

Blue Ridge Case Study: Modernizing a Critical Case Packing Line Under Pressure



The Challenge

A popcorn producer needed to relocate a legacy case packing line to its primary facility. The line, which placed bottles of popcorn kernels into shipping cases, was essential to maintaining production—but relied on obsolete Allen-Bradley PLC-2 and SLC150 controllers that had been out of production for more than 20 years.

There was no simulation capability, and no backup if the line failed. Debugging had to happen live on the equipment—adding risk and time. Internally, the plant lacked the automation expertise and staffing capacity to manage the controls retrofit. And with union labor limitations, even scheduling work was complex.

The only alternative if the line didn't come up on time? Manual case packing—expensive, slow, and unsustainable.



The Solution

Blue Ridge mobilized immediately. A dedicated lead engineer and supporting field team took charge of both the relocation and modernization phases of the project.

Phase 1

Relocation & Startup Support

Backed up and organized all PLC and HMI programs.

Created updated wiring diagrams and documented all hardware.

Assisted electricians in safely rewiring machinery at the new site.

Updated power distribution and network drawings for maintenance planning.

Stayed onsite through placement and commissioning until the line hit production targets.

Phase 2

Controls Modernization

Replaced obsolete controllers with a centralized Allen-Bradley ControlLogix PLC.

Used an Ethernet/IP encoder to modernize motion control and camming.

Fully rewrote all control logic, leveraging Blue Ridge's internal PLC-2 test lab for simulation.

Designed a “master PLC” architecture to enable seamless future expansion via networked controls.

Debugged and commissioned the system on a tight timeline, with only one return visit needed for feature tweaks post-startup.

Project Highlights

Zero production delays

Live testing and real-time debugging ensured production resumed smoothly without lost shipments.

Obsolete control systems modernized

Replaced Allen-Bradley PLC-2 and SLC150 with a centralized ControlLogix PLC for long-term support and scalability.

Integrated plant systems

Entered work in SAP CMMS, provided DeltaV troubleshooting, and trained plant engineers on-site.

Critical line, no margin for error

No backup available—downtime would have forced costly hand-packing of thousands of popcorn bottles.

Fast-track implementation

Entire retrofit—including rewiring, programming, and startup—completed in just 2 weeks.

Embedded engineering support

Blue Ridge staffed two departments, managed daily work orders, and filled coverage gaps with flexible, experienced technicians.

Long-standing partnership, proven results

The popcorn producer's biggest automation project to date—executed by a partner they've trusted for over 10 years.

The Outcome



With Blue Ridge's help, the customer avoided costly downtime, maintained production, and brought an outdated but mechanically sound machine into the modern era. The case packer now runs better than it did when new—faster, more reliable, and fully integrated with plantwide systems.

In the process, Blue Ridge became a vital extension of the maintenance team:

- Staffed two departments during internal shortages
- Completed daily work orders and emergency electrical support
- Logged work into the plant's SAP CMMS and provided daily shift reports
- Offered training and DeltaV troubleshooting support for plant engineers

The result?

A successful retrofit delivered under pressure, on time, and with long-term value built in.

Automate with Blue Ridge

From reducing arc flash risk to modernizing infrastructure, Blue Ridge's electrical engineering solutions are designed to keep your people protected and operations optimized.

Let's modernize what matters—together.

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