

सुनील कुमार
प्रधान कार्यकारी निदेशक मानक विद्युत

Sunil Kumar

Principal Executive Director Stds. Electrical



सत्यमेव जयते

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन

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D.O.No.EL.8.5.10.1

Dt: 04.01.2021

प्रिय श्री तिवारी,

Sub: PCDO for the month of December, 2020.

नव वर्ष 2021 की हार्दिक शुभकामनाएं !

1.0 HIGHLIGHTS

One unit of EoTT system of M/s Siemens was fitted on Loco No. 28602(WAG7) of ELS/ANGL of ECoR. Trial of EoTT system provided in Loco No. 28602 was conducted from 29.11.2020 to 14.12.2020 by a team of RDSO, ECoR & M/s Siemens in Talcher- Paradeep section of ECoR. Display of BP pressure of LV, Odometer for fouling mark clearance, Emergency brake function and radio communication between HoT (fitted on Locomotive) & EoT (fitted on Last Vehicle) are observed to be worked satisfactory.

2.0 RELIABILITY IMPROVEMENT

- 2.1 Based on the field performance of traction motors with unusual sound measured/recorded by iron rod at BHEL/Bhopal, RDSO vide letter No.EL/2.2.23 dt. 28.12.2020 has communicated uniform practices for traction motor sound shall be measured/ recorded as per instructions laid down in IEC 60349-2, instead of iron rod or other method during the routine inspection at BHEL, Bhopal for DE/NDE bearing of SKF/FAG for 6FRA-6068 Traction motors.
- 2.2 A meeting with M/s SEIL held at RDSO on 06.11.2020 & Minutes of Meeting (MOM) has been sent to firm & CLW for compliance of decisions taken during the meeting vide letter no. EL/3.2.61 dated 04.12.2020.
- 2.3 Draft Revised Special Maintenance Instruction No. RDSO/2011/EL/SMI/0270, Rev. '1' for Axial Wear of serviceable Spheriblocs used in WAP5/WAP7/WAG9 Locomotives is circulated to Zonal Railways for comments/Suggestions vide letter no. EL/3.1.35/12 (SB) dated 13.12.2020.
- 2.4 New drawing with drawing No. SKEL-5043, Alt.'0' for Ring Gauge of Pinion Shaft of WAG-9/WAP-7 Locomotive is issued and sent to Zonal Railways & vendors vide letter no. EL/3.1.35/20 dated 22.12.2020.
- 2.5 To overcome the problem of breakage of vertical damper fixing arrangement a draft Modification Sheet No. RDSO/2007/EL/MS/XXXX, Rev. '0' is prepared and circulated to Zonal Railways vide letter no. EL/3.2.119 (Damper) dated 24.12.2020 for comments/Suggestions.
- 2.6 M/s BHEL has been instructed to resolve long pending reliability issues related with IGBT based propulsion equipments reported by ELS/TATA & ELS/RPM vide this office letter no. EL/3.1.35/17 (BHEL) dated 24.12.2020.
- 2.7 Meeting was held on 03.12.2020 through Web/Video Conference to discuss the reliability issues of M/s BHEL make propulsion equipments. Officers from ZRs, CLW, DLW and RDSO along with BHEL representative were participated in the meeting. MOM was issued vide this office letter no. EL/3.1.35/17 (BHEL) dated 15.12.2020.

- 2.8 Minutes of the Meeting, held on 12.11.2020 to discuss the reliability issues of different make Hotel Load Converter fitted in 3-phase IGBT based electric locomotives, was issued vide this office letter no. EL/11.5.5/21 dated 02.12.2020.

3.0 DEVELOPMENTAL ACTIVITIES

- 3.1 Three (03) units of EoTT system of M/s Signotron have been received at ELS/BNDM of SER on 31.12.2020. Fitment of one EoTT system is under progress in WAG9 Loco No.32812 and expected to be ready by 01.01.2021.
- 3.2 M/s PPS International vide their mail dt. 19.11.2020 has submitted design document No.EOTT – Design Doc-001, Rev.0, Ver. 1.0 dated 23.08.2020. The document has been examined in reference with FRS No.RDSO/2019/EL/FRS/0025, Rev'0' dt. 25.06.2019 and comments have been communicated vide letter No.EL/4.2.15/EoTT/PPS dated 15.12.2020.
- 3.3 M/s TATA has submitted revised technical document No.102600000420 version 1.2 submitted vide letter No.SED/D/INFRA/TR/04_06/2020 dt. 27.11.2020, received through mail dt. 01.12.2020 have been examined in reference with FRS No.RDSO/2019/EL/FRS/0025, Rev '0' dated 25.06.2019 and comments have been communicated vide letter No.EL/4.2.15/TATA dated 22/23.12.2020.
- 3.4 Draft communication protocol & minimum requirement of radio specification for ensuring interoperability of End of Train Telemetry(EoTT) system has been prepared and circulated to all concerned vide letter No.EL/4.2.15/EoTTdt.28.12.2020 for comments & suggestions by 10.01.2021.
- 3.5 RDSO vide letter No.EL/1.2.9.1/IC Electricals dtd. 17.12.2020, advised M/s IC Electricals Company (P) Limited to resubmit the compliance of the revised queries noticed regarding vendor registration for 2x130 KVA SIV. Firm vide e-mail dtd.21.12.2020 replied which is under scrutiny. Firm agreed for on line capability assessment vide letter dtd. 12.11.2020. Detail are awaited.
- 3.6 RDSO vide letter No.EL/2.2.1/High Reach/Haswell dtd. 18.12.20, M/s Haswell has been advised to resubmit the design document, drawing and BOM of the high reach pantograph being developed by the firm.
- 3.7 RDSO vide letter No.EL/2.2.1/High Reach/CRRC dtd. 18.12.2020, M/s CRRC Zhuzhou Locomotive Co. Ltd. has been once again advised to register with competent authority as mentioned in Para 1 (mentioned below) of Order (Public Procurement No.1) issued by Ministry of Finance Govt. of India, Department of Expenditure Public Procurement Division vide order No.F.No.6/18/2019-PPD, dated 23.07.2020. The Para 1 of aforesaid order states that "Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services(including consultancy services and non consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority, specified in Annex I" and submit certificate of registration for further processing of your online application for manufacture and supply of high reach pantograph by 31.12.2020 positively.
- 3.8 RDSO vide letter No.EL/3.2.19/3-Phase/Medha dtd. 22.12.2020, compliance of deficiency letter submitted by M/s Medha regarding development of brake system for 3-phase electric locomotives has been examined and deficiency advised to the firm.
- 3.9 RDSO vide letter No.EL/2.2.1/High Reach/River dtd. 21.12.2020, M/s River Engineering has been advised to submit compliance of advised details for further processing of firms online application for manufacture and supply of high reach pantograph by 31.12.2020.

- 3.10 RDSO vide letter No.EL/2.2.1/High Reach/ACCEL dtd. 22.12.2020, M/s ACCEL has been once again advised to submit the deficiency advised for further processing of on line application for manufacture and supply of High Reach Pantograph by 31.12.2020.
- 3.11 M/s BHEL, Bhopal was advised to re-submit design documents and type test protocol for convertor panel of WAG7 locomotive with regeneration after compliance of comments from RDSO vide letter No.EL/3.1.22/4, dated 17.12.2020.
- 3.12 RDSO vide letter No.EL/3.1.3/DPWDS, dated 17.12.2020, furnished the comments on type test report of M/s Medha make DPWCS for 3-phase Electric Locomotive submitted by CLW vide letter No.C-D&D/T/34(part)/Medha, dated 08.12.2020.
- 3.13 Comments on 'Internal test report of oil free compressor for Model RR20070 of (M) for 3-phase MEMU have been furnished to Director/Pn vide note No.EL/3.2.176/3, dated 16.12.2020.
- 3.14 M/s Siemens make Primary & Secondary Surge Arrester type 3EL2040-2RC31-4AA5 & 3EL2042-2RC21-4AA5 respectively have been cleared for use in Train-set to be supplied by M/s CAF vide note No.EL/3.2.1/Train-set dated 14.12.2020.
- 3.15 Design document of power and control cable for On board MEMU used in M/s BHEL make 25kV AC Microprocessor controlled IGBT based three phase propulsion have been scrutinized and status for same has been given to ED/PS & EMU vide note No.EL/8.1.25.1/On board MEMU/CGL, dated 03.12.2020.
- 3.16 The comments of Motive Power Runtrain simulation software programme was communicated vide No.EL/3.1.39/1, dated 17.12.2020.
- 3.17 RDSO official from Electric & Signal Dte visited ELS/CNB on 29.12.2020 to identify the space in various class of electric locomotives for fitment of on board TCAS equipments.
- 3.18 The design documents of Cable Transit System with EPDM rubber module of M/s CAF India was scrutinized & comments were furnished to PS&EMU Dte vide note No.EL/8.1.25/CAF/Train-18 dated 03.12.2020.
- 3.19 Online application ID No.1165 dated 24.10.2020 of M/s Alan Electronic Systems Pvt. Ltd., Maharashtra for fresh vendor registration for manufacturing and supply of LED Head Light for electric locomotives was scrutinized and accepted by competent authority for further processing with some minor deficiencies. The same has been communicated to firm vide this office letter No.EL/6.11.1 (AESPL) dated 29.12.2020.
- 3.20 Online application ID No.1231 dated 13.11.2020 of M/s Rayon Illuminations and Energy Solutions Pvt. Ltd., Maharashtra for fresh vendor registration for manufacturing and supply of LED Head Light for electric locomotives was scrutinized and accepted by competent authority for further processing with some minor deficiencies. The same has been communicated to firm vide this office letter No.EL/6.11.1 (RIESPL) dated 29.12.2020.
- 3.21 WAG9HH locomotive (90002, M/s Siemens make propulsion system) testing, commissioning and trial run has been done successfully from 16.12.2020 to 18.12.2020 at Tatanagar in the presence of RDSO official and joint note issued vide ELS/TATA letter No.nil dated 21.12.2020.
- 3.22 Approval for OGA drawing of Medha make IGBT based power converter for development of regenerative braking in WAG7 electric locomotive was given vide this office note No.EL/11.5.5/RGB/Medha dated 10.12.2020.

- 3.23 Capacity Cum Capability Assessment of M/s Elixir Engg./Banglore has been completed from 16.12.2020 to 17.12.2020 at Banglore and firm has been approved for development of functionally equivalent PCB cards for GTO based Converters and MICAS VCU in three phase Electric locomotive vide this office letter No.EL/11.5.5/14/Elixir dated 23.12.2020.
- 3.24 Capacity Cum Capability Assessment of M/s Think Circuit Railtech Pvt. Ltd./Banglore has been completed from 18.12.2020 to 19.12.2020 at Banglore.
- 3.25 Comments on design document of M/s BHEL for development of regenerative braking in WAG7 electric locomotive has been given vide EL/11.5.5/RGB/BHEL dated 10.12.2020.
- 3.26 Approval for design document of M/s BHEL for IGBT based converter for AC EMU has been given vide note No.EL/11.5.5/1/EMU/ICF/BHEL dated 09.12.2020.
- 3.27 Comments on design document of M/s CGL for Line and Traction converter Unit for IGBT based propulsion system and equipment for on Board MEMU has been intimated vide this office note No.EL/11.5.5/1/USMEMU/CGL dated 04.12.2020.

4.0 SPECIFICATION/STR

- 4.1 In compliance to Railway Board letter No.2015/Elect (TRS)/440/5(P4 Gear Ratio) dated 21.10.2020, RDSO has examined the feasibility of converting the existing WAP-1 /WAP-4 locos for mixed traffic usage. The feasibility report bearing No.RDSO/2020/EL/RM/0191(Rev. '0') including recommendations has been sent to Railway vide letter No.EL/3.1.39/1 dated 01.12.2020 for consideration of Board.
- 4.2 The final draft technical specification bearing No.RDSO/2020/EL/SPEC/0xxx (Rev.0) titled "Technical specification for Electric Hybrid (Electric + Battery) locomotives" along with reasoned documents has been uploaded on RDSO website for suggestion/comments from ZRs/PUs/Prospective vendors vide letter No.EL/3.1.28 (DML), dated 03.12.2020 besides sending to ZRs/PUs/Prospective vendors through email.
- 4.3 Draft revised copy of Specification No.RDSO/2017/EL/SPEC/0134 Rev. 02 for twin beam LED head light for Electric Locomotives & EMUs is uploaded on website for 30 days on 03.12.2020 and sent to Zonal Railways and vendors for comment/suggestion vide letter No.EL/6.11.1 dated 03.12.2020.
- 4.4 Specification for spheriblocs used in three phase locomotives is revised as Specification No.RDSO/2007/EL/SPEC/0051, Rev. '3' dated 21.12.2020 and sent to Railways & Vendors vide letter No.EL/3.1.35 (SB) dated 22.12.2020.
- 4.5 Final Draft for Revised Specification No.RDSO/2007/EL/SPEC/0053, Rev.' for Elastic Ring used in Three Phase Locomotive is uploaded to RDSO website for 15 days and sent to Railways and Vendor vide letter No.EL/3.1.35/12 (Elastic Ring) dated 24.12.2012 for comments/suggestions.
- 4.6 Final draft RDSO specification "RDSO/2010/EL/SPEC/0108, Rev'2." for 9000 HP locomotive has been sent for approval to Railway Board vide this office letter No.EL/3.1.35/32 dated 28.12.2020.

5.0 PROTOTYPE TESTING/QUALITY AUDIT

- 5.1 Technical inspection/Audit of traction motor assembly components at CLW was jointly carried out by RDSO, ELS/GMO, ELS/HWH, ELS/BJU & M/s SKF on 23rd& 24th December 2020. During the audit, the components were randomly picked from assembly line and measured on CMM, based on which observations are drawn in the joint report and shared by all concerned.

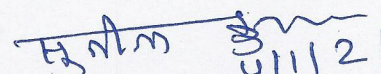
6.0 OTHER ITEMS

- 6.1 Based on capability assessment of M/s NSK, Japan conducted on 13.11.2020 by Counselor (Railway Advisor), Tokyo, M/s NSK /Japan was approved for field trial of 10 loco sets (60 TM sets) of '3 Phase locomotive Traction Motor Bearing for TM type 6FRA6068' for field trial for 6 months vide letter no. EL/2.2.13/NSK/NU2236 dated 17.12.2020.

Encl: Annexure I ,II & III

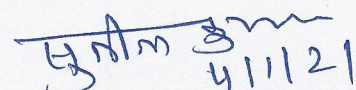
सादर,

Yours sincerely,


(Sunil Kumar)

Shri Rajesh Tiwari,
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

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

Rly	Shed	TM location	WAP7	WAG9H	Total no. of bogies	Balance to be modified	PDC
CR	AQ	1,2	28	204	232	6	Jan' 21
		3	30	257	287	161	June'21
	KYN	3	0	29	58	23	June' 21
ECR	GMO	3	0	2	4	4	Feb'21
SCR	LGD	3	0	116	116	80	March 21
	KZJ	3/4	0	200	200	20	Jan'21
SECR	BIA	3/4	0	57	114	15	Jan'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.

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	30	13	0	17
2	AQ	161	92	60	9
3	KYN	29	8	15	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	94	38	56	0
12	TKD	103	82	0	21
13	NKJ	08	03	01	04
14	BNDM	82	0	19	63
Total		1537	361	599	575

Position of Provision of 2 High Reach Pantograph in electric locomotives as on 28.12.2020

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	21 WAG9 (31560, 31406, 31738, 31642, 31403, 31516, 32401, 31402, 31404, 31405, 32432, 32273, 32429, 31645, 32274, 32377, 32270, 41043, 32278, 31769, 32381)	42
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	13 WAG9 (31143, 32367, 32480, 32418, 32413, 32481, 32670, 32363, 32798, 32512, 32513, 31618, 31444)	33 (07 spare Rev-1 waiting for conversion to Rev-2)
SCR	BZA	03 WAG-7 (28249, 28424, 28464)	8
SER	BKSC	3 WAG-9 - 32755, 32672, 32521	12
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 , 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	904