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**No. EL/1.3.10**

**Date: 02.11.2016**

**Chief Electrical Engineers,**

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2. Eastern Railway, Fairlie Place, Kolkata- 700 001
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4. Northern Railway, Baroda House, New Delhi-110 001
5. North Central Railway, Hasting Road, Allahabad-211 001
6. Southern Railway, Park Town, Chennai-600 003
7. South Central Railway, Rail Nilayam, Secunderabad-500 071
8. South Eastern Railway, Garden Reach, Kolkata-700 043
9. South East Central Railway, Bilaspur-495004
10. Western Railway, Churchgate, Mumbai-400 020
11. West Central Railway, Jabalpur-482001
12. East Central Railway, Hazipur-844101 (Bihar)
13. Chittaranjan Locomotive Works, Chittaranjan- 713 331

**SPECIAL MAINTENANCE INSTRUCTION No. RDSO/2016/EL/SMI/0300 (Rev '0')**

**Dated 02.11.2016**

1. **Title:** Defining periodicity of overhauling schedule of MSU of WAG9/WAG9H/WAP7 locomotives to prevent premature MSU failures.

**2. Brief History:**

- 2.1 Instructions for maintenance and operation of Drive 15 AN 21 R1 of WAG9 locomotive are given in ABB document No. AEB 452569. Clause 2.2.2 of this document prescribes following:

*“The bearings shall be cleaned after 1.2 million kilometers.*

*Disassemble the gear unit using the instructions for disassembly AEB 452 511, item 6. The outer bearing ring with the rollers shall remain in the tube. The inner bearings rings shall remain on the main wheel-hub and the axle, since they would be damaged during disassembly of the bearing rings.*

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*Then bearings shall be cleaned. It is necessary to use a sufficient quantity of cleaning agent. The admissible cleaning agents see section 3. After cleaning the bearings have to be oiled immediately to avoid rust.*

*A visual inspection (condition of the cage, fits, and race) has to be taken out. Should no deviations be found, they can be reused. The rollers shall be turned individually and checked first. If rollers are in proper condition, the bearing surface will be too. The bearing surface of the inner ring can be checked directly”.*

2.2 It is observed that, at present no clear instructions exist for checking of condition and cleaning of MSU bearings, as prescribed above.

2.3 ABB had prescribed the interval as 1.2 million Kms which coincides with periodicity of IOH of the locomotive. However, as MSU overhauling/checking of bearing condition can only be carried out by wheel shops and cannot be carried out by loco sheds, this activity is not included in the revised maintenance schedule of 3-phase locomotive issued vide RDSO letter no. EL/3.1.35/16 dated 07.02.2012.

2.4 At present, different workshops are following different practices for MSU maintenance. Kancharapara workshop (KPA) is carrying out MSU overhauling of every WAG9, WAG9H and WAP7 axle received for re-discing, whereas Bhusawal workshop (BSL) is not carrying out MSU overhauling in every WAG9, WAG9H and WAP7 axle received for re-discing. BSL work shop is carrying out MSU overhauling only if specifically advised by the loco shed.

2.5 A average wheel life of WAG9/WAP7 wheels given by Railways is reproduced below:-

Sheds	Average wheel life (in years)		Average wheel life (in kilometers)	
	WAG9	WAP7	WAG9	WAP7
LGD	8.27	5.03	1147049	1377875
AQ	9.04	4.6	1237350	923450
GZB	--	4.0	--	---

2.6 From the above data, it is observed that the prescribed periodicity of 12 Lakh KMs as per ABB document is nearer to average wheel life of the locomotives. Further, as MSU overhauling can be done only in wheel shops after removal of wheel disc, it is proposed to carry out MSU overhauling during re-discing which is carried out nearly at the time of IOH around service life of 12 Lakh KMs.

### 3. Object:

To define periodicity of overhauling schedule of MSU of WAG9, WAG9H and WAP7 locomotives to prevent premature MSU failures.

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**4. Modified Instructions to replace existing instructions:**

4.1 Overhauling of MSU of WAG9, WAG9H and WAP7 locomotives shall be carried out at the time of re-discing which is carried out nearly at the time of IOH around service life of 12 Lakh KMs.

4.2 Instructions given in ABB document no. AEB 452 511(Drive 15 AN 21 R1 Instructions for assembly and disassembly) and AEB 452 569 ((Drive 15 AN 21 R1 Instructions for maintenance and operation) to be followed.

4.3 MSU bearing will be changed on condition basis during the overhauling if required.

4.4 MSU bearings will remain must change item during POH as defined in TC-123.

**5. Application to class of Locomotives:**

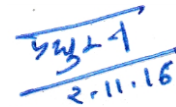
WAG9, WAG9H and WAP7 locomotive

**6. Agency of Implementation:-**

All the workshops / Loco sheds carrying out re-discing of WAG9, WAG9H and WAP7 locomotive.

**7. Periodicity of Implementation:**

MSU overhauling needs to be carried out at the time of re-discing for WAG9, WAG9H and WAP7 locomotives which is carried out nearly at the time of IOH around service life of 12 Lakh KMs.



**(P. K. Saraswat)**  
**for Director General/Electrical**

Encl: nil

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