

PRODUCT APPLICATION NOTE
SN0106

Industry: Primary Metal Mining

Type of Application: Level monitoring of concentrated nickel and copper

Optech Equipment Used: Sentinel 3100

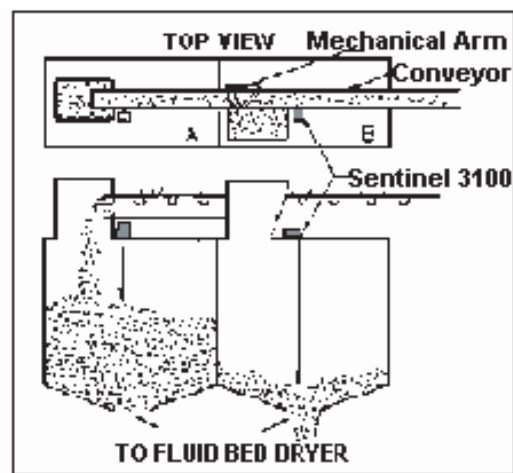
Application Description: Monitor the levels of nickel/copper concentrate in a 200 ton wet bin.

A large mining company required a method of monitoring the levels of concentrated nickel/copper in adjacent wet bins. When ultrasonic sensors proved unsuitable, Optech's laser-based level monitors were installed. In this application, as an overhead conveyor fills Bin A, Optech's Sentinel 3100 monitors the bin level and forwards the corresponding 4-20 mA analog signal to the local programmable logic controller (PLC). When the PLC detects the desired level in Bin A, it initiates a mechanical diverging arm that redirects the concentrate from the conveyor into Bin B. As this occurs, Bin A is emptied into a fluid bed dryer. Once the concentrate has dried, it is placed in a flash furnace with oxygen, where it becomes molten metal. The coordinated action of the bins filling and emptying is critical to the smooth operation of this smelting plant.

Optech's level monitors were able to handle the dusty environment, the material's angle of repose, and the irregular shape of the bins. The customer was very satisfied with the accuracy and robust nature of Optech's Level Monitors.

**KEY ADVANTAGES OF LASER TECHNOLOGY
IN LEVEL MEASUREMENT**

- Measurements unaffected by temperature variations
- Measurements unaffected by angle of repose
- Measurements unaffected by irregular bin shapes
- Measurements unaffected by moderate to heavy amounts of dust
- Measurements unaffected by background noise
- Non-contact measurements
- Short setup time with no calibration required



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