

Fax : 0522 - 2465717
Telephone : 0522 - 2454070
e-mail: edse.rds@gmail.com



सत्यमेव जयते

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

Om Prakash Kesari
Principal Executive Director Standards Electrical
D.O.No.EL.8.5.10.1

Date: 06.08.2018

Dear Shri Ghanshyam Singh ji,

Subject: PCDO for the month of July, 2018.

1.0 HIGHLIGHTS

- 1.1 Technical audit of CLW for assembly of 3-Phase Traction Motor and Motor Suspension Unit (MSU) had been carried out by RDSO from 20.06.2018 to 22.06.2018. Technical Audit report No. RDSO/2018/EL/TAR/0016, Rev.'0' comprising observations and recommendations for storage, fitment process, marking, measurements of vital parameters, use of components in kit form etc. for 3-Ph traction motor bearings & Motor Suspension Unit(MSU) had been prepared and circulated to CLW and user Railways on 11.07.2018 for implementation.
- 1.2 Investigation on unusual sound in Traction Motor (TM) type 6FRA6068 assembled with Non Drive End (NDE) bearings of M/s Schaeffler ('FAG') make reported by M/s BHEL had been carried out by RDSO from 02.05.2018 to 04.05.2018 at BHEL, Bhopal. Technical Investigation Report No. RDSO/2018/EL/IR/0184 Rev. '0' had been issued on 16.07.2018.
- 1.3 Technical audit of ELS/GZB of Northern Railway for maintenance of bearings of three phase locomotive traction motors had been carried out by RDSO on 04.06.2018. Technical Audit report No. RDSO/2018/EL/TAR/0018, Rev.'0' comprising observations and recommendations for storage, fitment process, marking, measurements of vital parameters, use of expired antitracking varnish etc. for 3-Ph traction motor bearings had been prepared and circulated to ELS/GZB and user Railways on 24.07.2018 for implementation.
- 1.4 A technical audit report on maintenance practices of brake system (IRAB 9/IRAB 10) has been carried out at ELS/MGS/ECR. The technical audit report no RDSO / EL/TAR/0017 Rev 0 has been issued vide RDSO letter no EL/3.2.19/3-phase/1 dated 13.07.2018 and uploaded on Website.

- 1.5 The minutes of meeting held with M/s. FTRIL at RDSO to discuss regarding refurbishment of electronic cards for E 70 brake system of 3 phase system electric locomotive has been issued vide RDSO letter no EL/3.2.19/ 3 Phase dated 02.07.2018.
- 1.6 Specification no, RDSO/2018/EL/SPEC/0139 and STR no. RDSO/2018/EL/STR/0091 for development of functionally equivalent cards in GTO based converters and MICAS VCU in 3-phase electric locomotives have been finalised and uploaded on RDSO web site on 09/07/2018

2.0 RELIABILITY IMPROVEMENT

- 2.1 Meeting held at RDSO regarding maintenance practices of DI/DU type relay of conventional locomotive on 25.07.2018 at RDSO. In this meeting based on the feedback from Zonal Railways the periodicity of maintenance was reviewed. MOM was issued vide letter no: EL/3.2.10/Gen dated 27/07/2018.
- 2.2 Meeting held at RDSO regarding performance review meeting of transformer on 27.07.2018 at RDSO. In the meeting OEMs were requested to improve the quality of the product and expedite warranty attention.
- 2.2 Vide letter no. EL/11.5.5/5 dtd. 02.07.18, MOM held at RDSO, Lucknow on 02.07.18 on reliability of CGL make IGBT based converters was issued.
- 2.3 Vide letter no. EL/11.5.5/21 dtd. 04.07.18, MOM held at RDSO, Lucknow on 04.07.18 on reliability of BTIPL make IGBT based converters was issued.
- 2.4 Vide letter no. EL/11.5.5/21 dtd. 10.07.18, MOM held at RDSO, Lucknow on 05.07.18 on reliability of ABB make IGBT based Traction Converters and Auxiliary converters was issued.
- 2.5 Vide letter no. EL/11.5.5/21 dtd. 10.07.18, MOM held at RDSO, Lucknow on 05.07.18 on reliability of Medha make IGBT based Traction Converters and Auxiliary converters was issued.
- 2.6 Vide letter no. EL/11.5.5/5 dtd. 27.07.18, MOM on reliability held at ELS/BIA, on 19th & 20th July'18 on GTO based Traction Converters, Auxiliary Converters and Vehicle control units was issued.
- 2.7 A technical audit report on maintenance practices of brake system (IRAB 9/IRAB 10) has been carried out at ELS/GZB/NR. The technical audit report no RDSO / EL / TAR/0019 Rev 0 has been issued vide RDSO letter no EL/3.2.19/3-phase/1 dated 26.07.2018. and uploaded on Website.

- 2.8 A meeting has been organized at RDSO on 31.07.2018 to review the performance of main compressors for electric locomotive. The industries and the representative of railways attended the meeting.
- 2.9 Performance review meeting of bearings of 3-phase traction motors had been conducted with Bearing manufacturers, Zonal Railways, CLW & RDSO on 30.05.2018 at RDSO, Lucknow. Detailed Minutes of Minutes was issued vide letter No. EL/2.2.13 dated 03.07.2018 to all the concerned.
- 2.10 A meeting to review and standardize the procedure of measurement of axial clearance of traction motor type 6FRA6068 was conducted with M/s BHEL, M/s CGL, M/S Saini, M/s SKF, M/s Schaeffler, CLW and RDSO, Lucknow on 27.07.2018. Limit of axial clearance & measurement procedure were discussed in detail. The Minutes of Meeting was issued vide letter No. EL/2.2.13 dated 27.07.2018 to all concerned.
- 2.11 A meeting was held at RDSO on 05.07.2018 with Firm & Railways regarding failure of CBC in 3-phase Electric Locomotives. The minutes of meeting (MOM) for the same have been issued vides this office letter No. EL/3.2.119(CBC) dated 12.07.2018 to Zonal Railways & firm. During the meeting it was decided that the drawing of CBC may be revised to include DPT/MPT and improve the quality of welding.
- 2.12 A meeting was held at RDSO on 24.07.2018 with Firm & Railways regarding failure of TBU-150 type of axle box bearing in ELS/GZB based WAP-5 locomotives. The minutes of meeting (MOM) for the same have been issued vides this office letter No. EL/3.2.108/3-ph dated 27.07.2018 to Zonal Railways & firm. During the meeting it was advised to suggest and provide suitable method to measure earth current passage through axle box bearing.

3.0 PROTOTYPE TESTING/QAUALITY AUDIT

- 3.1 The balance tests i.e. after endurance test resistance to shock test, transverse rigidity test of high reach pantograph developed by M/s. FTRTIL has been carried out at firm's works premises Hasur. The report is under scrutiny.
- 3.2 The quality audit of M/s. FTRTIL India Ltd conducted successfully at their works address for manufacture & supply of brake system (E 70) and its rubber components/Kits for 3 phase locomotive. Firm has been informed vide RDSO letter no EL/3.2.19/ 3 phase dated 11.07.2018.
- 3.3 Prototype testing of six sets for Assembly components of Traction motor type 6FRA-6068 developed by M/s Saini Electrical & Engineering Works, Navi Mumbai had been carried out by RDSO with assistance from CLW against CLW's Purchase order from 17.07.2018 to 23.07.2018 at firm premises, at Mumbai. Type test results are under scrutiny.

4.0 SPECIFICATION/STR

- 4.1 Specification no: ELRS/SPEC/SPM/0002 Rev '4' for microprocessor based electronic speed cum energy monitoring system for Electric Locomotives has been issued on 17.07.2018 and same up loaded on RDSO website.
- 4.2 Vide letter no. EL/3.1.35/4 dated 26.07.18, revised modification required in the WAP-5 locomotive in push-pull as well as for MU with single pantograph was issued.
- 4.3 Specification for single phase to three phase 2 x 130 KVA Static converter (SIV) for conventional locomotive, no RDSO/2018/EL/SPEC/0140 Rev 0 dated July 2018, has been issued vide RDSO letter no EL/1.2.9.1 dated 31.07.2018 & same is up loaded on RDSO website.
- 4.4 The Specification of 1745 lpm oil lubricated compressor for electric locomotives no RDSO/2018/EL/SPEC/XXXX Rev 0 has been uploaded at RDSO website for comments/suggestion form railways and industries vide RDSO letter no EL/3.2.15./ 3 phase dated 24.07.2018.

5.0 DEVELOPMENTAL ACTIVITIES


- 5.1 Meeting held at RDSO regarding air conditioning of machine room of three phase Electric Locomotive on 12.07.2018 at RDSO. OEMs were requested to submit feasibility report.MOM was issued vide letter no: EL/3.2.176/1 dated 12/07/2018.
- 5.2 Letter of Acceptance (LOA) for "Development of Regenerative Braking feature in WAG7 locomotives" was issued to M/s Medha Servo Drives Pvt. Ltd, Hyderabad vide letter no. EL/3.2.19/RB/Tender dated 29.05.2018 at a cost of Rs. 1,51,98,400/- for one locomotive. The completion period is within 6 months from date of issue of LOA i.e. 28th Nov, 2018. Meeting was conducted with M/s Medha on 05.07.2018 to discuss the progress of development of re-generative braking. RDSO had requested M/s Medha to expedite the development work and adhere to the timelines and to complete the work within the prescribed time limit as per contract. The Minutes of Meeting was issued vide letter No. EL/3.2.19/RB/Medha dated 05.07.2018 to all concerned.
- 5.3 Vide letter no. EL/3.1.35/24 dated 04.07.18, review/comments on Battery Maintenance Manual of WAG12 Locomotive was issued.
- 5.4 Vide letter no. EL/3.1.35/24 dated 16.07.18, MOM held at RDSO on 13.07.18 regarding the oscillation and EBD trials of WAG12 was issued.
- 5.5 RDSO had conducted a meeting for development of sources for repairing of electronic cards/components of Microprocessor based control and fault diagnostic system (MPCS) at Lucknow on 2.7.2018. M/s ICECPL, M/s Indocen Electronic System & M/s Kaynes Technology participated in the meeting.

6.0 OTHER ITEMS:

- 6.1 Design document no. TME/TECH/2018/1001 Rev.01 dated 18.06.2018 for traction motor type IM3302AZ for 25 KV AC 3-phase propulsion for Other Than Mumbai project submitted by M/s BHEL through PS & EMU Directorate's note no. EL/1.3.16.7 dated 28.06.2018 had been examined and comments communicated vide Electrical Dte's note no. EL/3.2.182/OTM/163/BHEL dated 23.07.2018.
- 6.2 Design documents No. TEC-KME-RDMT-S001-02, Version 3 including 13 attachments for traction motor received through DSE/Metro note dated 27.06.2018 of M/s Zhuzhou-CRRC-Tec for Kolkata Metro project had been examined and comments communicated to PS & EMU Dte. vide note No. EL/3.2.182/K. Metro/Zhuzhou dated 31.07.2018

with regards,

Yours sincerely,


 06/8/18
(Om Prakash Kesari)

**Shri Ghanshyam Singh,
Member Traction,
Railway Board, Rail Bhavan,
New Delhi-110 001**

Copy to-

1. Additional Member (Electrical),)
Railway Board, Rail Bhawan,)
New Delhi.)
2. Secy to DG/RDSO)

For kind information

 06/8/18
(Om Prakash Kesari)
For Director General/Electrical

Annexure I

		Replacement of EPROM after 6 years of service		Create low pressure zone by providing Baffle plates		Blocking leak holes in the Machine Room		Reed relay modification		Cab redundancy modification	
Railway	Shed	<u>No. of Locos to be done</u>	<u>Cumulative up to date</u>	<u>No. of Locos to be done</u>	<u>Cumulative up to date</u>	<u>No. of Locos to be done</u>	<u>Cumulative up to date</u>	<u>No. of Locos to be done</u>	<u>Cumulative up to date</u>	<u>No. of Locos to be done</u>	<u>Cumulative up to date</u>
CR	AQ	100	53	175	175	175	175	169	169	169	73
CR	KYN	0	0	64	155	64	155	64	155	64	181
ECOR	WAT	0	0	0	140	0	140	0	140	0	133
ECR	GMO	69	43	157	157	157	157	157	120	157	60
ER	HWH	3	3	25	25	25	25	25	32	25	25
NCR	CNB	0	0	13	13	13	13	0	0	13	13
NR	GZB	90	65	86	86	166	166	142	142	87	87
NR	LDH	0	0	21	21	21	21	21	21	21	0
SCR	LGD	86	24	176	176	176	176	161	161	161	158
SECR	BIA	14	17	114	274	114	299	102	222	114	215
SER	TATA	4	0	152	200	152	211	152	173	152	120
SR	RPM	0	0	56	56	56	56	56	56	56	55
WCR	TKD	39	35	143	144	143	144	143	144	143	71
WR	BRC	2	2	90	90	90	90	83	83	22	22
Grand	TTL	407	242	1272	1712	1352	1828	1275	1618	1184	1213

Annexure-II

**Status of un-modified motor support (TM-1 & 2 locations) in WAP7 & WAG9/9H
three phase locomotives**

Rly	Shed	TM location	WAP	WAG9/9 H	Tot	Action plan	PDC
CR	AQ	1,2&3	28	214	242	For 242 bogies for TM 1 & 2 position retendered, LOA awarded to M/s Ashika commercial pvt ltd Kolkata on 25.01.2018. 34 bogies completed. For TM 3 position not being changed.	Mar'19
		3			71		
CR	KYN	ALL	0	21	21	16 bogies have been modified by M/s. Anup Malleables, Jharkhand.	Sep'18
ER	HWH	ALL	0	0	0	All modified	N/A
ECR	GMO	ALL	0	49+198*	247	Tender awarded to M/s. Ved, Kanpur. Work started in Jan.2018. 90 bogies have been modified.	Mar'19
ECOR	WAT	1,2&3	0	12*	12	7 no. modified by M/s Ved. Only 5 bogies remaining.	Sep'18
NR	GZB	ALL	143	0	143	16 bogies modified M/s. Ved, Kanpur.	Jan'19
NR	LDH	ALL	0	0	0	All modified	N/A
NCR	CNB	ALL	0	0	0	All modified	N/A
SR	RPM	1 & 2	49	0	49	41 bogies modified by M/s Ved Kanpur.	Oct'18
		3	69		69	48 bogies modified.	
SCR	LGD	1&2	68	161	229	88 bogies have been modified by M/s. Ved, Kanpur.	Jan'19
		3	84	206	290	Modification work to be done during POH. But not being done by POH shops.	
SER	TATA	1,2&3	0	40	40	All bogies have been modified by M/s. Anup Malleables, Jharkhand.	Dec.'18
		3	0	66	66	21 no. bogies have been modified by M/s Ved, Kanpur. For 49 bogies case file under finance vetting.	
SECR	BIA	1,2&3	16	58	74	37 nos. modified by M/s. Anup Malleables, Jharkhand.	Dec'18
WR	BRC	ALL	0	0	0	All modified	N/A
WCR	TKD	1, 2 & 3	39	77	116	Modified PO issued to M/s. Anup Malleables, Jharkhand for 116 bogies for all three locations on 13.02.2018. 16 bogies completed. For 20 bogies for only TM 3 position tender opened 2 times but could not be finalized.	Mar'19
		3			20		

Annexure- III**Status of modified/unmodified brake lever of WAG-9/9H locomotive as per MS 455 issued on Dec'16**

SN	Shed	No. of WAG-9/9H locos	Modified with TBU/PBU	Un-Modified with TBU/PBU	Converted to conventional rigging
1	BSL	15	13	02	0
2	AQ	156	64	92	0
3	KYN	67	0	67	0
4	GMO	179	0	179	0
5	WAT	140	Locos to be checked as per MS 455		0
6	LDH	21	21	0	0
7	CNB	13	9	4	0
8	LGD	112	20	92	0
9	KZJ	31	28	3	0
10	TATA	152	1	151	0
11	BIA	95	31	64	0
12	TKD	80	52	27	1
13	NKJ	25	Locos to be checked as per MS 455		0
14	BNDM	34			0

Inspection position, of RDSO, Cell BPL& JHS- July-18

Sr.No.	Item Name	No. of Items
1.	Pinion 17 Teeth	70
2.	Ecc (BG)	5
3.	Traction Motor Complete 4907 (GR 18:74)	40
4.	Control Panel for Traction	12
5.	Main Field Coil assly.	100
6.	Traction Alternator 9901	8
7.	C1001 TM (GR 18:74)	12
8.	Armature for C1001 TM	36
9.	TM 6FRA 6068	97
10.	C1001 TM (GR 18:65)	10
11.	Rehab. Traction Alternator 7362	4
12.	Complete Stator 6FRA 6068	10
13.	Complete wound rotor for C1015	4
14.	Compole& Coil assly.	200
15.	3Phase loco Transformer 7775	10
16.	3Phase loco Transformer 6531	1
17.	ACEMU 1050 KVA Transformer	3