of Dora Creek, Australia. The plant started operation in 1981 with its first 660 MW boiler. By 1984 the plant's four 660 MW boilers were in operation.

In 2005 Eraring Energy decided to move forward with their Coal Combustion Product (CCP) Project that would ensure viability of the plant until at least 2032. This would include the replacement of the existing lean-phase conveying system which was limiting the plant's long term future.

The plant would require an environmentally friendly and cost effective solution to transport fly ash to the existing dam. It was also a requirement to reduce water usage at the plant thus increasing the quality of ash for resale and the availability of fine ash for delivery to existing buyers for use in their cement/concrete markets.

In addition, the project aimed at improving the overall reliability of the plant and ensuring the enhanced life expectancy of the existing ash dam.

Our solution

Clyde Bergemann Materials Handling (CBMH) in partnership with Clyde Bergemann Senior Thermal (CBST) in Sydney, Australia worked closely to address the plant's technical and commercial requirements.

Dense-phase conveying based on the well established ash vessel technology was implemented to cater for the handling requirements from the existing fabric filters. Coarse and fine ash is conveyed to intermediate booster stations or directly to the final silos for further utilisation. On demand fine fly ash is transported to the station's existing customer for utilisation in the concrete and cement industries. Alternatively, mixed ash can be diverted via the stainless steel storage silos to the ash pond 3 km away utilising dense slurry conveying technology which uses high pressure piston diaphragm pumps with low volumes of water to transport the wet ash over long distances.





90% reduction in transport water usage

Technical highlights

The project included the supply and installation of fly ash handling technology to work in conjunction with the existing fabric filter operating sequence which included the provision of:

- ash vessels
- pipework
- two stainless steel storage silos
- tanker filling station (dry and wet)
- High Concentration Slurry Discharge System (HCSD)
- high pressure piston diaphragm pumps for dense slurry
- centrifugal air compressors to provide motive air for conveying and control
- Dome Valve for frequent cycle to enable segregation of the coarse and fine ash produced during the filters various operating regimes.

Eraring technology technical details

Ash conveying rates	up to 208 tph
Conveying distances	50 - 700 metres
Pipe diameters (across site)	NB100 > 400 mm
Stainless steel storage silo (each)	1000 m ³
Tanker filling station	100 tph
Diaphragm pumps (40 bar)	273 m ³ /hr over 3 km
Centrifugal air compressors	4 x 1.1 MW

Benefits

- Tailored specification inline with customer's requirements and expectations
- Online installation of fabric filter equipment reduces overall installation programme allowing station to return to operation earlier than planned
- Plant life and availability was extended by more than 20 years utilising the existing ash dam area
- Long term life of the Dome Valve reduces overall maintenance requirements and cost to the station
- Complete scope of work offered from Clyde Bergemann Power Group of companies
- Previous experience of High Concentration Slurry Discharge systems incorporating well established and proven technologies
- Operate and maintain implemented by Clyde Bergemann Senior Thermal in Sydney, Australia

Reference extract

Country	Installation	Boiler units MW	Max capacity each boiler
Italy	Torrevaldaliga	3 x 120	150 tph
China	Yuhuan	2 x 600	97 tph
UK	Longannet	2 x 300	50 tph



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