

Fax : (0522)-2452581
Telephone: (0522)-2465715
Telegram : 'RAILMANAK', Lucknow
Email : dell7@rdso.railnet.gov.in



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226011
Government of India - Ministry of Railways
Research, Designs & Standards Organization.
LUCKNOW - 226011

No. EL/3.1.35/2

Dated: 22.11.2007

Chief Electrical Engineers,

1. Central Railway, Chhatrapati Shivaji Terminus, Mumbai-400001.
2. Northern Railway, Baroda House, New Delhi-110001.
3. East Central Railway, Hajipur-844101.
4. South Central Railway, Rail Nilayam, Secunderabad-500071.

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2007/EL/SMI/248(Rev.0)

1.0 Title:

Maintenance of Earthing System in three phase electric locomotives type WAP5, WAP7 & WAG9.

2.0 Brief History:

During HAG level committee meeting to address issues concerning reliability/availability of 3-phase locomotives, the problem of undesirable messages in the system which isolate sub systems or result in DJ tripping, was discussed.

It is observed that the earthing arrangement in 3-phase locos plays a vital role in generation of spurious messages by loco thereby affecting the reliability of loco on line. It is very essential to maintain the earthing arrangement in the locomotives as per instructions described in OEM's manual.

3.0 Object:

To improve reliability of locos on line and avoid undesirable messages in locos.

4.0 Instructions:

4.1 WAP5 Locos:

Earthing Scheme of WAP5 locomotives is described in ABB Document No.3EHP281122. In these locos, the return current passes to three axles directly from transformer through 70 sq. mm. 9GKW cable and through a choke and 70 sq. mm. 9GKW cable to one axle. There are two bogie to body shunts of 120 sq mm 9GKW cable and two bogie to axle box shunts of 70 sq. mm. 9GKW cable in each bogie. All the equipments in loco and screens of cables are connected to loco body. The purpose of these earthing shunts is to discharge any static charge and to carry return current in case of any disconnection in return current circuit. Hence, the maintenance of these earthing shunts and return current cables are very important. 04 Nos. of return current cables along with earthing brush assembly, 04 Nos. of bogie to body shunts and 04 Nos. of bogie to axle box shunts are required to be maintained in every loco.

4.2 WAG9/WAP7 Locos:

Earthing Scheme of WAG9/WAP7 locomotives is described in ABB Document No.3EHP281162. In these locos, the return current passes to three axles directly from transformer through 70 sq. mm. 9GKW cable and through a choke and 70 sq. mm. 9GKW cable to one axle. There are two bogie to body shunts of 120 sq mm 9GKW cable and three bogie to axle box shunts of 70 sq. mm. 9GKW cable in each bogie. All the equipments in loco and screens of cables are connected to loco body. The purpose of these earthing shunts is to discharge any static charge and to carry return current in case of any disconnection in return current circuit. Hence, the maintenance of these earthing shunts and return current cables are very important. 04 Nos. of return current cables along with earthing brush assembly, 04 Nos. of bogie to body shunts and 06 Nos. of bogie to axle box shunts are required to be maintained in every loco.

5.0 Application to:

WAP5, WAP7 & WAG9 class of electric locomotives.

6.0 Agency of implementation:

All sheds holding WAP5, WAP7 & WAG9 locomotives and Electric Loco Workshop /Bhusawal.

7.0 Periodicity of implementation:

During Trip Inspection, minor and major schedule, and unscheduled visit of locomotive.

Encl: ABB Doc. No. 3EHP281122 & 3EHP281162

[Signature]
(Sandeep Srivastava)
for Director General / Elect.

Copy to:-

Sr. DEE (TRS), Electric Loco Shed,

1. Central Railway, Ajni (Nagpur)-440008
2. East Central Railway, Gomoh-828401
3. Northern Railway, Ghaziabad- 201001
4. South Central Railway, Lallaguda – 500 017

Chief Works Manager, Electric Loco Workshop, Central Railway, Bhusawal

Secretary (Electric Traction), Railway Board, Rail Bhavan, New Delhi-110 001

Encl: ABB Doc. No. 3EHP281122 & 3EHP281162

[Signature]
(Sandeep Srivastava)
for Director General / Elect.



