

WEST ANGELAS IRON ORE PROJECT CONTROL SYSTEM

Applicon successfully participated in the West Angelas project through the provision of communications, control and automation equipment, design and programming of all aspects of networking, plant and port controls, from network infrastructure through to drive logic and sophisticated production management and route sequencing.

Project Name

West Angelas Iron Ore
Project Control Systems

End User

Robe River Iron Ore
Associates (North Ltd)

Project Location

West Angelas and
Cape Lambert
Pilbara, WA

Services Provided

Networking &
Communications
Control Systems
High Level Production
Systems

Key Technology

GE Fanuc 90-70 PLC
Modicon Quantum PLC
CitectSCADA
DEC Multiswitch 900 FDDI
Cabletron Gigabit Ethernet

Project Value

\$7M

Completed

Jan 2002

PROJECT SUMMARY

Robe River Iron Ore Associates (then owned by North Ltd and subsequently purchased by Rio Tinto Iron Ore) commenced the West Angelas Iron Ore Project in the late 1990's with a view to adding 22MTpa production capacity to their Pilbara operations. The overall project value was \$1.5b, with funding distributed evenly between the new mine, additions to the rail network and major additions to the Cape Lambert port facility. The acquisition by Rio Tinto simplified the rail requirement and allowed adjustments to the final expenditure. Due to our technical capabilities and commercial attractiveness, Applicon was pleased to be directly contracted to Robe River to provide a high level process control and automation systems and services at both the West Angelas mine site and at the Cape Lambert port.

SCOPE OF WORK

Applicon's scope was to design and deliver PLC, SCADA and communications systems at West Angelas and Cape Lambert as well as associated project management. Applicon supplied Modicon Quantum PLCs to the mine site in order to meet Rio Tinto Iron Ore inland equipment standards, with Cabletron Gigabit-based industrial Ethernet products, while at Cape Lambert GE Fanuc 90-70 PLCs were used and the network was based on DEC 900 switched FDDI equipment, providing a fault tolerant dual counter-rotating self healing ring. Citect SCADA HMI servers and clients were installed at both sites.

Applicon delivered not only the basic scope of programming PLCs and HMI displays, but also:

- Overall system design and engineering of control and automation systems
- Overall system design and engineering of communications networks
- Procurement, installation and commissioning



Quality
ISO 9001
SAIGLOBAL

- Standardisation of HMI project attributes, including provision of information to third party vendors
- Standardisation of drive logic, including program code
- Standardisation of sequencing logic, including program code
- High level automation and route sequencing
- Delay accounting systems
- Data historian systems
- Project Management
- As-built drawings and documentation

Applicon's control and communications scope covered all fixed plant and car dumpers on the project, including the new stockyard and car dumper at the Cape Lambert port.

BUSINESS IMPROVEMENTS

As a key element in cost reduction on this project, Applicon was able to build on previous standardisation work which had been successful several years previously as part of the Cape Lambert Upgrade Project. Significant use (and re-use) was made of standard methods and software elements, including existing user-defined function blocks for drive logic, route sequencing functions and hatch loading software. This disciplined aspect of the project implementation achieved significant technical efficiencies and cost savings for Robe River. Further, the network design meshed closely with previous designs and allowed a seamless and quick connection between the older, existing systems and new equipment installed by Applicon and others as part of this project. The use of leading edge communications technologies provided improved overall visibility and controllability of the plant.

TECHNOLOGIES

- Citect HMI (now Schneider CitectSCADA)
- DEC Multiswitch 900 FDDI Ethernet
- Cabletron Gigabit Ethernet (now Enterasys Systems)
- Modicon Quantum PLCs (now Schneider)
- GE Fanuc 90-70 PLCs
- Approx. 40,000 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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