CleanSpace2™

EVERY BREATH COUNTS

CASE STUDY

QUEENSLAND NICKEL AND COBALT REFINERY

Positive pressure respiratory protection made simple

Queensland Nickel illustrates the challenges large industrial sites have when protecting their staff from hazardous airborne contaminants in the workplace. Based in the north east of Australia, the refinery employs 1,000 people and is a global leader in the production of high quality nickel and cobalt. The nickel and cobalt-bearing laterite ores are dried, ground, roasted and leached before being separated for sale to a global market. Despite system controls in place, the extraction process generates rogue nickel dust emissions of soluble and insoluble nickel forms with differing exposure standards requiring controls around personal respiratory protection.

Following an internal safety review, the **Queensland Nickel**'s occupational hygienist examined a broad range of respiratory options with a focus on high levels of protection. Trials included passive P3 half masks through to Powered Air Purifying Respirators including loose and tight fitting headtops.

THE CHALLENGE

The challenge at the **Queensland Nickel's** site was maintaining compliance and productivity for staff wearing personal respiratory protection due to demanding requirements:

- **LONG PERIODS OF WEAR AND FLEXIBILITY:** Operators and maintenance staff needed protection for 6 hours (some up to 8 hours) on a daily basis wearing RPE. While, managers and engineers required RPE for short periods of time but needed ease of donning/doffing as they moved through the contaminated areas on site.
- **MOBILITY AND HIGH EXERTION TASKS:** The plant covers an area the size of a football field and has a high point of 6 levels up that can be reached via stairways. The physical layout and the vast network of kilns, conveyors and elevators needing routine checks, adjustments and sampling meant operators are highly active and require mobility around the equipment.
- **EXTREME WORKING TEMPERATURES:** Industrial rotating kilns contribute to temperatures in and around the plant of 45C.

CONTINUED ▶

S005-7173 Rev2

THE SOLUTION

Negative pressure masks found staff struggling with acute discomfort from over-tightened straps and heat under the mask when worn for several hours. Many of the belt mounted positive pressure systems proved too restrictive for normal day to day tasks and were too bulky and difficult to carry when operating machinery or temporarily moving in and out of contaminated areas.

"My maintenance and operating teams complained that the battery packs made driving forklifts difficult and head tops limited their head movement which is important when running equipment checks" outlined *Matthew Topp, QNI Manager - Final Nickel*.

CleanSpace Respirators have been at **Queensland Nickel** for over a year and are worn by staff every day. The original trial of CleanSpace found it suited the team across the range of tasks, supporting staff to carry out the daily job with ease.

THE RESULT

The powered nature of the CleanSpace ensured the high level of protection **Queensland Nickel** management were after and delivered fresh air to the wearer thus reducing risks of heat stress and respirator fatigue.

"The staff reported good battery life, comfort and easy transition from their traditional mask to the CleanSpace. The built-in battery and compact neck mounted unit meant it was easy to carry around and clip on before entering controlled areas." explained Matthew Topp.

Over time, **Queensland Nickel** noted additional benefits in using the CleanSpace Respirator such as:

- Long filter life and peak load filter alarm (which alerts the wearer when to change filters ensuring the full life is achieved from each filter)
- Ease to clean the mask and low of maintenance on the unit. Toughness and durability. Even with daily use and long wear, the CleanSpace kits remain in good condition.

Importantly, **Queensland Nickel** has seen no drop off and consistent compliance with staff wearing CleanSpace. Matthew contributes this to the additional comfort of fresh air and on-demand air flow when staff have high exertion work or working in hot temperatures. Since issuing CleanSpace to its staff, other sites who experienced high dust loads and developed blocked half masks, have adopted CleanSpace.

CleanSpace2 the next generation in personal respiratory protection.

CleanSpace2™
EVERY BREATH COUNTS

T: +612 8436 4000
F: +612 8436 4020

UNIT 3, 19 HOTHAM PARADE
ARTARMON NSW 2064 AUSTRALIA

ABN 24 146 453 554
WWW.PAFTEC.COM