

# Coal Yard Material Handling Controls Really Stack Up

## Common Requirement

Coal, limestone, grain, or gravel—bulk material handling is a common requirement in manufacturing and power generation facilities.

Most involve various configurations of buckets or wheels, conveyors and drives, level and speed sensing, safeties, and scales.

They require remote monitoring and control combined with safe and reliable operation.

ECS Solutions' engineering services help plants meet these operating requirements reliably and cost-effectively.



## Controls Expertise, Please

Though large OEMs supply the original systems, engineers often call on ECS Solutions' expertise to design and implement control system upgrades for more efficient and effective operation. They know from experience that ECS is—

- Knowledgeable and innovative
- Responsive to their needs
- Thorough and complete
- On time and under budget
- Reliable with local support

## Technology Stacks Up

ECS was recently called upon to upgrade the controls for a coal yard stacker-reclaimer system.

An Allen-Bradley® 1397 digital DC drive replaced the existing analog drive for boom slew (horizontal clockwise and counterclockwise rotation) control.

The analog drive used for travel (linear position over the feeders) was replaced with an Allen-Bradley® 1336 Plus II digital AC drive.

The drive replacements resulted in more accurate speed and position control and reduced maintenance.

Digital encoders replaced difficult to maintain cam limit switches, resulting in more reliable and accurate position sensing.

Modicon® Quantum™ PLCs and I/O replaced the existing Modicon® 984 PLCs and I/O.

ECS developed an Intellution® iFIX® PC workstation at the coal panel and a Telemecanique® Magelis™ operator station on the stacker.

Existing controls in the operator's cab atop the boom remained functional, but with the addition of the Magelis™ station, operators now rarely need to climb to the cab.

Cameras controlled from the coal panel HMI were placed at strategic locations to view stacker and boom location and possible obstructions.

Modbus Plus communications was used between the PLC and Magelis™ operator station.

Innovative and cost-effective wireless Ethernet communications using spread spectrum 2.4 GHz radios replaced hard to maintain slip-ring and cable communications between the stacker and coal panel HMI.

With this system, ECS helped the customer achieve more—

- Production with less manpower
- Reliability with better technology
- Responsive controls with high-speed wireless communications
- Safety with video monitoring
- Profits with lower costs

## Let ECS Help You Do More

This coal handling system is just one example of the engineering services ECS Solutions provides for industrial control and information systems in both power generation and manufacturing facilities. Let us help you do more with—

- Design and drafting
- Panel fabrication
- PLC and HMI programming
- System integration
- Training