



APTA RT-SC-RP-003-02, Rev. 1

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**Signals and Communication Working
Group**

Signal System Snow Melting Equipment Inspection and Testing

Abstract: This recommended practice provides guidelines for inspecting and testing rail transit signal agency snow melting equipment.

Keywords: blower, communication, crib heaters, inspection, maintenance, signal, signal system snow melting equipment, snow melting, switch point heaters, test, testing, trip stop heater

Summary: This recommended practice provides procedures for inspecting and maintaining rail transit agency signal system snow melting equipment. Individual rail transit agencies may modify these procedures to accommodate their specific equipment and mode of operation.



Foreword

The American Public Transportation Association is a standards development organization in North America. The process of developing standards is managed by the APTA Standards Program's Standards Development Oversight Council (SDOC). These activities are carried out through several standards policy and planning committees that have been established to address specific transportation modes, safety and security requirements, interoperability, and other topics.

APTA used a consensus-based process to develop this document and its continued maintenance, which is detailed in the [manual for the APTA Standards Program](#). This document was drafted in accordance with the approval criteria and editorial policy as described. Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

This document was prepared by the Signals and Communication Working Group as directed by the Rail Standards Policy and Planning Committee.

This document represents a common viewpoint of those parties concerned with its provisions, namely transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any recommended practices or guidelines contained herein is voluntary. APTA standards are mandatory to the extent incorporated by an applicable statute or regulation. In some cases, federal and/or state regulations govern portions of a transit agency's operations. In cases where there is a conflict or contradiction between an applicable law or regulation and this document, consult with a legal adviser to determine which document takes precedence.

This document supersedes APTA RT-SC-RP-003-02, which has been revised. Below is a summary of changes from the previous document version:

- This document has been updated using the latest document template for the APTA Standards Program (e.g. new sections include a summary, foreword, summary of changes, etc.). This document was revised with new language describing the inspection and testing of signal systems snow melting equipment.
- The acronym RTS has been replaced with rail transit system and/or rail transit agency throughout the document in addition to minor grammatical corrections.
- 1.1 Inspection and testing frequency -Additions to the frequency of tasks describe potential hazards for snow melters.
- 1.4 Tools - Insulation resistance tester* was added
 - It was also noted that any tools marked with an asterisk (*) should be calibrated in accordance with OEM and/or rail transit agency requirements
- Section 1.7.1 Inspection - Prior to inspection de-energize equipment if disconnects are available was added to the inspection process
 - Checking fuses for continuity, proper size and rating. Replace as need was added to the inspection process
 - Re-energize cabinet if previously de-energized. Check equipment for proper operation was added to the inspection process
- Section 1.7.2 Testing -Proper isolation of snow melter components from the rail was added to the testing procedure.



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Participants

The American Public Transportation Association greatly appreciates the contributions of the **Signals and Communications Working Group**, which provided the primary effort in the drafting of this document.

At the time this standard was completed, the working group included the following members:

Aderemi Omotayo, *LA Metro*, Chair

J. Jeff McCormack, *AECOM*, Vice Chair

Kurt Slesinger, *Greater Cleveland Regional Transit Authority*, Secretary

Salvatore Ambrosino, *MTA New York City Transit*

Jose Arriojas, *NJ Transit*

Charles Barlow, *EverGlow NA*

Ryan Becraft, *Denver Transit Operators*

Frank Beeck, *Rail IT*

Peter Bertozzi, *Patrick Engineering*

Stéphane Bois, *AECOM*

Mark Bressi, *Hitachi Rail Systems USA*

Randy Brundridge, *ALSTOM*

Michael Bunnell, *MTA Metro-North Railroad*

Anthony Candarini, *AECOM*

Andrew Clapham, *Network Rail Consulting Ltd.*

Benjamin Claus, *Port Authority of Allegheny County*

Nicholas Columbare, *ALSTOM*

David Coury, *Transit Systems Engineering*

Michael Crispo, *Hatch-LTK*

Ismail Dahel, *Icomera US*

Philip Dang, *LA Metro*

Nolan Dick, *MBTA*

Martin Dyess, *Dallas Area Rapid Transit*

Jack Ellsworth, *ALSTOM*

Stephen Farrell, *Transit Systems Engineering*

Bruce Fenlason, *Metro Transit–Hiawatha Light Rail*

John Frisoli, *SEPTA*

Johann Glansdorp, *WMATA*

Alex Goff, *AECOM*

Howard Goldberg, *Alstom Signaling*

Howard Gregson, *AECOM*

Pat Guest, *NICTD*

Daniel Hernandez, *Chicago Transit Authority*

Tru Hong, *Gannett Fleming*

Rameez Iftikhar, *TransLink*

Peter Koonce, *City of Portland*

Philip Lee, *WMATA*

Michael Lowder, *Vanasse Hangen Brustlin*

Scott Matonak, *Hitachi Rail STS*

William McClellan, *ACI*

Jerry McCormack, *Vomar Products*

Eric McGraw, *Chicago Transit Authority*

Douglas McLeod, *Network Rail Consulting*

Douglas Minto, *Siemens Mobility*

Jeannette Mitchell, *Chicago Transit Authority*

Javier Molina, *Dallas Area Rapid Transit*

Thomas Newey, *Network Rail Consulting*

Ojo Nwabara, *Hitachi Rail STS*

William Palko, *Mott MacDonald*

Stephen Ranck, *Alstom*

Daniel Reitz, *Port Authority Trans-Hudson Corp.*

Louis Sanders, *Ayers Electronic Systems*

Tim Shoppa, *WMATA*

Phil Wellman, *Metro Transit*

James Winter, *Siemens Mobility*

Project team

Eugene Reed, *American Public Transportation Association*



Introduction

This introduction is not part of APTA RT-SC-RP-003-02, “Signal System Snow Melting Equipment Inspection and Testing.”

APTA rail transit safety standards and recommended practices represent an industry consensus on practices for rail transit agencies to help achieve a high level of safety for passengers, employees and the general public. This recommended practice provides guidelines for inspecting and testing rail transit agency system snow melting equipment.

APTA recommends the use of this document by:

- individuals or organizations that operate rail transit agencies;
- individuals or organizations that contract with others for the operation of rail transit agencies; and
- individuals or organizations that influence how rail transit agencies are operated (including but not limited to consultants, designers and contractors).

Scope and purpose

This document establishes recommended guidelines for inspecting and testing rail transit signal system snow melting equipment. The purpose of this document is to verify that signal system snow melting equipment is operating safely and as designed through periodic inspection and testing, thereby increasing reliability and reducing the risk of hazards and failures.

Signal System Snow Melting Equipment Inspection and Testing

1. Inspection and testing provisions

1.1 Inspection and testing frequency

The inspection and testing procedures in this recommended practice should be performed when signal system snow melting equipment is placed in service; when it is modified, repaired or disarranged; or as otherwise deemed necessary by the rail transit agency.

The rail transit agency should determine the need for additional inspection and testing frequencies for signal system snow melting equipment. A review of the following factors may be useful in making this assessment:

- OEM-recommended intervals
- industry experience
- operating environment/conditions
- historical data
- reliability-centered maintenance program development
- failure analysis
- rail transit agency testing and experience
- regulatory requirements

The frequency of tasks should comply with applicable federal, state and local regulations. It is potentially hazardous for snow melters (e.g., metallic mail tie ducts) to lose their electrical isolation to the rails, as this can lead to sneak paths in the signaling and/or traction return system.

1.2 Training

The rail transit agency and/or its maintenance contractors should develop and execute training programs that provide employees with the knowledge and skills necessary to safely and effectively perform the tasks outlined in this recommended practice.

1.3 Materials

The following materials are recommended for inspecting and testing signal system snow melting equipment:

- approved lubricants
- additional materials as required by the OEM and/or rail transit agency

1.4 Tools

The following tools are recommended for inspection and testing of signal system snow melting equipment:

- digital multimeter*
- VOM*
- insulation resistance tester*
- hand tools
- rail transit agency–approved portable radio
- standard tools carried by maintenance personnel
- additional tools as recommended by the OEM and/or rail transit agency

NOTE: Tools marked with an asterisk (*) should be calibrated in accordance with OEM and/or rail transit agency requirements.

1.5 Personal protective equipment

Personal protective equipment, as required by the rail transit agency, should be worn at all times during inspection and testing.

1.6 Safety

Rail transit agency safety rules, procedures and practices shall be followed at all times during inspection and testing.

1.7 Inspection and testing procedures

Signal system snow melting equipment inspection and testing procedures may be modified for each rail transit agency's requirements but should contain the steps listed in sections 1.7.1 and 1.7.2 as a minimum.

1.7.1 Inspection

1. Notify the operations control center (OCC) and/or other authorities of the inspection activities to be performed.
2. Prior to inspection de-energize equipment if disconnects are available.
3. Check associated contactors, indicators and controls for signs of burned contacts, loose connections, corrosion and damage.
4. Check protection devices for loose connections, broken parts, corrosion and signs of damage.
5. Check fuses for continuity, proper size and rating. Replace as needed.
6. Check equipment cases for loose, rusted or broken latches, locks, hinges, covers or weather seals; holes; leaks; and entrances that are exposed or not used.
7. Clean and remove any dust or debris from enclosure interior.
8. Check terminal boards for loose connections, corrosion and damage.
9. Inspect any associated circuit drawings stored in equipment enclosure. Replace any damaged or deteriorated drawings or instructions.
10. Re-energize cabinet if previously de-energized. Check equipment for proper operation.
11. Notify the OCC and/or other authorities when inspection is complete.

1.7.2 Testing

1. Notify the OCC and/or other authorities of the testing activities to be performed.
2. Remove any debris or paper from around the affected area prior to testing.
3. Test system for shorts, grounds and proper operation, such as proper isolation of snow melter components from rails.
4. Notify the OCC and/or other authorities when testing is complete.

1.8 Correction of deficiencies

Deficiencies identified during signal system snow melting equipment inspection and testing should be corrected and documented in accordance with OEM and/or rail transit agency requirements.

1.9 Documentation

Inspection and testing activities should be documented, reviewed and filed in accordance with rail transit agency procedures.

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Definitions

hazard: Any real or potential condition that can cause injury, death, damage, or loss of equipment or property.

operations control center (OCC): One or more locations designed, equipped and staffed for the purposes of monitoring and controlling rail transit agency activities from one or more central locations. Also called *rail control center, rail operations center, rail service control center*.

original equipment manufacturer (OEM): The enterprise that initially designs and builds a piece of equipment.

personal protective equipment: All clothing and other work accessories designed to create a barrier against workplace hazards. Examples include safety goggles, blast shields, hard hats, hearing protectors, gloves, respirators, aprons and work boots.

rail transit agency: The organization or portion of an organization that operates rail transit service and related activities. Also called *operating agency, operating authority, transit agency, transit authority, transit system*.

signal system snow melting equipment: Equipment used for the sole purpose of melting snow and ice that may interfere with select signal equipment operation.

Abbreviations and acronyms

DMM	digital multimeter
OCC	operations control center
OEM	original equipment manufacturer
VOM	volt ohm meter

Document history

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