Boosting Process Safety and Efficiency with Intelligent Valve Automation

Industry: Retail & eCommerce

Client: Chemical Manufacturing Plant, Central Europe

The Challenge

- ✓ Manual valve control in hazardous zones
- ✓ Inconsistent batch processing and delays
- ✓ Safety risks & audit compliance gaps
- ✓ No centralized valve data or logs

Our Approach

We conducted a **Time & Motion Study to evaluate manual valvesequences** and operator risk exposure. Based on findings, we designed an automated valve system with:

- ✓ Electric/pneumatic actuator retrofits
- ✓ PLC + DCS integration for sequencing
- ✓ Emergency shut-off & position sensors
- ✓ Digital audit trails for ISO compliance

Key Solutions

- ✓ Smart Valve Sequencing Automation
- ✓ Unified HMI with Emergency Override
- ✓ Compliance-Ready Valve Logs
- ✓ SCADA & MES Integration for Valve Insights

Tech Stack

Modbus | SIEMENS | scada | PostgreSQL | python™

Impact Summary

Metric	Before	After
Manual Adjustments	~2,500/day	<150/day (supervised)
Safety Incidents	3/year	0 (18 months)
Batch Changeover	90 mins	63 mins
Audit Compliance	Paper Logs	Digital Audit Trails

Results at a Glance

95%	0%	30%	98%
manual valve ops eliminated	Zero safety incidents post-deployment	faster batch changeovers	ISO & environmental audit pass rate

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