8. APTA PR-IM-S-008-98, Rev. 1 Standard for Passenger Car Electrical Periodic Inspection and Maintenance

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APTA PRESS Task Force

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APTA Commuter Rail Executive Committee

Abstract: This standard contains minimum requirements for basic inspection and maintenance functions for electrical systems for new, remanufactured, and existing rail passenger equipment.

Keywords: electrical systems, inspection and maintenance

INTRODUCTION

(This introduction is not part of APTA PR-IM-S-008-98, Rev. 1 Standard for Passenger Car Electrical Periodic Inspection and Maintenance)

This introduction provides some background on the rationale used to develop this standard. This information is meant to aid in the understanding and application of this standard.

This standard describes the basic inspection and maintenance functions for electrical systems on passenger coaches. It is intended for the following:

a) Individuals or organizations who maintain electrical systems on passenger coaches;

b) Individuals or organizations who contract with others for the maintenance of electrical systems on passenger coaches; and

c) Individuals or organizations who influence how electrical systems are maintained on passenger coaches;

This standard is designed to help organizations incorporate safety considerations during the maintenance process.

This standard is intended to satisfy the following objectives:

– Incorporate safety considerations during the inspection and maintenance process;

– Identify those maintenance standards and inspection criteria, which provide a high level of passenger safety;

– Identify those maintenance standards and inspection criteria, which provide a high level of crew safety; and

– Identify the skills and training requirements necessary for maintenance personnel to apply these standards.

Participants

The American Public Transportation Association (APTA) greatly appreciates the contributions of the following individual(s), who provided the primary effort in the drafting of the *Standard for Electrical Periodic Inspection and Maintenance of Passenger Coaches:*

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Standard for Electrical Periodic Inspection and Maintenance of Passenger Coaches

1. Overview

This procedure establishes a standard for electrical inspection and maintenance of passenger coaches.

1.1 Scope

This standard is for electrical inspection and maintenance within the rail industry for passenger coaches. It is intended to be utilized as applicable, for individual properties, in areas of cyclic inspection and maintenance of passenger coach electrical systems.

1.2 Purpose

This standard is intended for use by railroads to apply basic procedures with regard to periodic inspection and maintenance of electrical systems for rail passenger coaches, with emphasis on maintenance of safety appliances and other safety critical systems.

These systems (if applicable) are essential in the safe operation of passenger coaches.

2. References

This standard shall be used in conjunction with the following publications. When the following standards are superceded by an approved revision, the revision shall apply.

49 CFR 229, Railroad Locomotive Safety Standards, October 2000.

49 CFR 238.307, Periodic Mechanical Inspection of Passenger Cars, October 2000.

APTA PR-IM-S-013-99, Rev. 1, Standard for Periodic Inspection and Maintenance of Passenger Coaches.

APTA-PR-PS-S-002-98, Rev. 2, Emergency Signage Standard for Egress/Access of Passenger Rail Equipment.

APTA PR-PS-S-004-99, Standard for Low-Location Exit Path Marking.

APTA PR-E-S-013-99, Standard for Emergency Lighting Design for Passenger Cars.

3. Frequency of conduct

The frequency of conduct of this task shall be as specified in, and in compliance with the requirements of Sections 4 and 5 of *APTA PR-IM-S-013-99, Rev 1, Standard for Passenger Car Periodic Inspection and Maintenance*.[1]

4. Requirements and specific tasks.

Caution: Safety Hazard

Ensure that equipment is secured against uncontrolled movement before commencing inspection and maintenance procedures.

Follow all applicable lockout and tag-out procedures

4.1 Materials

No specific material required.

4.2 Tools

Standard tools carried by electrical maintenance personnel are sufficient for this maintenance task.

4.3 Safety/personal protective equipment

Personal protective equipment, as required by the railroad, shall be worn at all times in the performance of this inspection task.

4.4 Training requirement

Railroads and their contractors shall develop and execute training programs that equip employees with the knowledge and skills necessary to safely, and effectively perform the tasks outlined in this standard.

4.5 Inspection and maintenance procedures

4.5.1 Lighting

a) Ensure that all lighting fixtures and diffusers, including but not limited to, passenger compartment, vestibule, and lavatories are working and properly secured. Clean lenses as necessary.

b) Ensure that all marker and clearance/step lights are working.

c) Ensure that all emergency lighting (including any illuminated emergency signage and/or active low-location exit path marking (LLEPM)) system is working by turning off main power supply in car.

[1] For references in Italics, see Section 2.

4.5.2 Train line receptacles and cables

Caution: Safety hazard - insure power is deenergized and lockout/tagout policy is followed

A. Train line receptacles

a) Ensure that receptacles are properly marked and secured to carbody.

b) Ensure that covers are not missing, broken or cracked and are functioning properly.

c) Check for broken, flashed or partially missing receptacle pins.

d) Check for cracked receptacle pin retaining plate and loose or missing plate mounting bolts.

e) Inspect for dirt/moisture contamination of receptacle interior and retaining plate.

f) Make all necessary repairs and clean receptacle interior. (If Required)

B. Cables

a) Ensure that head of cable is secure and undamaged.

b) Inspect cable insulation for abrasions, cuts, or impact damage.

c) Renew any defective cables.

4.5.3 PA/IC and radio

a) Test PA/IC system for proper volume level and clarity.

b) Test radio if applicable for proper transmitting and receiving clarity.

c) Make all necessary repairs or adjustments to ensure proper operation.

4.5.4 Conduit and wiring

a) Ensure that all conduit, junction box covers, electrical compartments and cable clamps are secured.

b) Where visible, check all wiring/cabling for abrasions or damaged insulation.

c) Test electrical circuits for grounds, per railroad procedure and make all necessary repairs.

d) Inspect ground brush assembly, if applicable**,** for adequate brush length, clean dirt out of spring housing. Inspect ground straps/connections.

e) Where applicable, inspect and test wheel slide system for proper operation.

f) Visually inspect speed sensors for proper installation.