



Grinding Circuit Control

Control Strategy Development · Instrumentation and Control System Audit · Design, Implementation & Commissioning · Operator Training · Performance Benchmarking



Making the most of the *Daily Grind*

Does your grinding process display wide swings in performance? Are you getting the most out of your installed grinding capacity? Are you able to run your mill consistently at its constraints or at optimum energy consumption? Are you over or under grinding? Are you over-loading your mills? Have you considered the benefits of minimising variation to your downstream flotation circuits – *particularly density and particle size*?

Despite elaborate ore blending schemes, grinding circuits are typically exposed to significant variation in ore feed characteristics. Changes in grade, ore competency and mineralisation translate to changes in grinding circuit performance. These variations in performance represent lost opportunity and normally reflect in lost recovery and low product grade (poor metallurgy).

Even if your plant has a modern automation system, with all controllers running in 'automatic', are you still expecting mill operations to make the required set-point changes? Even the best teams cannot maintain 24/7 vigilance, and will tend to operate the process away from the limit to compensate for this. Bring your grinding circuit to the next level with a grinding control strategy which is applied consistently. It is like having your best operator every shift!

Rather than immediately recommending expensive instrumentation and complex control platforms, our plant experience has demonstrated that gains can often be made merely by using what you have in a better way. We have no incentive to complicate your control infrastructure unnecessarily, and will implement effective grinding controls that balance your need for performance, robustness and maintainability.

Keeping it Simple

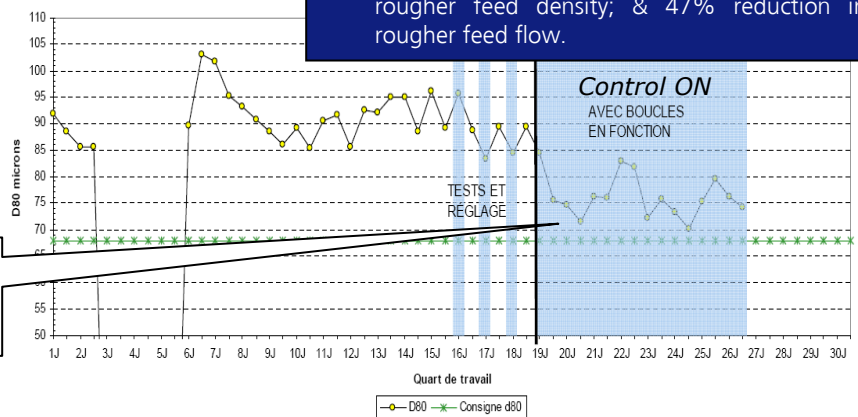
- Solutions are to the level of complexity that you need and that is appropriate.
- Utilize existing control system infrastructure.
- Controls can be implemented on ruggedized, field mountable hardware if required.
- We keep your mill operations personnel involved and engaged at all stages of development & implementation.

Track Record

- SAG Mill: Controls Feed-rate, Water Addition & Crusher Gap. Result: 4% increased throughput.
- Rod/Ball Mill Circuit: Maximises feed rate while respecting product grind size. Result: Increased maximum tonnage by 8% and increased mill energy efficiency by 7 & 7.5%.
- Ball Mill: Controls cyclone density and circulating load. Result: Decreased grind size by 10 microns.
- Rod/Ball Mill Circuit: Strategy allows balancing of throughput with desired grind size & less mill overloads.
- PBM/SBM (2 staged) Circuit. Result: 72% reduction in mill feed rate; 58% reduction in rougher feed density; & 47% reduction in rougher feed flow.



Optimising Mill Feed Set-point
(Strathcona Mill – Xstrata Ni)



Optimising Cyclone Overflow (D80)
(Raglan Mill – Xstrata Ni)

Contact Us...

www.myxps.ca

|Address| Process Control Group, XPS Centre, 6 Edison Road, Falconbridge, Ontario, P0M 1S0, CANADA
 |Phone| +1 (705) 699 3400 Ext. 3463 / 3442 / 3757 / 3427 |Fax| +1 (705) 699 3431
 |E-Mail| processcontrol@xstrataprocesssupport.ca or info@xstrataprocesssupport.ca

