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HOW TO MINIMISE PRODUCTION DISRUPTION DURING PLC & CONTROL SYSTEM UPGRADES

A Project Manager's Checklist for Reducing Downtime Risk

Keep production running while modernising your automation systems.

Many automation upgrades fail not because of the technology, but because of poor planning, inadequate testing and unexpected disruption during implementation.

Use this checklist to assess whether your upgrade project is prepared to minimise downtime and operational risk.

1 COMPLETE A DETAILED SITE SURVEY

Understand the existing system before planning the upgrade.

- [ ] PLC hardware identified
- [ ] Control panels assessed
- [ ] Network infrastructure reviewed
- [ ] Safety systems documented
- [ ] Existing software backed up
- [ ] Documentation accuracy verified
- [ ] Undocumented modifications identified
- [ ] Obsolescence risks assessed

The more information available upfront, the fewer surprises during implementation.

2 DEVELOP A DETAILED MIGRATION PLAN

Every stage of the upgrade should be documented.

- [ ] Equipment replacement sequence defined
- [ ] Shutdown activities documented
- [ ] Installation tasks planned
- [ ] Testing procedures created
- [ ] Restart procedures defined
- [ ] Resource requirements confirmed
- [ ] Responsibilities assigned
- [ ] Rollback strategy included

A structured migration plan creates predictability during implementation.

3 COMPLETE FACTORY ACCEPTANCE TESTING (FAT)

Reduce commissioning risk before arriving on site.

- [ ] PLC software tested
- [ ] HMI functionality verified
- [ ] SCADA integration tested
- [ ] Network communications checked
- [ ] Alarm handling validated
- [ ] Control sequences tested
- [ ] Fault scenarios reviewed
- [ ] FAT documentation completed

Problems identified during FAT are cheaper and easier to resolve than those found during production downtime.

4 PLAN SHUTDOWN ACTIVITIES REALISTICALLY

Avoid creating unnecessary pressure during implementation.

- [ ] Shutdown window confirmed
- [ ] Hardware replacement time estimated
- [ ] Wiring modifications planned
- [ ] Software installation allowances included
- [ ] Functional testing time allocated
- [ ] Contingency time included
- [ ] Contractor resources confirmed
- [ ] Critical path reviewed

Compressed schedules increase risk and often create delays.

5 USE PHASED IMPLEMENTATION WHERE POSSIBLE

Reduce operational risk through staged upgrades.

- [ ] Upgrade phases defined
- [ ] Critical systems prioritised
- [ ] Production impacts assessed
- [ ] Temporary operating procedures identified
- [ ] Stage testing planned
- [ ] Handover criteria defined
- [ ] Stakeholder approval obtained
- [ ] Performance monitored between phases

Phased migrations often reduce downtime and improve confidence.

6 CREATE A ROLLBACK STRATEGY

Prepare for unexpected issues.

- [ ] Backup systems available
- [ ] PLC backups verified
- [ ] HMI backups verified
- [ ] SCADA backups verified
- [ ] Recovery procedures documented
- [ ] Decision-making responsibilities assigned
- [ ] Rollback testing completed
- [ ] Production restart procedures defined

Every critical automation project should have a contingency plan.

7 ENGAGE OPERATIONS AND MAINTENANCE TEAMS

Involve the people who know the process best.

- [ ] Operators consulted
- [ ] Maintenance teams involved
- [ ] Critical process constraints identified
- [ ] Restart requirements documented
- [ ] Communication plans agreed
- [ ] Escalation procedures defined
- [ ] Stakeholder reviews completed
- [ ] Responsibilities confirmed

Early involvement improves planning and reduces disruption.

PRODUCTION DISRUPTION RISK SCORE

50+ CHECKED
Excellent, implementation risks are well controlled.

40 – 49 CHECKED
Good preparation with minor risk areas.

30 – 39 CHECKED
Moderate risk of production disruption.

BELOW 30 CHECKED
High likelihood of downtime and implementation challenges.

THE BENEFITS

REDUCED DOWNTIME
Minimise operational disruption during upgrades.

LOWER PROJECT RISK
Identify issues before implementation begins.

FASTER COMMISSIONING
Reduce delays during startup and testing.

IMPROVED STAKEHOLDER CONFIDENCE
Keep operations and management aligned.

SMOOTHER MODERNISATION
Upgrade systems without unnecessary disruption.

HOW STRATOS HELPS

Stratos Control Systems helps manufacturers modernise PLC, SCADA and control systems while minimising production disruption through:

- Detailed site surveys
- Migration planning
- Factory Acceptance Testing
- Structured commissioning plans
- Rollback strategies
- Phased upgrade approaches
- Post-implementation support

MODERNISE WITH CONFIDENCE. MINIMISE DISRUPTION.

Speak to an Engineer Today.

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