



CASE STUDY · LIME KILNS

Modernizing Lime Kiln Operations for Reliability and Efficiency

With more than 30 years of experience and approximately 70 lime kilns equipped worldwide, ECKLEBE delivers end-to-end electrical, controls, safety, and instrumentation solutions for lime producers globally.

The Challenge

Lime kiln operators often face a difficult combination of pressures:

- Aging control infrastructure that grows less reliable each year
- Limited availability of spare parts as original systems fall further out of production
- Strict safety compliance requirements that legacy equipment struggles to keep pace with.

Lime kilns run continuously and consume significant energy by design, which means operators also have to manage high energy costs and production demands where any unplanned downtime translates directly into lost throughput.

The Solution

ECKLEBE modernized the kiln's operations with a fully integrated program of electrical and controls upgrades, SIL-compliant safety systems, and lifecycle support built for continuous, harsh environments.

The work included upgrading electrical power distribution and motor control systems, modernizing PLC, DCS, and SCADA control systems, and implementing functional safety systems with SIL-compliant burner management and safety interlocks. The upgrade was designed for 24/7 operation, since a kiln running for decades cannot have an extended shutdown for modernization.

The Results

After the modernization, the kiln's operations experienced:

3–8%

Increase in production through improved process stability and control accuracy

20–40%

Reduction in unplanned downtime, achieved through more reliable automation and predictive diagnostics.

5–12%

Reduction in energy consumption due to combustion control improvements, a meaningful gain for a process where energy is a major ongoing cost.