

Xstrata Zinc



SAG Mill Power / Load Control

Fast Facts

Customer:
Xstrata Zinc

Location:
Mt Isa, Australia

Project:
Power/load control strategy
for the SAG mill in Zinc /
Lead Concentrator

Date:
2007

Plant Details:
Lead / Zinc Concentrator

Control System:
Yokogawa CS3000 DCS



Project Overview: The new SAG mill at Xstrata's Zinc/Lead Concentrator had not been performing to expectation. The mill was operating below design power (2100kW), and at lower rock loads – leading to reduced throughput and a shorter liner service life. Operating the mill manually at the higher power and load required high levels of concentration and skill by the operators – something not sustainable over a 12 hour shift.

MIPAC Scope: MIPAC provided services to design, test, configure and commission a power/load control strategy for the SAG mill – specifically:

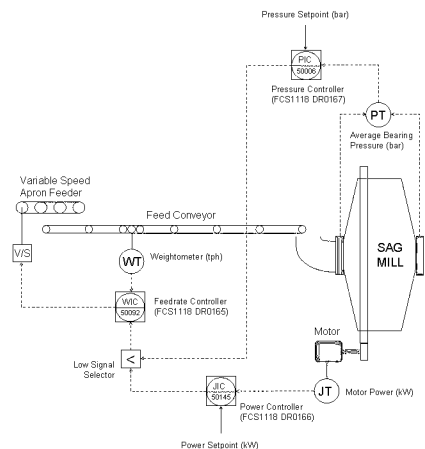
- Preparation of a Control Philosophy Document
- DCS programming (control logic, graphics and operator interface)
- Testing and commissioning of control strategy
- Commissioning report

Technical Solution Highlights: MIPAC's solution manipulated feed rate using three key technologies:

- A constraint control strategy which meets operating objectives, but keeps the process operating within a safe envelope.
- Model-based control technology to account for long process dead times.
- Loop-tuning and commissioning skills.



7 Day Trend



Results:

The result is a stable robust control strategy which has the confidence of the operating staff. By allowing the SAG mill to be operated safely at higher power draws the feed rate has increased by 15 tonnes per hour. Assuming a Zn price of \$3,300 (AUD) per metric tonne and a head grade of 6%, this equates to \$70,000 (AUD) of extra metal entering the concentrator over 24 hours.