

सुनील कुमार
प्रधान कार्यकारी निदेशक मानक विद्युत

Sunil Kumar
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: 03.08.2021

प्रिय श्री जैन,

Sub: PCDO for the month of July, 2021.

1.0 HIGHLIGHTS

Nil

2.0 DEVELOPMENTAL ACTIVITIES

- 2.1 Design, Drawing & BOM submitted by M/s DRE for manufacture and supply of High Reach Pantograph for Electric Locomotive are found generally in order. RDSO vide letter EL/2.2.1/High Reach/DRE dated 01.07.2021, has advised the firm to develop prototype unit, submit ITR & offer for prototype testing.
- 2.2 Approval of capability assessment of M/s. Sequoia Safety has been accorded. Vide RDSO letter No. EL/2.2.1/High Reach/Sequoia dated 28.07.2021; firm has been advised to submit design, drawings and Bill of Material.
- 2.3 M/s Hind Rectifier submitted QAP, BOM & GA drawing for approval of 2x130 KVA SIV. RDSO vide letter no. EL/1.2.9.1/SIV/Hind dated 02.07.2021 advised for some clarifications.
- 2.4 M/s Medha submitted design documents & type test protocol of 2X130 KVA SIV as advised by RDSO which were found generally in order. Firm also submitted QAP. RDSO vide letter no. EL/1.2.9.1/SIV/Medha dated 08.07.2021 advised firm to develop prototype unit & submit ITR.
- 2.5 After conducting capability cum capacity assessment by RDSO of M/s Knorr-Bremse for development of EP assisted brake system for 3-phase electric locomotive application compatible with EP assisted brake system on coaches, firm has been advised to submit design & drawings/BOM documents vide letter no. EL/3.2.19/3-Phase/EP Assist/KBIL dated 14.07.2021.
- 2.6 After submitting clarifications of deficiencies by M/s Hind Rectifier for on line fresh vendor registration application for manufacturing and supply of EP assist brake system for 3-phase locomotive, RDSO advised for Capability assessment vide letter no. EL/3.2.19/3-Phase/EP Assist/Hind dated 14.07.2021.
- 2.7 M/s Knorr-Bremse has been advised of inclusion in the list of RDSO vendors for developmental orders for limited quantity for initial supply of six for the item EP assisted brake system for 3-phase electric locomotive application compatible with EP assisted brake system on coaches vide RDSO letter no. EL/3.2.19/3-Phase/EP Assist/KBIL dated 26.07.2021.
- 2.8 Firms request for the change in name of M/s Faiveley Transport Rail Technologies India Limited to M/s Faiveley Transport Rail Technologies India Private Limited has been approved by RDSO vide letter no. EL/3.2.19/3-Phase dated 02.07.2021 for six items.

- 2.9 Prototype test scheme, ITR and QAP submitted by M/s Hind Rectifiers for the item Computer/Microprocessor controlled air brake systems has been approved by RDSO vide letter no. EL/3.2.19/3-Phase/Hind dated 28.07.2021.
- 2.10 The fitment aspects of assembly/sub assemblies of EP assist brake system proposed by M/s KBIL and M/s FTRTIPL has been identified jointly with officials of CLW, RDSO & representative of the firms in WAP7 locomotive at ELS/CNB/NCR on 23.07.2021. Accordingly joint note no. nil dated 23.07.2021 issued.
- 2.11 Revised Design Documents submitted by M/s Medha, Hyderabad for Drive System and Components of IGBT based Three Phase Under Slung EMUs/MEMUs has been scrutinized. The observations/comments communicated to PS&EMU Directorate vide note no. EL/4.2.13/Under Slung MEMU/Medha dated 19.07.2021
- 2.12 Online application ID No. 1412 dated 05.04.2021 of M/s Timken Engineering and Research India Private Limited, Bangaluru for fresh vendor registration for manufacturing and supply of Gear Case Bearing of WAP-5 Locomotive was scrutinized and major as well as minor deficiencies has been noticed. The same has been communicated to firm vide this office letter no. EL/3.1.35/23(WAP-5 G.C. Bearing)/Timken India dated 22.07.2021
- 2.13 Revised Design Documents submitted by M/s BHEL, Bhopal for Drive System and Components of IGBT based Three Phase On Board EMU/MEMU has been scrutinized. The observations/comments communicated to PS&EMU Directorate vide note no. EL/4.2.13 (EMU/BHEL) dated 30.06.2021
- 2.14 Successful Capacity/Capability assessment of M/s Signotron Pvt. Ltd., Kolkata has been done on 13.07.2021 for manufacturing and supply of LED based twin beam head light. The same is communicated to firm vide letter no. EL/6.11.1 (Signotron) dated 13.07.2021
- 2.15 A note to Testing Dte. for adhesion, rating & performance trial of WAG9HH fitted with up gradation kit of M/s BHEL over SER has been sent vide this office note no EL/3.1.35/4/WAG9HH dated 12.07.2021.
- 2.16 RDSO vide letter no. EL/3.1.28(DML),dated 02.07.2021 communicated Zonal Railways scheme of ELS/BSL/CR, KPAWS/ER, ELS/AJJ/SR, LW/PER/SR & ELS/NKJ/WCR for Conversion of WAM4/WAG5 into Battery cum Electric Locomotives as per availability & suitability of equipment to meet the shunting or other requirement.
- 2.17 Reply of Electrical Dte/RDSO to Railway Board has been given on 'Key action points on National Programme on Advanced Chemistry Cell (ACC) Battery Storage' vide letter no. EL/3.1.28 (DML), dated 06.07.2021.
- 2.18 Clearance to M/s ABB & M/s Siemens make 1250 kVA transformers to be supplied against RCF PO no. 02201091100312 dated 01.03.2021 for On-board MEMUs have been given vide note no. EL/ 3.2.1/ Indig. EMU/Medha dated 29.07.2021.
- 2.19 Capacity cum capability assessment of M/s P.P. Industries Pvt. Ltd., Bhatinda has been carried out jointly with CLW at firm's works on 08.07.2021 & 09.07.2021 against their application for manufacture and supply of 7775 kVA 3-phase locomotive transformer.
- 2.20 Design document of M/s Siechem make Fire Survival Cable submitted by M/s Medha through PS & EMU Dte. vide note no. EL/1.3.16.7/On Board MEMU/Medha-RCF, dated 06.05.2021 have been scrutinized & comments on same have been given vide this office letter no. EL/8.1.25.1/On-Board MEMU/Medha, dated 15.07.2021.
- 2.21 Design document of unscreened multi core cable for On board MEMU project of ICF with M/s BHEL Electric received through Director/MRVC note no. EL/1.3.16.7/3-phse MEMU/ICF/BHEL, dated 17.06.2021 have been scrutinized & comments on same have been given vide this office letter no. EL/8.1.25.1/3-Ph MEMU/RCF/BHEL, dated 16.07.2021.

- 2.22 M/s Hind Rectifiers Limited, vide their letter no. HRL/PSP/EoTT/12721 dated 12.07.2021, has submitted revised design documents No. HRT/EoTT-DD/rev-3 dt.10.07.21 for End of Train Telemetry (EoTT) system. The document has been examined and approved provisionally vide letter no. EL/4.2.15/EoTT/HRL dated 15.07.2021.
- 2.23 Prototype testing of EoTT system offered by M/s Signotron had been carried out in-house from 23.06.2021 to 28.06.2021 as per approved type test protocol. Shortcomings observed during prototype testing have been communicated to firm vide letter No. EL/4.2.15/EoTT/Signotron dt.06.07.2021 for compliance by firm. Outsourced type tests on EoTT system are under progress.
- 2.24 M/s Medha had submitted revised design document of EoTT system with document ID MET384/DD/Feb2021, Rev. 03 dated 21.06.21 vide letter no. MET:RDSO:2885:21 dated 23.06.2021 & 06.07.2021. Submitted documents have been scrutinized and comments have been communicated vide RDSO's letter no. EL/4.2.15/EoTT/Medha dated 14.07.2021.
- 2.25 General guidelines for fixed type repeater has been prepared and circulated vide letter No. EL/4.2.15/EoTT dated 23.07.2021 to all stake holders of End of Train Telemetry (EoTT) system and requested them to give their valuable comments on draft guidelines of Fixed/Track-side Repeater so that same can be finalized by RDSO.

3.0 RELIABILITY IMPROVEMENT:

- 3.1 Draft Modification Sheet No. RDSO/2021/EL/MS/XXXX Rev.0 dated 28.07.2021 for strengthening of less thickness compressor mounting leg has been sent to Zonal Railway/PUs and Bogies Manufactures for comments/suggestions.
- 3.2 CLW has been requested to review the performance and also consider penal action against M/s Yash Capacitors Ltd., Nasik as per the extant guideline of CLW for repeated failure of Electrolytic Capacitor reported by SER in three phase locomotive vide this office letter no. EL/11.5.5/21 dated 20.07.2021.
- 3.3 M/s BTIPL has been advised to address the "Angle Transmitter Failure" issue reported by WR in M/s BT propulsion system vide this office letter no. EL/3.1.35/17/BT dated 13.07.2021.
- 3.4 Minutes of Meeting held through Video Conferencing on 18.06.2021 regarding failure & operational issue of WAG12B locomotive has been issued vide this office letter no. EL/3.1.35/24 dated 02.07.2021.
- 3.5 A letter to M/s MELPL has been issued regarding OHE voltage and current fluctuation issue in different TSS of IR vide this office note no EL/3.1.35/24 dated 29.07.2021.
- 3.6 Virtual Meeting with M/s AAL and ELS/ CNB on repetitive failures of M/s AAL make speedometer in ELS/CNB based locomotives was held on 30.06.2021 & minutes of meeting was prepared & circulated to Zonal railways vide letter No.EL/2.2.9/10, dated 30.07.2021.
- 3.7 Virtual Meeting with M/s Laxven and ELS/ BRC/WR on high failure rate of M/s Laxven make speedometer in ELS/BRC based locomotives was held on 12.07.2021 & minutes of meeting was prepared & circulated to Zonal Railways vide letter no EL/2.2.9/10, dated 30.07.2021.
- 3.8 Revision of maintenance kit of GR/SMGR – Based on the comments received from various Zonal Railways, revised kit of GR/SMGR has been prepared. The items being deleted under various schedules have been compiled and circulated to Zonal Railways vide letter no. EL/3.2.30 dated 09.07.2021 for comments before finalization.

4.0 SPECIFICATION/STR

- 4.1 RDSO has uploaded the final draft specification bearing no: ELRS/SPEC/SPM/0002(Rev.5) titled "Specification for Microprocessor based Electronic speed cum Energy Monitoring System" along with reasoned documents on RDSO website for suggestion/comments besides sending to OEMs/prospective vendors vide this office letter no. EL/2.2.9/10, dated 12.07.2021.

5.0 PROTOTYPE TESTING/QUALITY AUDIT

- 5.1 Validation of some non-complied functionalities/testing of Prototype unit of EoTT system has been carried out at M/s PPS International from 23.07.2021 to 24.07.2021 by RDSO, Lucknow as per Provisional Approved test protocol No.TP/EoTT/01 Rev. 0 dt. 02.06.2021 and RDSO FRS NO.RDSO/2019/EL/FRS/0025, Rev.'0' issued on 25.06.2019.
- 5.2 Prototype testing of indigenously developed 3-Phase Locomotive Traction Motor Bearing for TM type 6FRA6068' manufactured by M/s Schaeffler India limited, Maneja has been carried out by RDSO from 07.07.2021 to 10.07.2021. Prototype test results has been examined and found to be generally in order. Prototype clearance given vide letter no. EL/2.2.13/FAG/NU2236 dated 27.07.2021 for fitment and field trial.
- 5.3 Prototype Testing of 6FRA6068 Traction Motors manufactured by M/s Bharat Bijlee/Mumbai were carried out against CLW PO No.70190052100124 dated 06.06.2019 from 13.07.2021 to 20.07.2021 at firm's premises at Mumbai jointly by RDSO & CLW. Type test report and joint note has been submitted to CLW for further action at their end.

6.0 OTHER ITEMS

- 6.1 IIT/Kharagpur has again reminded to return unutilized amount balance of Rs.8161805/- to this office pertains with project "Aerodynamic Design of Traction Rolling Stock with speed potential of 250 km/h (upgradable to 350 km/h)" vide this office letter no. EL/8.5.17/2/A1 dated 27.07.2021.
- 6.2 IIT/Delhi has been asked to update deliverables on project "Critical evaluation of functionality of Electronic System of three phase locomotive" vide this office letter no. EL/8.5.17/2/A2 dated 13.07.2021.
- 6.3 PS & EMU Directorate vide note no. EL/1.3.16.7/ON-BOARD MEMU/Medha-RCF dtd.04.05.201 had forwarded the design documents of Traction Motor type TME 48-45-6 submitted by M/s Medha against RCF purchase order for supply of electrics of on-board MEMU. Submitted documents have been examined & comments were communicated to PS & EMU Directorate vide note no. EL/3.2.182 /On-Board/163/Medha-RCF dated 06.07.2021
- 6.4 RDSO has attended on-line Video Conference conducted by CLW on 20.07.2021 for development of alternate design motor for WAP7 & WAG9 Locomotives and Draft Specification for stamping for 6FRA-6068 TMs. In this regard, RDSO vide its letter No.EL/2.2.8 dt. 22.07.2021 has requested CLW to send complete insulation scheme of traction motors of 9000 HP locomotives used by M/s Siemens, M/s BHEL & M/s Medha to evaluate the alternate design of insulation scheme.
- 6.5 BLW, vide their email dated 16.07.21 has sent the pre-bid query of various vendor for tendering process of further 740 numbers EoTT systems. Comments on pre-bid queries have been sent to BLW vide RDSO's letter no. EL/4.2.15/EoTT dated 19.07.2021
- 6.6 PCEE/BLW has visited RDSO on 17.07.2021 to discuss the various issues pertaining to Locomotive. Minutes of Meeting has been issued vide RDSO's letter no. EL/8.4.8.2 dated 20.07.21.

6.7 PS & EMU Directorate vide note no. EL/1.3.16.7/ON BOARD/RCF/BHEL dated 13.07.2021 had forwarded the clarifications related to design documents of Traction Motor type IM3302AZ/BZ submitted by M/s BHEL against RCF MEMU & ICF EMU purchase order. Submitted documents had been examined in reference with technical specification and related reference standards. Comments were communicated to PS & EMU Directorate vide note no. EL/3.2.182/OTM/163/BHEL dated 27.07.2021.

Encl: Annexure I, II & III

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Yours sincerely,

(Sunil Kumar)

**Shri Rahul Jain,
Member Traction & Rolling Stock,
Railway Board, Rail Bhavan,
New Delhi - 110 001**

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

**(Sunil Kumar)
Pr.Exe.Dir.Stds. Electrical**

Annexure-I**Status of Un-modified Motor Support in WAP-7 & WAG-9/9H Three Phase Locomotives**

Rly	Shed	TM location	WAP7	WAG9H	Total no. of bogies	Balance to be modified	PDC
CR	AQ	3	30	257	287	131	March'22
	KYN	3	0	29	58	6	Sep' 21
SCR	KZJ	3/4	0	200	200	20	May21
SECR	BIA	3/4	0	57	114	14	Dec'21

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, GMO, LGD.

Annexure- II**Status of Modified/Un-modified Brake Lever of WAG-9/9H Three Phase 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	30	13	0	17
2	AQ	161	92	58	9
3	KYN	29	18	5	6
4	GMO	239	03	162	74
5	WAT	185	22	108	55
6	LDH	129	22	0	107
7	CNB	95	12	0	83
8	LGD	130	28	50	52
9	KZJ	100	38	14	48
10	TATA	133	0	113	20
11	BIA	95	40	55	0
12	TKD	103	82	0	21
13	NKJ	08	03	01	04
14	BNDM	82	0	19	63

Position of Provision of 2 High Reach Pantograph in electric locomotives as on 28.07.2021

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	16 WAG9 (32262, 32242, 31584, 31450, 32194, 31382, 31648, 32107)	17
CR	BSL	23 WAG9 (31560, 31406, 31738, 31642, 31403, 31516, 32401, 31402, 31404, 31405, 32432, 32273, 32429, 31645, 32274, 32377, 32270, 41043, 32278, 31769, 32381, 32355, 41047)	47
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	20 WAP5 (30001, 30011, 30018, 30021, 30022, 30024, 30030, 30043, 30098, 30100, 30132, 30133, 30135, 30146, 30149, 30163, 30164, 30165, 30187, 30188) 08 WAP7 (30747, 37054, 37264, 37314, 37378, 39006, 39039, 39097)	56
NR	KJGY	4 WAG-9 (32805, 32714, 32804, 32803)	8
NCR	JHS		21
NCR	CNB	25 WAG9 (32265, 32394, 32233, 32229, 32433, 32291, 32308, 32268, 32338, 32645, 32266, 32346, 32244, 32446, 32256, 32309, 32255, 32448, 32550, 32287.)-Both side HRPTs Rev-2 (32549, 32318, 32307, 32545, 32398-PT2 HRPTs Rev-1)	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	4 WAG-9 (31625, 31623, 32693, 31987) at both sides.	8
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	15 WAG9 (31143, 32367, 32480, 32418, 32413, 32481, 32670, 32363, 32798, 32512, 32513, 31618, 31444, 32928, 41019)	33
SCR	BZA	04 WAG-7 (28249, 28424, -on loco) 28464, 28255(PT2)-shop floor)	7
SER	BKSC	2 WAG-9 - 32755, 32672	11

SER	BNDM	4 WAG9-32655,32681,32653,32700	11
SER	SRC	0	2
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 , 27471, 27492)	12
SR	RPM	0	0
WCR	ET	3 WAG 9 (31943,32468,32070)	10
WCR	NKJ	4nos WAG-9 (32027,32031,32290,32223)	10
WCR	TKD	29 WAG9 (31170,31181,31183,31186,31196,31210,31297,31415,31471,31503,31607,31610,31614,31634,31807,32170,32251,32264,32294,32295,32303,32321,32331,32332,32335,32654,32656,32773,32775)	60
WR	BL	13 WAG-7 (28727, , 28752, 24691,28726,24689,28640,28619,28649 and 10 WAG-9-31575,32431,31453,31384,31981,32005,32032,32052,32073,32374)	79
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)	122
TOTAL	IR	WAG9=273 WAP7=37 WAP5= 21 WAG7=29 WAP4=1 WAP1=10	917