

# Blue Ridge Case Study: Modernizing a Critical Production 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

## 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.

## 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.

## 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 plant engineering team by:

- Supporting the obsoleted equipment until the upgrade was completed
- Providing a turnkey solution involving multiple trades
- Improving machine visibility and features for greater flexibility and ease of use
- Architecting the control system for future expansion
- Completing the project on time and on budget



## The result?

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

## Automate with Blue Ridge

From modernizing obsoleted systems to installing new systems, Blue Ridge's automation solutions are customized to fit our clients exact needs while delivering immediate and long-term results.

Let's modernize what matters—together.

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