

संजीव स्वरूप
प्रधान कार्यकारी निदेशक मानक विद्युत

Sanjiv Swarup
Principal Executive Director Stds. Electrical



भारत सरकार — रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
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D.O.No.EL.8.5.10.1

Dt: 02.11.2020

Dear Sri Tiwari ji,

Sub: PCDO for the month of October, 2020.

1. HIGHLIGHTS
Nil

2. RELIABILITY IMPROVEMENT

- 2.1. On 08.10.2020, a webinar was held with OEM's of brake system and Zonal Railways regarding reliability issues of E-70 & CCB brake system reported by Zonal Railways. The firms have been advised to take corrective action accordingly.
- 2.2. Based on various failures reported by Zonal Railways, virtual meetings to review the performance of Spheriblocs supplied by M/s Basant Rubber, Mumbai & M/s BHC, Germany (Indian representative M/s S.K. Sales, Kolkata) were conducted on 21.10.2020 & 22.10.2020 respectively. The firms have been advised to take corrective action accordingly.
- 2.3. Quality Assurance Plan (QAP) of WAG9H electric locomotive manufactured by M/s BHEL, Jhansi have been approved vide letter no. EL/3.1.22/4, dated 20.10.2020.
- 2.4. Zonal Railways were requested for submission of their views for replacement of existing Auxiliary machine bearings with higher size bearing in SCMRB (6205/C3 bearing with higher size of 6305 bearing) & SCTMB (6206C3 bearing with higher size of 6306 bearings) as proposed by Central Railway to enable RDSO in examining the suitability of modification vide RDSO letter no. EL/3.2.176/1, dated 08.10.2020.
- 2.5. Railway Board informed that the report on review of periodicity of maintenance schedule of electric locos along with analysis recommendation of the Committee, views of COMs of Zonal Railways and RDSO, submitted by GM/SCR to Planning Directorate of Railway Board were deliberated in a Board Meeting and accepted the recommendations. The recommendations approved by the Railway Board have been circulated to Zonal Railways vide RDSO vide letter No.EL/3.6.1, dated 13.1.2020, to implement the revised periodicity of maintenance schedules for the four types of electric locomotives with immediate effect. Besides, Zonal Railways have been requested to send the feedback/suggestions for additional issues which were identified by Railway Board.
- 2.6. Meeting was held on 15.10.2020 through Web/Video Conference with M/s Yash Capacitors to discuss the reliability issues of Harmonic filter capacitor of M/s Sunny make supplied by M/s Yash and MOM has been issued vide this office letter

No.EL/11.5.5/21 dated 20.10.2020. In this regard, a quality audit of the firm has been done by CLW and CR on 26.10.2020.

3. DEVELOPMENTAL ACTIVITIES

3.1. Development of End of Train Telemetry(EoTT)

M/s Tata had submitted revised EoTT Design document No.102600000420, Version 1.1 dated 15th Sept 2020. However, M/s Tata has not specifically commented on observations mentioned in RDSO letter No. EL/4.2.15/EoTT/TATA dt. 07.07.2020. M/s Tata was advised vide letter No.EL/4.2.15/EoTT/TATA dt.01.10.2020 to submit Parawise reply so that revised document can be examined properly.

- 3.2. Vide RDSO letter no. EL/2.2.1/High Reach/Nike dtd. 09.10.20, M/s Nike Energy Manufacturing Pvt. Ltd. is found capable of development of High Reach Pantograph subject to fulfilment of some deficiencies which is advised to firm.
- 3.3. Vide RDSO letter no. EL/2.2.1/High Reach/Black Stone dtd. 26.10.20, M/s Black Stone Terry Engg. Company, application for development of High Reach Pantograph is accepted for further processing.
- 3.4. Two units of 1745 lpm compressor of M/s Anesta Iwata Motherson Pvt. Ltd. fitted in loco No.WAG9HC-41065 of ELS/Bhilai/SECR are under field trial since 22.10.2020.
- 3.5. M/s ECE Railway Equipment Pvt. Ltd. has applied for development of High Reach Pantograph. The same has been scrutinized and deficiencies advised to firm vide RDSO letter No.EL/2.2.1/High Reach/ECE dtd. 20.10.20.
- 3.6. RDSO vide letter no. EL/3.2.19/3-Phase/EP Assist/FTRTIL dtd. 26.10.20, M/s Faiveley Transport has been considered suitable after capacity assessment for manufacture and supply of EP assisted brake system for 3-Phase electric locomotive application compatible with EP assisted brake system on coaches as per spec. no. RDSO/2018/EL/SPEC/0138, Rev.'0'.
- 3.7. RDSO vide letter no. EL/3.2.19/3-Phase/EP Assist/FTRTIL dtd. 27.10.20, the inclusion of firm in vendor directory as developmental source with limited quantity accorded by Directorate-Head on 27.10.2020, which was informed to firm and PED/QA for necessary action.
- 3.8. Prototype test has been conducted on LED based twin beam head light units manufactured by M/s Matsushi Power Technologies, Dehradun. Prototype clearance has been given to firm vide this office letter no. EL/6.11.1 (Matsushi) dated 28.10.2020 for field trial.
- 3.9. Prototype test has been conducted on LED based twin beam head light units manufactured by M/s Power Technologies Corporation, Dehradun. Prototype clearance has been given to firm vide this office letter no. EL/6.11.1 (PTC) dated 28.10.2020 for field trial.
- 3.10. Online application ID No. 1057 dated 19.08.2020 of M/s Balaji Rubber Factory, Mumbai for fresh vendor registration for manufacturing and supply of Spheriblocs for 3-phase electric locomotives was scrutinized and some major/minor deficiencies were found. The same has been communicated to firm for further processing the application vide this office letter No. EL/3.1.35/12(SB)/BRF dated 22.10.2020.

- 3.11. Southern Railway proposed a modification in ESMON for sensing the Brake Pipe Pressure of locomotive to facilitate analysis SPAD or other cases & requested RDSO for advising M/s Medha to undertake necessary modifications for the purpose on trial basis in 2 WAG7 locos based at ELS/ED. RDSO vide letter no. EL/2.2.9/10, dated 13.10.2020 requested M/s Medha to examine & carry out the aforesaid modifications on trial basis in their make of ESMONs in two WAG7 locos.
- 3.12. Draft standard layout of onboard TCAS equipment for fitment on electric locomotive and auto regression for TCAS fitted with conventional locomotive have been prepared and circulated to ZRs/Pus for their comments vide letter no. EL/0.1.3/3, dated 22.10.2020.
- 3.13. Design document of power cable used in M/s Medha make 25kV AC Microprocessor controlled IGBT based three phase propulsion equipment for under slung EMUs project has been scrutinized and status for same has been given to PS & EMU dte. vide letter No.EL/8.1.25.1/Medha/Under slung MEMU, dated 05.10.2020.
- 3.14. Design document of power cable used in M/s Medha make 25kV AC Microprocessor controlled IGBT based three phase propulsion equipment for under slung MEMUs project has been scrutinized and status for same has been given to PS & EMU Dte. vide letter No.EL/8.1.25.1/Medha/Under slung MEMU, dated 05.10.2020.
- 3.15. Design document of Control cable used in M/s Medha make 25kV AC Microprocessor controlled IGBT based three phase propulsion equipment for under slung EMUs project has been scrutinized and status for same has been given to PS & EMU Dte. vide letter No.EL/8.1.25.1/Medha/Under slung MEMU, dated 05.10.2020.
- 3.16. Design document of Control cable used in M/s Medha make 25kV AC Microprocessor controlled IGBT based three phase propulsion equipment for under slung MEMUs project has been scrutinized and status for same has been given to PS & EMU Dte. vide letter No.EL/8.1.25.1/Medha/Under slung MEMU, dated 05.10.2020.
- 3.17. Prototype testing of M/s Siemens make WAG9 upgraded transformer of 9180kVA and 6531kVA steel tank transformer has been witnessed by RDSO jointly with CLW at their Kalwa works, Navi Mumbai from 04.10.2020 to 14.10.2020.
- 3.18. Technical data and internal test report of M/s TE connectivity make HV cable (Panto to TFR) for Train 18 project has been scrutinized and comments offered vide note No.EL/3.2.1/Traintset, dated 29.10.2020.
- 3.19. Inspection of type test for 6000 HP propulsion equipments of M/s Siemens make for 3-phase IGBT based electric locomotive is under process at Siemens/Nasik from 27.10.2020 by CLW and RDSO/BPL jointly.
- 3.20. Capacity cum Capability Assessment of M/s Think Circuit Railtech Pvt. Ltd. completed and report has been received from ADE/QA/S&T/RDSO/SBC and case is under process.

4. SPECIFICATION/STR

4.1. Revision of Spec. No. RDSO/2008/EL/SPEC/0063, Rev.2

Draft Specification No.RDSO/SPEC/EL/0063 (Rev 3) for "Zr-Cu Rotor Bars for Traction Motor Type 6FRA6068 for WAG9/WAP7 locos has been uploaded on RDSO website on 06.10.2020 for one month for comments from PUs/Zonal Railways and vendors. RDSO

vide letter No.EL/3.2.182 dated 06.10.2020 has also requested PUs/ZRs and vendors to submit the comments on the draft specification.

4.2. Revision of Spec. No. RDSO/2008/EL/SPEC/0064, Rev.2.

Draft Specification No.RDSO/2008/EL/SPEC/0064 (Rev 3) for "Zr-Cu Punched type resistance ring for resistance ring Mechanically interlocked to End plate design Rotor for traction motor type 6FRA6068 for WAG9/WAP7 locos" has been uploaded on RDSO website on 06.10.2020 for one month for comments from PUS/Zonal Railways and vendors. RDSO vide letter No.EL/3.2.182 dated 23.10.2020 has also requested PUs/ZRs and vendors to submit the comments on the draft specification.

- 4.3. Specification No.RDSO/2018/EL/SPEC/0139 and STR No.RDSO/2018/EL/STR/0091 for development of functionally equivalent cards for GTO based converters and MICAS VCU has been revised as per instruction from RDSO/Vigilance Cell. Revised draft documents have been uploaded on RDSO website for comments from Zonal Railways / Manufacturers.

5. PROTOTYPE TESTING/QUALITY AUDIT

- 5.1. Type test of functionally equivalent PCB cards, manufactured by M/s Advanced Rail Controls Pvt. Ltd., Bangalore have been carried out and completed. Firm has been informed to put these cards for field trials in locomotive vide this office letter no. EL/11.5.5/14/ARC dated 27.10.2020.

6. OTHER ITEMS

- 6.1. In response to BHEL's letter dated 29.09.2020, and based on satisfactory performance received for 50 numbers TMs by Railways, RDSO vide letter No.EL/2.2.13 dated 06.10.2020 has permitted M/s BHEL to supply traction motor type 6FRA6068 to CLW, DLW & DMW with FAG/SKF make DE/NDE bearing as per course of action contained at Para 4 of the RDSO's letter dated 24.05.2018 for a period of 31.12.2020. Final decision may be taken further after receiving the performance of the Traction motors.
- 6.2. Submitted reply on Motorette testing on insulation system of traction Motor type IM3302AZ for RCF MEMU Project received from PS&EMU Directorate note No.EL/1.3.16.7/ON BOARD/RCF/BHEL dtd. 25.09.2020 had been examined in reference with respective IEC and contract specification. Comments on Motorette testing for BHEL project has been communicated to PS & EMU Directorate vide note no. EL/3.2.182/OTM/163/BHEL dated 16.10.2020.
- 6.3. Clarifications on design document related to Motorette testing on insulation system and other issues of traction Motor type IM3302BZ for ICF AC EMU Project have been received from BHEL through PS&EMU Dte's notes No.EL/1.3.16.7/3-φ EMU/ICF/BHEL dated 26.08.2020 and EL/1.3.16.7/3-φ EMU/ICF/BHEL dated 28.09.2020 had been examined in reference with respective IEC and contract specification. Comments on Motorette testing and other issues have been communicated to PS & EMU Dte vide note No.EL/3.2.182/IM3302BZ/BHEL dt. 20.10.2020.
- 6.4. Design document of traction Motor type HTM 2502V17 of M/s Hind Rectifiers for 8-Wheeler Diesel Electric Tower Car submitted by TI Directorate vide note No. RDSO-TIOLKO(OHE)/06/2020-O/o PED/TI/RDSO dated 10.09.2020 against DMW's Purchase order No.02192667100131 dated 15.01.2020. Design document of Traction motor has


been examined in reference with ICF, Chennai specification No.ICF/MD/SPEC/300 and comments have been communicated to TI Directorate vide note no. EL/3.2.172/DETC/HR dated 20.10.2020.

- 6.5. Design document of traction Motor Model ZD126J of M/s CRRC-Pioneer, Rewari for 8-Wheeler Diesel Electric Tower Car submitted by TI Directorate vide note No. RDSO-TIOLKO(OHE)/06/2020-O/o PED/TI/RDSO dated 10.09.2020 against DMW's Purchase order No.02192667100132 dated 15.01.2020. Design document of Traction motor has been examined in reference with ICF, Chennai specification No.ICF/MD/SPEC/300 and comments have been communicated to TI Directorate vide note no. EL/3.2.172/DETC/CRRC dated 28.10.2020.
- 6.6. Capability cum capacity assessment of M/s Faiveley Transport Rail Technologies India Limited, Hosur for fresh vendor registration reference ID:831 dt. 25.11.2019 for manufacturing and supply of EP Assisted brake system for 3-phase Electric locomotive application compatible with EP assisted brake system on coaches was conducted on-line on 12.10.2020. Capability report has been prepared and submitted on 23.10.2020.
- 6.7. Capability cum capacity assessment of M/s Mersen India Pvt. Limited, Bangalore for fresh vendor registration reference ID:818 dt.13.11.2019 for manufacturing and supply of High Reach Pantograph for electric locomotives was conducted on-line on 12.10.2020. Capability report has been prepared and submitted on 28.10.2020.
- 6.8. RDSO vide letter no. EL/3.2.19/3-Phase/CRRC dtd. 30.09.20 has closed the case of M/s CRRC for fresh registration of item computer/microprocessor controlled air brake system with advance feature for 3-phase electric locomotives. Same has been informed to firm indicating the deficiencies. The reply of firm's letters dated 01.10.20 & 13.10.2020 has also been communicated vide letter no. EL/3.2.19/3-Phase/CRRC dtd. 26.10.20.
- 6.9. M/s Etranz Global, Bangalore has withdrawn their on line application dated 19.06.2020 for development of functionally equivalent PCB cards. Accordingly, RDSO has closed the case of M/s Etranz Global on 01.10.2020 and has been communicated to firm.

Encl: Annexure I, II & III


Warm Regards'

Yours sincerely,


(Sanjiv Swarup)

**Shri Rajesh Tiwari,
Member Traction,
Railway Board, Rail Bhavan,
New Delhi - 110 001**

Copy for kind information to-
Additional Member (Traction), Railway Board, New Delhi.


(Sanjiv Swarup)
Pr.Exe.Dir.Stds. Electrical

Status of un-modified motor support in WAP7 & WAG9/9H three phase locomotives

Position on: 29.10.2020

Rly	Shed	TM location	WAP7	WAG9H	Total no. of bogies	Balance to be modified	PDC
CR	AQ	1,2	28	204	232	17	Dec'20
		3	30	257	287	165	
	KYN	3	0	96	96	96	
ECR	GMO	3	0	4.5	9	15	
SCR	LGD	3	0	116	116	116	
	KZJ	3/4	0	100	200	20	
SER	TATA	3	0	49	44	05	
SECR	BIA	3/4	0	57	114	15	

Note: Following sheds have already modified motor support in all locations of bogies.

HWH, WAT, LDH, CNB, BRC, ED, BNDM, SRC, ET, NKJ, RPM, TKD, BSL, GZB.

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	29	13	0	16
2	AQ	152	92	60	9
3	KYN	69	16	53	0
4	GMO	171	02	166	03
5	WAT	175	45	87	43
6	LDH	129	22	0	107
7	CNB	93	12	0	81
8	LGD	125	28	51	46
9	KZJ	100	38	14	48
10	TATA	133	0	113	20
11	BIA	114	38	56	20
12	TKD	103	82	0	21
13	NKJ	08	03	01	04
14	BNDM	19	0	0	19
Total		1475	409	619	456

Position of Provision of 2 High Reach Pantograph in electric locomotives as on 29.10.2020

RLY	Shed	Cummulative position. How many locos with type of loco and its number provided with 2 HRPTs so far	Population of HRPTs
CR	AQ	28 WAG-9 32005, 31264, 32032, 32052, 31114, 31116, 32073, 31271, 31276, 31981, 31110, 32374, 31280, 31027, 31270, 31277, 31439, 31273, 31484, 31359, 31076, 31464, 31224, 31278, 31259, 31104, 31111, 31115	58
CR	KYN	12 WAG9 (32194, 31575, 32431, 31453, 31384, 32262, 31387, 32242, 31382, 31367, 31584, 31450)	25
CR	BSL	18 WAG9 (31560, 31406, 31738, 31642, 31403, 31516, 32401, 31402, 31404, 31405, 32432, 32273, 32429, 31645, 32274, 32377, 32270, 41043)	36
NR	LDH	23 WAG9 (32142, 32387, 32455, 31665, 32166, 32286, 32315, 32263, 32246, 32317, 32436, 32454, 32585, 32283, 32252, 32397, 32584, 32261, 32680, 32186, 32383, 32193, 32313) 3 WAG-7 (24590, 24583, 24580)	50
NR	TKD/D	10 WAP1 (22024, 22028, 22029, 22036, 22039, 22040, 22049, 22050, 22056, 22076) 1 WAP4 (22345)	33
NR	GZB	23 WAP5 (30001, 30011, 30014, 30018, 30021, 30022, 30024, 30028, 30030, 30043, 30098, 30100, 30132, 30133, 30135, 30141, 30146, 30149, 30163, 30164, 30165, 30187, 30188)	47
NR	KJGY	4 WAG-9 (32805, 32714, 32804, 32803)	8
NCR	JHS		21
NCR	CNB	25 WAG9 (32265, 32394, 32233, 32229, 32549, 32433, 32291, 32308, 32268, 32338, 32645, 32318, 32266, 32346, 32244, 32446, 32307, 32545, 32256, 32309, 32255, 32448, 32550, 32398, 32287.)	50
ER	ASN	0	0
ER	HWH	0	0
ER	BWN	16 WAG9 (31619, 31416, 32515, 32563, 32516, 32560, 31418, 31409, 32557, 32451, 34015, 34011, 32450, 32562, 31551, 32449)	33
ECR	GMO	In 17 WAG9 Locomotive both side high reach Pantograph provided. (1. 32289, 2. 32339, 3. 32652, 4. 31853, 5. 31473, 6. 31859, 7. 31857, 8. 31509, 9. 31533, 10. 31488, 11. 31413, 12. 31834, 13. 31508 14. 31489, 15. 31546, 16. 31532, 17. 31467)	35
ECR	MGS	3(WAG7-27038, 27032, 27057)	6
ECR	BJU	5 WAG-9 (32334, 32444, 32445, 32457, 32340)	10
ECOR	ANGL	0	2
ECOR	VSKP	10 WAG-9 (31625, 32607, 32810, 32809, 31623, 32693, 32690, 31987, 32682, 32683)	20

SCR	KZJ	23 WAG-9 (34001, 34002, 32542,32247, 32458, 32325, 32718, 32280, 32408, 32410,32649, 32389 GY,32279,32520,32461, 32282,32456, 32044 GY, 32695 32720,32322,32323) (32066 GY HRPTs Provided by ELS/LGD)	46
SCR	LGD	17 WAG9 (32700, 31143, 32367, 32655, 32480, 32418,32681,32653, 32066 GY , 32413, 32481,32670,32363,32798,32512,32513,.....)	43
SCR	BZA	03 WAG-7 (28249,28424,28464)	8
SER	BKSC	4 WAG-9 - 32755, 32672,32521, 32522	13
SER	BNDM	4 WAG9 -32655,32681,32653,32700	11
SER	SRC	In 05 WAP7 locomotives both side High Reach Pantograph provided (as on 29.10.2020) (30600, 37320, 37324, 37326, 37336)	12
SER	TATA	09 WAG9 (32324, 32647, 32582, 31432, 32576, 31716, 31899, 31425, 31603)	19
SER	ROU	03 WAG9 (32597,32281,32302)	29
SECR	BIA	10 WAG-9H (32688, 31844,31806,32679,32757,32807, 32807, 31886,)	32
SR	AJJ	0	0
SR	ED	6 WAG7 (27460 , 27486 , 28027,27491 , 27271,)	12
SR	RPM	0	0
WCR	ET	3 WAP 7 (39006, 39097 , 37054)	8
WCR	NKJ	5 nos WAG-9 (31943, 32290, 32468 , 32070,32514)	17
WCR	TKD	29 WAG9 (31807, 31415, 31185,32303, 32251, 32775, 32331, 31210, 32294, 31183,31186, 32773, 31196,31607,31471,31181, 31297, 32335,31614, 32170, 32264, 32295, 32332, 31610, 31170, 32321,32654,31503,31634)	60
WR	BL	5 nos- WAP-4 (22293, 22324, 22351,22344' 22279) 8 WAG-7 (28727, 28621, 28752, 24691,28726,24689,28640,28619)	64
WR	BRC	1 WAP-5 (30185) 29 WAP-7 (30470, 30473, 30474, 30480, 30526, 30527, 30531, 30569, 30574, 30585, 30598, 30634, 30637, 30719, 30759, 30761, 30767, 37111, 37126, 37128, 37163, 37164, 37175, 37302, 37303, 39018, 39027, 39065, 39103)	144
TOTAL	IR	WAG9=262 WAP7=37 WAP5= 24 WAG7=23 WAP4=6 WAP1=10	952