

CASE STUDY : Lighting Plant Automation @ Jellinbah Mine

Problem

The operation and maintenance of plant equipment such as lighting plants is a costly, resource-intensive activity. Jellinbah Mine identified this as an area of concern impacting the mine's operational costs and efficiencies. Physically attending equipment out in the field for start/stop or fault finding was consuming precious resources. Standard mine operations requires equipment to be frequently moved during shifts. Locating each piece of equipment at the start and end of shift for activation or refuelling was proving at times to be an unnecessarily resource-intensive exercise.

Solution

Jellinbah worked in conjunction with iVolve Pty Ltd to deploy *Plant Manager* to the site's 22 lighting plants. The system is fitted to existing plant equipment to add location tracking, system monitoring, automatic start/stop and remote control capabilities.

Receiving real-time data from the lighting plants enables immediate responses for time-sensitive issues. Maintenance personnel have immediate knowledge of which plants require maintenance and their location at any given time.

"Our guys know the state of every lighting plant just by looking at the iVolve screen. They can then see exactly where each one is to be able to address issues quickly instead of wasting time driving around to each device unnecessarily."

Adrian Schmidt,
Maintenance Engineer,
Jellinbah Mine.

The automatic control of Lighting Plants had an immediate effect on reducing costs associated with fuel and labour. Prior to automation, each lighting plant needed to be manually switched on and off requiring four man-hours each shift for personnel to drive to every device at sunset and sunrise. By simply adding the



functionality to automatically switch devices on and off at a set time, the devices were no longer running for extended periods saving both labour and fuel. In addition, when operating within network coverage, the units can be remotely started and stopped using the iVolve software back in the site office. To ensure a safe operating environment, a prestart siren and beacon was installed due to the automated operation of the equipment.

“Fuel and personnel are two of the three big costs affecting the bottom line. By making our operations run more effectively with the implementation of innovative technology by iVolve, we’ve been able to see significant cost reductions.”

**Heath Sanders,
Maintenance Superintendent,
Jellinbah Mine.**

Feasibility studies for the project revealed cost savings of more than \$270,000 per annum would be realised by implementing iVolve’s Plant Manager for lighting plants across Jellinbah.

Background

Jellinbah have worked closely with iVolve since 2011 on the site-wide deployment of the full iVolve solution for productivity improvement, cost reduction and risk minimisation.

Deployment of the *Proximiti* solution for vehicle collision awareness has greatly reduced the risk of vehicle collisions for operators and equipment.

Jellinbah’s implementation of *Production Manager* now enables in-cab operator feedback for truck loading increasing load accuracy. Obtaining real-time production data from all vehicles and equipment site-wide has supported in-shift decision making ability by supplying key personnel with relevant data to support their decisions.

Costs and operational efficiencies associated with late detection of vehicle issues were addressed by *Maintenance Manager*. This module now provides maintenance staff with key machine health data to pre-empt potential failures before they occur. Through dashboards and reports, staff know the health of the fleet at all times to improve vehicle utilisation.



Jellinbah Mine

Jellinbah Mine is located on the Tropic of Capricorn, near Bluff and the product coal is hauled by rail to the Port of Gladstone, approximately 300 km from the mine.

The mine has been in operation since 1989. It is an open cut operation with overburden drilling and blasting, followed by conventional removal with truck and shovel and dozer push. Jellinbah Coal is a low volatile bituminous coal with high specific energy, low ash and sulphur. With these properties it is ideally suited to pulverised coal injection, blending for coke making and special coal boilers. The mine has a current production capacity of approximately 4.8Mtpa.

Jellinbah Group has a 70% interest in the Jellinbah operation and Marubeni Coal and Sojitz Coal each hold 15% interests.

www.jellinbah.com.au

iVolve

Established in 1995, iVolve is an Australian company that develop and manufacture intelligent industrial wireless technologies. The company's real-time data management solutions are tailored to cater to the demands and needs of clients in the mining, construction and energy industries to improve production outcomes, increase safety and decrease maintenance costs.

iVolve's solutions for Production, Assets, Maintenance and Safety (PAMS) is supported by the Nexis hardware platform. Nexis, a

ruggedized mesh wireless router and industrial PC, is the core of each iVolve deployment. It is used to establish a stable, site-wide mesh network and interface to on board machine systems.

www.ivolve.com

For further information, contact info@ivolve.com or head to the website www.ivolve.com.

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