

PDR-OPS-022 COLD CLIMATE TRANSPORTATION GUIDELINES

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Effective Date: January 15, 2024

Document Version: 3.2

Classification: Confidential - Internal Use Only

1. PURPOSE AND SCOPE

1. This document establishes mandatory guidelines for the transporta
2. These guidelines apply to all employees, contractors, and third-part

2. DEFINITIONS

1. "Cold Chain Integrity" refers to maintaining specified temperature conditions throughout the transport process.
2. "Critical Components" means temperature-sensitive elements including:
 - a) BlueCore(TM) power systems
 - b) Navigation sensors
 - c) Lithium-ion battery assemblies
 - d) Thermal management systems
3. "Transport Window" defines the acceptable temperature range for safe transport.

3. PRE-TRANSPORTATION REQUIREMENTS

1. Temperature Monitoring

- a) All transport vehicles must be equipped with PDR-approved temperature monitoring devices
- b) Monitoring systems must provide continuous data logging with 15-minute intervals
- c) Temperature logs must be maintained for a minimum of 12 months

2. Equipment Verification

- a) Transport vehicles must undergo cold-climate certification
- b) Verification of thermal insulation integrity
- c) Confirmation of backup power systems
- d) Testing of climate control redundancy systems

4. LOADING AND SECURING PROCEDURES

1. All AMR units must be:

- a) Powered down using the BlueCore(TM) hibernation protocol
- b) Secured using PDR-approved tie-down systems rated for -40 C
- c) Protected with thermal blankets meeting Specification TD-2023-114
- d) Positioned minimum 10cm from vehicle walls

2. Battery Management

- a) Main batteries must be maintained at 40-60% charge
- b) Backup systems must be fully charged
- c) Temperature sensors must be activated prior to loading

5. IN-TRANSIT REQUIREMENTS

1. Temperature Control

- a) Primary cargo area must maintain -5 C to +10 C

- b) Maximum temperature variation of 3 C per hour
- c) Immediate notification if temperatures exceed specifications

2. Route Planning

- a) Maximum transit time of 72 hours
- b) Pre-approved emergency stopping points
- c) Alternative routing options for severe weather
- d) Real-time weather monitoring requirements

6. EMERGENCY PROCEDURES

1. Temperature Excursion Response

- a) Immediate notification to PDR Operations Control
- b) Implementation of contingency heating/cooling

- c) Rerouting to nearest approved facility
- d) Documentation of incident within 4 hours

2. Equipment Failure Protocol

- a) Backup system activation procedures
- b) Emergency technical support contact information
- c) Local service provider network access

7. DOCUMENTATION AND COMPLIANCE

1. Required Documentation

- a) Temperature logs
- b) Equipment certification records
- c) Driver qualifications

d) Route authorization forms

e) Incident reports (if applicable)

2. Compliance Verification

a) Quarterly audit requirements

b) Training certification renewal

c) Equipment calibration records

d) Insurance documentation

8. LIABILITY AND INSURANCE

1. Transportation providers must maintain:

a) Comprehensive cargo insurance (\$5M minimum)

b) Cold chain failure coverage

c) Environmental damage protection

d) Professional liability coverage

9. AMENDMENTS AND UPDATES

1. These guidelines are subject to annual review and update by PDR'

2. Emergency amendments may be issued with 24-hour notice.

10. ACKNOWLEDGMENT

The undersigned acknowledges receipt and understanding of these g
agrees to comply with all requirements herein.

Company: _

Representative:

Title:

Date:

APPROVAL

Authorized by:

Sarah Nordstrom

Chief Operating Officer

Polar Dynamics Robotics, Inc.

Victoria Wells

Chief Financial Officer

Polar Dynamics Robotics, Inc.

Date: January 15, 2024

