

Australian Mining

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Look, but don't touch

Controversial uranium legislation leaves industry guessing
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According to industry professionals, the Australian uranium industry is on the edge of something very big. Paul Hayes reports.

Uranium mining in Australia has always been a controversial issue.

Despite having a significant proportion of the world's high-grade uranium reserves, Australia contributes a relatively small amount to the global supply.

But as more of the world moves towards nuclear power, demand for uranium is set to increase significantly and many in the Australian industry feel that the country has to take a big step forward in terms of its

uranium production and exports.

"It is just ridiculous that Australia owns more than 30% of the world's uranium resources and produces so little of the world's supply," president and chief executive Australian exploration company Equinox Resources Craig Williams told *Australian Mining*.

While the Rudd Government's 2007 overturning of Australia's long held ban on increased uranium mining did result in increases in exploration and

production, it has also confused the situation by allowing each state to make its own decision in terms of production. This has created the awkward situation of having a uranium rich State in Queensland that allows its reserves to be explored, but not to be mined.

According to industry professionals, the Australian uranium industry is on the edge of a very important time in the global market and must be ready to take its place within it.



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"I thought mining was tough until I saw Aprilla Grids"

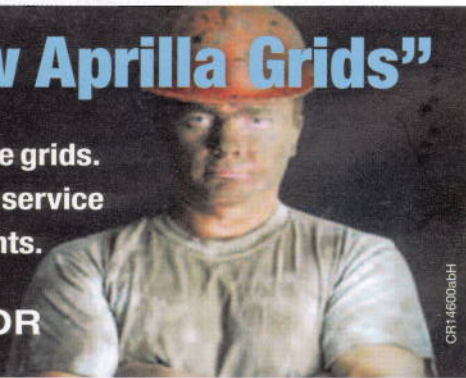
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Cosmos receives a new nickel circuit

Xstrata Technology Global Marketing Manager – Mineral Processing
– Steve Smith writes for Australian Mining.

Xstrata Nickel Australia (XNA) has recently taken charge of Xstrata Technology's latest IsaMill and Jameson Cell installations operating at the Cosmos Mine in Western Australia.

The mine consists of a number of high grade massive nickel sulphide deposits, which produce a 20% nickel concentrate grade.

The Cosmos concentrator is increasing throughput, and as a result need more flotation capacity and a regrind stage.

An increase in primary feed to the plant by 80% from the upgrade, meant the feed to flotation would coarsen, from 100 µm to 150 µm (P80 sizing) resulting in the need for a regrind stage to liberate the nickel sulphide composites.

The increasing throughput

required an increase in flotation capacity of the circuit.

Instead of adding more of the existing conventional flotation machines, a small Jameson Cell was installed at the head of flotation.

The Jameson Cell was designed to treat the flotation feed stream from primary grinding, and "flash" float 20 to 35% nickel recovery to the final nickel concentrate.

The concentrate is washed using the Jameson Cells' in froth washing system, which washes out entrained gangue minerals, such as MgO, from the concentrate.

The Jameson Cell used in this duty was the Z1600/1, a small diameter cell that uses one downcomer to treat the small volume stream, which has

an attached recycle mechanism allowing steady operation of the cell using a simple overflow mechanism.

By taking better-than-final grade concentrate out at the head of flotation, it enabled the conventional scavenging banks treating the Jameson Cell tailings to handle the extra throughput and target the slower floating nickel sulphides.

Coarsening up the feed to the circuit also resulted in larger scavenger concentrate sizing.

A small regrind mill was needed to liberate the nickel sulphide from MgO and other gangue composites.

For this duty, a small M500 IsaMill was installed. This mill was designed to use 2 mm ceramic media, Keramax MT1, supplied by Magotteaux.



Xstrata Technology's latest IsaMill and Jameson Cell installations operating at the Cosmos Mine in Western Australia.

The 220 KW IsaMill was designed to reduce the rougher concentrate from a F80 of 40 µm to a P80 of 18 µm.

The use of the Jameson Cell allows for the fast floating nickel sulphides to be recovered

as a final concentrate. To read more about the circuit, visit www.miningaustralia.com.au.

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