

PDR-OPS-030 SUPPLY CHAIN MANAGEMENT IN COLD REGIONS

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Version 2.3 | Effective Date: January 15, 2024

Document Classification: Confidential

1. PURPOSE AND SCOPE

1. This document establishes the mandatory procedures and requirements for supply chain management in cold regions.
2. These procedures apply to all Company personnel, contractors, and subcontractors operating in cold regions.

2. DEFINITIONS

1. "Cold Chain Integrity" refers to the uninterrupted maintenance of re
2. "Critical Components" means any parts or assemblies designated a
 - a) BlueCore(TM) power cells
 - b) Navigation sensor arrays
 - c) Thermal management systems
 - d) Reinforced chassis components
3. "Qualified Handler" refers to personnel certified under the Company

3. COLD REGION SUPPLY CHAIN REQUIREMENTS

1. Temperature Monitoring and Documentation

1.1. Continuous temperature monitoring using Company-approved de

1.2. Maintenance of temperature logs at 15-minute intervals

1.3. Immediate notification of temperature excursions exceeding 2 C

1.4. Monthly calibration of all monitoring equipment

2. Transportation Requirements

2.1. Use of qualified cold-chain logistics providers

2.2. GPS tracking of all shipments

2.3. Temperature-controlled vehicles with redundant cooling systems

2.4. Maximum transit time of 72 hours for Critical Components

3. Storage Facility Standards

3.1. Minimum R-40 insulation rating

3.2. Backup power generation capacity for 72 hours

3.3. Automated temperature control systems

3.4. Segregated storage zones for different temperature requirements

4. QUALITY CONTROL AND TESTING

1. Pre-Shipment Verification

1.1. Component testing at operating temperature

1.2. Documentation of thermal cycling results

1.3. Verification of protective packaging integrity

1.4. Quality Control sign-off by Qualified Handler

2. Receiving Inspection

2.1. Temperature verification upon arrival

2.2. Visual inspection for condensation or frost damage

2.3. Functionality testing of Critical Components

2.4. Documentation of acceptance criteria

5. RISK MANAGEMENT AND CONTINGENCY PLAN

1. Risk Assessment Requirements

1.1. Quarterly review of supply chain vulnerabilities

1.2. Environmental impact analysis

1.3. Supplier capability assessment

1.4. Transportation route risk evaluation

2. Contingency Procedures

2.1. Emergency response protocols

2.2. Alternative routing options

2.3. Backup supplier arrangements

2.4. Critical component stockpiling requirements

6. COMPLIANCE AND DOCUMENTATION

1. Required Records

1.1. Temperature monitoring logs

1.2. Training certifications

1.3. Inspection reports

1.4. Incident reports

1.5. Corrective action documentation

2. Audit Requirements

2.1. Annual third-party cold chain audit

2.2. Quarterly internal compliance review

2.3. Monthly facility inspections

2.4. Documentation retention for 5 years

7. RESPONSIBILITY AND AUTHORITY

1. The Chief Operations Officer maintains ultimate responsibility for the program.

2. The Supply Chain Director is authorized to implement and modify procedures.

3. Qualified Handlers are responsible for day-to-day compliance with the program.

8. REVISION HISTORY

Version 2.3 - January 15, 2024: Updated temperature monitoring requirements.

Version 2.2 - July 1, 2023: Added BlueCore(TM) specific handling procedures

Version 2.1 - March 15, 2023: Revised storage facility standards

Version 2.0 - January 1, 2023: Major revision of all sections

9. APPROVAL

This document has been reviewed and approved by:

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Date: January 15, 2024

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