Australian Coal Preparation Society

The Development of High Capacity Modular Coal Preparation Plants

18th February 2004
High Capacity Modular Coal Preparation Plants

Presentation Overview

- History and Origin of Modular Coal Preparation Plants
- ACT’s Development of Modular Coal Preparation Plant’s
- Equipment, Process and Design Concept Overview of Modular Coal Preparation Plants
- Benefits of Modular Coal Preparation Plants
- ACT’s Latest Innovations with Modular Coal Preparation Plants
High Capacity Modular Coal Preparation Plants
History and Origin

- 1950’s - British Development of the Blackett Barrel Washer largely used as a rewash facility.

- 1960’s - McNally Pittsburgh development of the “fixed dimensioned boxes” containing single processes.

- 1970’s - McNally / Kennedy Thompson continued with the Modular Concept with the Lemington No2 Facility and the introduction of the Stokes Hydrosizer MCPP’s

- 1980’s – British Development of the “Bulldog” DMC, the South African Coal Industry were Operating MCPP’s with Capacities up to 150TPH.
High Capacity Modular Coal Preparation Plants
History and Origin

- Late 80’s – Coal Consultants and Shaw Engineering Developed a 175TPH DMC, Fine Coal Circuit with Spirals for PA Bond & Co.
High Capacity Modular Coal Preparation Plants
History and Origin

- 1990’s – BMCH Designed and Constructed a 150TPH DMC MCPP Similar in Style to the British Bulldog (now residing at Nardell)
- ACT Designed and Constructed 350TPH DMC and Spirals Plant for BHPB’s South Walker Creek Mine.
High Capacity Modular Coal Preparation Plants
ACT’s Development of MCPP’s
High Capacity Modular Coal Preparation Plants
ACT’s Development of MCPP’s

- Following the SWC MCPP, ACT’s “High Capacity” MCPP design and concepts evolved.
- Chinese CHPP on the left 350TPH Capacity – ACT’s MCPP on the right 600TPH.
High Capacity Modular Coal Preparation Plants
ACT’s Development of MCPP’s

✓ The Chinese Coal Industries appetite for Coal Processing Technology required multiple MCPP’s in quick succession
High Capacity Modular Coal Preparation Plants
ACT’s Development of MCPP’s

- ACT’s first 700TPH Single Stream MCPP incorporating the largest available process equipment at the time:-
  - 1300mm DMC
  - 4200 x 6100mm Screen
The Modular Coal Preparation Plant Concept is suited to all of the accepted coal beneficiation processes used in today’s industry.

ACT has designed and incorporated into existing MCPP’s:-
- DMC Technology
- Dense Medium Bath Technology
- Jig Technology
- Fine Coal Spirals, TBS Technology
- Flotation
- Various forms of Ultra Fine Coal Dewatering Technology
Australian Coal Technology achieves high throughput capacity of our MCPP’s by incorporating the latest / largest technology available in today’s marketplace.
High Capacity Modular Coal Preparation Plants
Benefits of MCPP’s

✓ The Benefits of a MCPP from the Clients Perspective
  – Lower Capital Cost than Conventional Facilities
  – Shorter Lead Time than Conventional Facilities
  – Lower Maintenance Costs Than Conventional Facilities
  – Lower Power Consumption than Conventional Facilities
  – Small Footprint
  – Low Manning Levels
High Capacity Modular Coal Preparation Plants
Benefits of MCPP’s
High Capacity Modular Coal Preparation Plants

Benefits of MCPP’s

✓ The Benefits of an MCPP from a Project Perspective

– All off site fabrication
– Quick On Site Erection
– Short Commissioning Duration
High Capacity Modular Coal Preparation Plants
Latest Innovations by ACT

- 1000TPH Single Stream Module Incorporating:
  - 4.3 x 8.5M Screens
  - 1500mm Dense Medium Cyclone