

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: 03.08.2020

Dear Sri Tiwariji,

Sub: PCDO for the month of July, 2020.

1.0 HIGHLIGHTS

Railway Board sanction for introduction of 12000HP WAG11 Ver. 1 locomotive up to maximum speed of 95 km/h has been obtained vide Railway Board letter no. 2019/CEDO/SR/21(1) dated 02.07.2020.

2.0 RELIABILITY IMPROVEMENT

- 2.1 M/s Medha has been advised to improve the reliability of 3-phase IGBT based loco propulsion equipments vide letter no. EL/11.5.5/21 dated 07.07.2020.
- 2.2 M/s Siemens has been advised to improve the reliability of Hotel Load Converter of 3-phase IGBT based locomotive vide letter no. EL/11.5.5/6/Siemens dated 07.07.2020.
- 2.3 Meeting has been arranged to discuss the operational issues of WAG12B locomotive with M/s MELPL and CELE/ECR on 22.07.2020 through video conferencing.
- 2.4 A proposal for reliability improvement of roof-bars to reduce the cases of flashing of roof line insulators including HOM insulators has been prepared and circulated to Zonal Railways for comments vide letter no. EL/2.2.21 dated 22.7.2020.
- 2.5 CLW vide letter no. CLW/TM/18059/Part-1 dated 05.05.2020 had requested RDSO to review the Modification Sheet No. RDSO/2012/EL/MS/0415 (Rev-0) Amendment 3 (Rev-1) dated 07.02.2019 (table D5) of End Shield NDE ID as 214.948 to 214.970 mm in Drawing No. OTWD.096.003 Alt. 9. The issue has been examined by RDSO and observed that no modification is required. Accordingly, CLW was advised vide RDSO's letter no. EL/3.2.182 dated 08.07.2020 to alter the drawing as per Modification Sheet No. RDSO/2012/EL/MS/0415 (Rev-0) Amendment 3 (Rev-1) dated 07.02.2019 (table D5).
- 2.6 RDSO vide letter no. EL/3.2.19/ 3phase dtd. 08.07.2020, the addendum I on modification sheet no RDSO/2012/EL/MS/0412 Rev 0 has been issued and circulated to ZRs, Pus and same has also been kept in RDSO website.
- 2.7 RDSO vide letter no. EL/3.2.19/3-Phase dtd. 15.07.20, issued the letter to judge the performance of Indfos/Danfoss make pressure switches in the 3-phase electric locomotive. As per SCR discussion during MSG it was advised that some more sheds; ELS/AQ, TATA, GMO, BRC, RPM, TKD, GZB, BIA, VSKP & HWH may also provide Indfos/Danfoss make pressure switches in 2 to 5 Locos and monitor the performance for a reasonable period. Further, these sheds shall also give the performance of Eaton/Square D make pressure switches provided in 3-phase locos under their control. If its performance reported is found satisfactory then further action will be taken.

3.0 DEVELOPMENTAL ACTIVITIES

- 3.1 Pre delivery of inspection check sheet for 12000HP WAG12B locomotive issued in Feb. 2020 has been reviewed and communicated to MELPL vide letter no. EL/3.1.35/24 dated 22.07.2020.
- 3.2 Clarification on CCRS queries on WAG9HH class of locomotive has been provided vide letter no. EL/3.1.35/4 WAG9HH dated 01.07.2020 and CCRS has forwarded the same for sanction to Railway Board.
- 3.3 Document for registration of M/s Elixir, Bangalore for development of functionally equivalent PCB Cards of GTO based Converters and MICAS VCU in Three Phase Locomotives has been scrutinized and deficiencies has been communicated to firm vide letter no. EL/11.5.5/14/Elixir dated 09.07.2020.
- 3.4 Document for registration of M/s Etranzz, Bangalore for development of functionally equivalent PCB Cards of GTO based Converters and MICAS VCU in Three Phase Locomotives has been scrutinized and deficiencies has been communicated to firm vide letter no. EL/11.5.5/14/Etranzz dated 16.07.2020.
- 3.5 RDSO representative witnessed the field trial of M/s LWT make DPWCS at ELS/ WAT/ ECoR jointly with CLW & ECoR from 03.7.2020 to 13.7.2020.
- 3.6 Prototype testing of Elastic Ring for 3-phase Electric Locomotive manufactured by M/s. Electroplast, 1/34, South Side G.T.Road, Industrial Area, Ghaziabad-201 001 has been cleared for field trial vide letter no. EL/3.1.35/12 (Electroplast) dated 22.07.2020.
- 3.7 Development of End of Train Telemetry(EoTT)
 - i) Design documents of M/s Tata Power SED for End of Train Telemetry(EoTT) Received through email on 16.06.2020 had been examined. Comments have been communicated to firm vide letter no. No. EL/4.2.15/EoTT/TATA dated 07.07.2020.
 - ii) The End of Train Telemetry (EoTT) design documents No. D5101-0001-Design_Document-V2_3_1dt. 14.07.2020, Type Test Protocol document No. D5101-0002-Type Test protocol-V2_1_2 dt. 14.07.2020 & Routine Test Protocol document No. D5101-0003-Routine Test protocol-V1_0_2 dt. 14.07.2020 of M/s EMS Industries submitted by M/s Signotron vide their letter dt. 13.07.2020 above has been examined in reference with FRS No. RDSO/2019/EL/FRS/0025, Rev'0' dt. 25.06.2019. The document has been approved provisionally vide letter No. EL/4.2.15/EoTT/Signotron dated 29.07.2020.
- 3.8 RDSO vide letter no. EL/3.2.15/3-phase (AIML), M/s. Anest Iwata Motherson Pvt. Limited has been requested to expedite the fitment of oil lubricated compressor model "RR1750" in DLW and same has been installed at DLW in electric locomotive WAG-9 no 41065 in end of July.
- 3.9 After successfully fitment of supplied by M/s Hind Rectifier/ Mumbai on locomotive no. 22307 WAP-4 the commissioning and testing of 2 x 130 KVA SIV has been carried out at ELS/BSL. After successful field trial the 2 x 130 KVA SIV is working normal.
- 3.10 RDSO vide letter no. EL/2.2.1/High Reach/River dtd. 16.07.20, After scrutiny the design, drawing and BOM of High Reach Pantograph type IR-05HR for speed of 200 kmph as per Spec. No. EL/2007/EL/SPEC/0054, Rev.3 M/s. River Engineering Pvt. Ltd. has been advised to develop prototype unit for type testing and QAP verification.
- 3.11 RDSO vide letter no. EL/1.2.9.1/ABB dtd. 28.07.2020, firm has been advised to develop prototype unit, submit ITR (Internal test report) with prototype test protocol and offer for witnessing the prototype test along with QAP verification.
- 3.12 A tele-conference held with M/s ARC & M/s Lotus Wireless on 27.7.2020 to finalize the time lines for proving the interoperability among DPWCS of different makes.

4.0 SPECIFICATION/STR

- 4.1 In compliance to recommendations of AM(Traction), DG/RDSO, Vigilance, QA Mechanical & Electrical Dte. letter & note, following existing Specifications & STRs have been uploaded on RDSO website to get the comments from Industry/Zonal Railways/PUs for the purpose of revision to make these more generic.

Specifications

SN	Item description	Specification no.
1	Zero Halogen Low Smoke limited fire Survival flexible elastomeric Cable with copper conductor.	SPEC/E-14/04 Rev-1
2	Thin walled cable for three phase locomotive	CLW/ES/3/0458 Alt E (Set of single core cable)
		CLW/ES/3/0459 Alt A (Set of multi core cable)
3	Flexible Elastomeric Cable with copper conductor for power rolling stock (For working voltage up to & including 750 volts)	SPEC/E-14/01 Part-I, Rev-2 with amendment 1,2,3,4. Feb 1993.
4	Flexible Elastomeric Cable with copper conductor for power rolling stock (For working voltage above 750 volt up to & including 3000 volts)	SPEC/E-14/01 Part-II, Rev-2 with amendment 1 with appendix. Feb 1993.
5	Flexible HRPVC insulated cable with copper conductor for power rolling stock. (For working voltage up to & including 1500 Volts)	SPEC/E-14/01 Part-III, Rev-2 with amendment 1. Feb 1993.
6	Cable Transit System with EPDM Rubber Module in Electric Locomotive.	RDSO/2008/EL/SPEC/0067 Rev '2' of January 2015
7.	Thin Walled Flexible Elastomeric cables for working voltages upto 750 Volts & above 750 Volts upto 1.8/ 3.0 kV for Tap Changer Electric Locomotives , AC/DCMU, BG AC EMU/MEMU/ Coaching Stock)	ELRS/SPEC/ELC/0019, Rev. 4
8.	Development of functionally equivalent PCB Cards of GTO based Converters and MICAS VCU in Three Phase Locomotives	RDSO/2018/EL/SPEC/0139
9.	Spheriblocs used on three phase electric locomotives (WAP5, WAP7 & WAG9)	RDSO/2007/EL/SPEC /0051 (Rev.'3')
10.	Twin beam led headlight for electric locomotives	RDSO/2017/EL/SPEC/0134, Rev-2

Schedule of Technical Requirements (STR)

SN	Item description	Specification no.
1	Zero Halogen Low Smoke limited fire Survival flexible elastomeric Cable with copper conductor for Metro Coaches.	ELRS/STR/ZHLS/0007, July-2003
2	Thin Walled Flexible Chemical Cross Linked cable with Copper Conductors for working voltages up-to 1.8kV/3.0kV for Tap Changer Electric Locomotives/EMU.	RDSO/2007/EL/STR/0020, Rev. '0', March-2007
3	Cable Transit System with EPDM Rubber Module for Electric Locomotives/ EMU/ MEMU/ Metro.	RDSO/2014/EL/STR/0082, Rev. '0', April- 2015
4	Development of functionally equivalent PCB Cards of GTO based Converters and MICAS VCU in Three Phase Locomotives	RDSO/2018/EL/STR/0091

- 4.2 Draft of specification No. RDSO/2008/EL/SPEC/0062, Rev.3 -for Zirconium Copper Stamping for Shaft Mounted Copper Stamping type Resistance Ring design of Rotor for Traction Motor type 6 FRA6068 for WAG9/WAP7 locos along with reasoned document had been uploaded on RDSO website on 15.07.2020 for fifteen days for comments from PUs/Zonal Railways and vendors. RDSO vide letter No. EL/3.2.182 dated 15.07.2020 has also requested PUS/ZRs and vendors to submit the comments on the draft specification.

5.0 PROTOTYPE TESTING/QUALITY AUDIT

Nil

6.0 OTHER ITEMS

- 6.1 Based on the scrutiny of design document, type test protocol and type test reports of M/s JST make 2880 kVA Traction Transformer for Train 18 project, comments to PS&EMU Dte. have been given vide this office note no. EL/3.2.1/Train-set dated 17.7.2020.
- 6.2 Based on the technical scrutiny of design document of 1288 kVA Transformer of M/s CGPISL make for On-board MEMU project, clearance has been accorded vide note no. EL/ 3.2.1/ On-Board MEMU/CGPISL dated 28.7.2020.
- 6.3 Comments on Pre-Bid queries raised by M/s Medha and M/s TWL on tender no. 02201091 floated by RCF as per RDSO specification no. RDSO/PE/SPEC/EMU/0163-2012 (Rev. 1) along-with Addendums 1, 2 & 3 have been communicated vide note no. EL/3.2.1/Train-set dated 10.7.2020.
- 6.4 Comments based on the technical scrutiny of design documents of various cables for under-slung MEMUs submitted by M/s Medha has been communicated to PS&EMU Dte. vide note no. EL/8.1.25.1/Medha/Under-slung MEMU dated 08.7.2020.
- 6.5 Comments furnished on draft schedule of functional & technical requirements for private train operation to Carriage Dte. Vide note no. EL/8.1.25.1 dated 30.06.2020.
- 6.6 Comments on scope of work for consultancy tender to be invited for instrumentation portion of Dedicated Test Track furnished to TM Dte vide note no. EL/3.1.28 dated 20.07.2020.

- 6.7 Comments on the documents related to Operation, Maintenance & Safety of private train operation in IR furnished to Carriage Dte. Vide note no. EL/8.1.25.1 dated 07.07.2020.
- 6.8 CLW vide letter no. CLW/TM/9160 dated 17.06.2020 has submitted the test reports for use of alternate Kapton Polyimide film 150FCRC019 of M/s DuPont/USA and L50CR11 of M/s Kaneka/USA in place of existing film 150FCR019. Course of action to be taken by CLW for proposed alternate kapton Polyimide film of M/s DuPont & M/s Kaneka has been communicated to CLW vide RDSO's letter no. EL/2.2.8 dated 29.07.2020

Encl: Annexure I, II & III

Warm Regards'

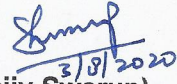
Yours sincerely,


3/8/2020

(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, Rail Bhawan, New Delhi.


3/8/2020

(Sanjiv Swarup)

Pr.Exe.Dir.Stds. Electrical

Annexure-I

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

Position on: 25.07.2020

Rly	Shed	TM location	WAP7	WAG9H	Total no. of bogies	Balance to be modified	PDC
CR	AQ	1,2	28	204	232	23	Dec'20
		3	30	257	287	194	
	KYN	3	0	96	96	96	
ECR	GMO	3	0	4.5	9	17	
SCR	LGD	3	84	206	290	154	
	KZJ	3	0	102	204	26	
SER	TATA	3	0	49	44	05	

Note: Following sheds have already modified motor support in all locations of bogies.
HWH, WAT, LDH, CNB, BRC, ED, BNDM, SRC, ET, NKJ, BIA, RPM, TKD, BSL, GZB.

Annexure- II

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	156	75	81	11
3	KYN	69	16	53	0
4	GMO	154	02	149	03
5	WAT	158	21.5	112.5	24
6	LDH	129	22	0	107
7	CNB	79	12	0	67
8	LGD	129	28	53	48
9	KZJ	102	40	14	48
10	TATA	133	0	113	20
11	BIA	140	108	0	32
12	TKD	103	82	0	21
13	NKJ	63	26	14	23
14	BNDM	19	0	0	19
Total		1463	445.5	589.5	439

Position of Provision of 2 High Reach Pantograph in electric locomotives on 30.07.2020

RLY	Shed	Cumulative position. How many locos with type of loco and its number provided with 2 HRPTs so far	Population of HRPTs
CR	AQ	24 WAG-9 32005, 31264, 32032, 32052, 31114, 31116, 32073, 31271, 31276, 31981, 31110, 32374, 32380, 31027, 31270, 31277, 31439, 31273, 31484, 31359, 31076, 31464, 31224, 31278	58
CR	KYN	11 WAG9 (31575, 32431, 31453, 31384, 32262, 31387, 32242, 31382, 31367, 31584, 31450)	27
CR	BSL	16 WAG9 (31560, 31406, 31738, 31642, 31403, 31516, 32401, 31402, 31404, 31405, 32432, 32273, 32429,)	35
NR	LDH	22 WAG9 (32142, 32387, 32455, 31665, 32166, 32286, 32315, 32263, 32246, 32317, 32436, 32454, 32585, 32283, 32252, 32397, 32584, 32261, 32680, 32186, 32383, 32193) 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)	25
NR	GZB	22 WAP5 (30001, 30002, 30003, 30011, 30014, 30018, 30021, 30022, 30024, 30025, 30043, 30098, 30100, 30132, 30133, 30135, 30136, 30141, 30146, 30149, 30164, 30165)	47
NR	KJGY	4 WAG-9 (32805, 32714, 32804, 32803)	8
NCR	JHS	0	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,)	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)	21
SCR	KZJ	20 WAG-9 (34001, 34002, 32542, 32247, 32458, 32325, 32718, 32280, 32408, 32410, 32649, 32389 GY, 32279, 32520, 32461, 32282, 32456, 32044 GY, 32695 32720)	46
SCR	LGD	16 WAG9 (32700, 31143, 32367, 32655, 32480, 32418, 32681, 32653, 32066 GY, 32413, 32481, 32670,	44

SCR	BZA	32363, 32798, 32512, 32513)		
SER	BKSC	03 WAG-7 (28249,28424,28464)		8
SER	BNDM	3 WAG-9 - 32755, 32672,32521		14
		1 WAG9-32384		7
SER	SRC	In 03 WAP7 locomotives both side High Reach Pantograph provided (as on 25.07.2020) (37324, 37326, 37336)		12
SER	TATA	08 WAG9(32324, 32647, 32582, 31432, 32576, 31716, 31899,), 02 WAG7 (27602, 27597)		27
SER	ROU	03 WAG9 (32597,32281,32302)		29
SECR	BIA	8 WAG-9H (32688, 31844,31806,32679,32757,32807, 32807, 31886)		32
SR	AJJ	0		0
SR	ED	5 WAG7(27460 , 27486 , 28027,27491 , 27271)		12
SR	RPM	0		0
WCR	ET	2 WAP 7 (39006, 39097)		7
WCR	NKJ	5 nos WAG-9 (31943, 32290, 32468 , 32070,32514)		17
WCR	TKD	25 WAG9 (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,)		60
WR	BL	5 nos- WAP-4 (22293, 22324, 22351,22344' 22279) 7 WAG-7(28727, 28621, 28752, 24691,28726,24689,28640)		64
WR	BRC	1 WAP-5 (30185) 28 WAP-7 (30470, 30474, 30480, 30526, 30527, 30531, 30569, 30585, 30719, 30759, 30761, 30767, 37126, 37128, 37163, 37164, 37302, 37303, 39018, 39027, 39065, 39103, 37175, 30574, 30637, 37111, 30634)		144
TOTAL	IR	WAG9=238 WAP7=33 WAP5= 23 WAG7=28 WAP4=5 WAP1=10		951