

Food Processing Automation

Zambia

SORGHUM CLEANING & DE-STONING PLANT CONTROL SYSTEM

The Challenge

A food processing facility required a reliable automation solution to support its sorghum cleaning and de-stoning process. The operation consisted of multiple process stages requiring coordinated equipment control, reliable material flow, and consistent plant performance.

The client faced several operational requirements:

- Process Coordination - Multiple machines operating as an integrated process, Equipment interlocking and sequencing requirements, Consistent material flow throughout the plant.
- Operational Reliability, Minimise unplanned stoppages, Improve process stability, Ensure reliable operation of motors and process equipment
- Plant Visibility - Improve operator control over the process, Simplify fault identification and troubleshooting, Provide clear operational feedback
- Future Production Requirements- Scalable automation platform, Capacity for future modifications and expansion

SPG Solution

PLC-Based Process Control

Custom automation system designed to coordinate cleaning and de-stoning operations.

Process Automation

- PLC programming and control logic development, Equipment sequencing and interlocking, Automated process control, Operational fault handling

Motor Control Integration

- Coordination of process motors, Start-up and shutdown sequences, Equipment protection strategies, Reliable process operation

Operator Interface

- Simplified operator interaction, Clear process status indication, Fault and alarm monitoring, Improved operational control

Control Panel Manufacturing

- Custom industrial control panel, Structured wiring and documentation, Industrial-grade components, Designed for maintainability and reliability

Future Expansion Considerations

- Spare capacity incorporated where required, Flexible automation architecture, Support for future process enhancements

SPG Results

Improved Process Reliability

- Stable operation across multiple process stages, Improved equipment coordination, Reduced operational interruptions

Operational Efficiency

- Automated equipment sequencing, Reduced manual intervention, Improved process consistency

Enhanced Plant Visibility

- Improved operator awareness, Faster fault identification, Simplified troubleshooting

Reduced Maintenance Burden

- Structured system design, Easier fault diagnosis, Improved maintainability

Production Benefits

- Consistent material handling, Reliable plant operation, Improved overall process performance



Technical Highlights

- PLC-based automation system
- Equipment sequencing and interlocking
- Motor control integration
- Industrial control panel manufacturing
- Food processing automation
- Process reliability improvements

Client Impact

SPG Control & Automation delivered a practical automation solution that improved the reliability and consistency of the client's sorghum cleaning and de-stoning process. Through coordinated equipment control, improved visibility, and robust system design, the facility gained a stable automation platform capable of supporting efficient day-to-day operation and future growth.