COLD STORAGE · QUALITY AND COMPLIANCE OPERATIONS

Quality control and compliance reporting

Automates quality control inspections and compliance reporting for cold storage facilities by monitoring temperature logs, product conditions, and regulatory requirements to generate audit-ready documentation.

01 WORKFLOW TRIGGER

Scheduled quality control inspection period begins (daily/weekly cycle)

BLUEPRINT OVERVIEW

What this workflow accomplishes

This workflow connects SCADA temperature control, refrigeration monitoring software, and the WMS layer (SAP EWM, Manhattan, Oracle) into a single quality control cycle. Automation pulls zone temperature and humidity logs, screens them against FDA and HACCP limits, flags affected lots, and builds the audit file. The QA manager retains authority over excursion disposition, quarantine release, and what leaves the facility as a signed compliance record.

01

OUTPUTS

Daily and weekly compliance reports, Lot quarantine notifications, Regulatory audit file, Zone temperature charts

02

SUCCESS MEASURES

Compliance score percentage, Temperature excursions per cycle, Lots quarantined per cycle, Excursion time to disposition

03

CORE SYSTEMS

SCADA temperature control systems, SAP Extended Warehouse Management, Refrigeration monitoring software, Manhattan Associates WMS, Oracle Warehouse Management

HOW TO USE THIS BLUEPRINT

Operations leaders: set the inspection cadence per zone and confirm which HACCP critical limits the system screens against.

QA and compliance managers: review every flagged excursion, sign the disposition, and approve release of quarantined lots.

Implementation teams: map SCADA tag names to WMS storage bins so excursions resolve to real pallet and lot IDs.

THE WORKFLOW

End-to-end stage map

Six stages carry one inspection cycle from scheduled trigger to archived audit file. The decision at stage three governs whether the cycle closes as routine or opens a deviation investigation with lot-level quarantine.

IMPLEMENTATION DETAIL

Stage-by-stage breakdown

Each stage states the operational intent, the human control point, and the systems likely to take part. System names are examples, not a required architecture.

01 TRIGGER

Initiate Quality Control Cycle

Scheduled trigger activates daily or weekly quality control inspection process. System begins collecting data from all monitoring systems for compliance evaluation.

CONTROL POINT

Shift supervisor confirms no zones are in planned defrost or maintenance lockout before the cycle opens.

SYSTEMS SCADA temperature control systems

02 ACTION

Retrieve Temperature and Inventory Data

Pulls temperature logs, humidity readings, and current inventory status from warehouse management and monitoring systems. Consolidates data from all cold storage zones and product locations.

CONTROL POINT

Refrigeration technician verifies probe health and resolves any sensor gaps before the data set is accepted as complete.

SYSTEMS SCADA temperature control systems

SAP Extended Warehouse Management

Refrigeration monitoring software

03 DECISION

Evaluate Compliance Thresholds

Analyzes collected data against FDA, HACCP, and facility-specific quality standards. Determines if any temperature excursions, inventory discrepancies, or equipment anomalies require immediate attention.

CONTROL POINT

QA manager reviews borderline readings and can override an automated pass or fail call, with the reason recorded.

SYSTEMS Refrigeration monitoring software

04 ACTION

Flag Non-Compliant Products

Identifies specific inventory lots affected by temperature violations or quality issues. Updates product status in WMS and creates quarantine orders for affected items.

CONTROL POINT

QA manager signs each quarantine order; only QA can release a lot back to pickable stock.

SYSTEMS SAP Extended Warehouse Management

Manhattan Associates WMS

COMPLETION AND MEASUREMENT

Closing stages and results

The final two stages produce the signed report set, the temperature charts behind it, and the retention record an auditor will ask for.

05 ACTION

Generate Compliance Documentation

Creates automated quality control reports, temperature charts, and audit trails. Compiles evidence of compliance adherence and documents any corrective actions taken.

CONTROL POINT

Compliance lead reviews the corrective action narrative and approves the report before it is locked.

SYSTEMS Oracle Warehouse Management

SCADA temperature control systems

06 OUTPUT

Distribute Quality Reports

Sends completed compliance reports to quality managers, regulatory bodies, and stakeholders. Archives documentation for audit purposes and triggers alerts for any critical issues.

CONTROL POINT

Compliance lead approves the external distribution list and any notification sent to a regulatory body.

SYSTEMS Oracle Warehouse Management

DELIVERABLES

- Daily and weekly compliance reports
- Lot quarantine notifications
- Regulatory audit file
- Zone temperature charts

KEY METRICS

- Compliance score percentage
- Temperature excursions per cycle
- Lots quarantined per cycle
- Excursion time to disposition

IMPLEMENTATION CHECKS

- SCADA tag to bin mapping
- Quarantine write permissions in WMS
- Retention period for temperature logs
- Escalation routing to on-call QA
- Immutable audit trail on edits

NEXT STEP

Turn this blueprint into an implementation plan.

Map each stage to your own systems, permissions, and approval routing before selecting tools or building automation.

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COLD STORAGE WORKFLOW PACKS AND A FREE ASSESSMENT