

CAPE LAMBERT CONTROL SYSTEM UPGRADE

Robe River had been operating the Cape Lambert port facility with a mixture of older PLC devices and hardwired logic. With the system upgrade project, Applicon consolidated and improved the plant controls, operator interface and introduced high level systems.

Project Name

Cape Lambert Control System Upgrade

End User

Robe River Iron Ore Associates (North Ltd)

Project Location

Dampier, Pilbara, WA

Services Provided

Control System Supply & Installation
Route Sequencing System
Downtime Accounting System

Key Technology

GE Fanuc 90-70 PLC
Citect SCADA HMI
DEC Multiswitch 900
FDDI

Project Value

\$3M

Completed

1999

PROJECT SUMMARY

Robe River Iron Ore Associates (then owned by North Ltd - now part of Rio Tinto Iron Ore) commenced operations at Cape Lambert in 1972 with a 5MTpa capacity. The facility had been progressively upgraded until in 1998 the capacity had reached 30MTpa. As part of the overall upgrade regime, Applicon was contracted by Robe River to upgrade and improve the plant controls, specifically to implement improved technology and enable production increases.

SCOPE OF WORK

With the intention of improving fault recovery times and improving system availability, Applicon delivered new GE Fanuc 90-70 PLC and Citect SCADA HMI systems for improved plant control, and further enhanced the operation through the development and implementation of a Plant Data Capture System (PDCS), built within the same Plant Control System and which included a downtime accounting system (DAS), historical reporting and performance and throughput optimised route sequencing. The project further enhanced control and operator visibility by bringing three areas which had previously been operating as "islands" (coarse ore, processing plant and ship loading) into the same plant-wide infrastructure and using the same equipment instead of disparate technologies.

BUSINESS IMPROVEMENTS

Applicon's implementation of this project provided several benefits, key among them being:

- Virtual elimination of production downtime attributable to control system communications faults, which had previously been a major concern to the operation.
- Removal of three "islands" of operation, and consequent rationalisation and integration of equipment types. This allowed integrated production management and contributed to a significant increase in production.
- A major reduction in rectification time for technical faults, because the new technologies and standardisation of



Quality
ISO 9001

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programming and diagnostic aids allowed electricians to pinpoint faults and errors and respond more quickly.

- Project installation and commissioning work took place during pre-scheduled maintenance periods and thus was achieved with no production downtime.
- For the first time in WA, wireless communications were established to the stackers, reclaimers and shiploaders, bringing multiple operational and maintenance improvements.
- Wireless communications to the ship loader enabled two-way visibility between the wharf and the process plant.
- The PDCS Downtime Accounting System allowed operations staff to direct and plan maintenance efforts to address actual problems and reduce costs.

At the time, using the DEC Multiswitch 900 FDDI equipment was a unique implementation of such leading edge technology in an industrial environment. Applicon's robust network implementation of the self-healing ring successfully avoided production losses on more than one occasion when the network remained operational in spite of major fibre cable damage by vehicles on site.

TECHNOLOGIES

- Citect HMI (now Schneider CitectSCADA)
- DEC Multiswitch 900 Ethernet
- Fast Ethernet
- FDDI Backbone
- GE Fanuc 90-70 PLCs
- Approx. 20,000 tags

ABOUT APPLICON

Applicon is an engineering company specialising in Process Automation & Control, Communications, Network Integration, Renewable Energy Systems, Power & Water, Security and Fibre Optic technologies. Our ISO 9001:2000 certification and engineering discipline means we approach technology using a structured and consultative methodology, to ensure the solution achieves the desired business outcomes.

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