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Government of India  
Ministry of Railways  
Research, Designs &  
Standards Organization,  
LUCKNOW - 226011



No. EL/1.2.9.1

Dated: 30.07.2019

Principal Chief Electrical Engineers,  
All Zonal Railways & CLW.

Sub: Minutes of Performance Review Meeting of 180 KVA Static Converter held  
RDSO on 19.07.2019.

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The minutes of performance review meeting on Static Inverter held at RDSO on 19.07.2019 is enclosed herewith for kind information and necessary action. Compliance for the items mentioned and action plan may be on sent quarterly basis.



Encl: As above  
Copy to:

*30/7/2019*  
(Aseem Kumar)  
for Director General/Elect.

1. Secretary (Traction.), Railway Board, Rail Bhawan, New Delhi- 110 001  
- Kind attention: Sri A.K. Goswami DEE/RS/Railway Board.
2. M/s. Autometers Alliance Ltd., C-63, Sector - 57, Noida - 201 307
3. M/s. Siemens Ltd., Industry Sector, Mobility Division, I MO RS IS, 5th Floor,  
R&D Centre Building, Kalwa, Thane, Mumbai - 400 601
4. M/s. Medha Servo Drive Pvt. Ltd, P-4/5B, IDA Nacharam, Hyderabad - 76
5. M/s. Hind Rectifier, Lake Road, Bhandup (W), MUMBAI - 400 0785.
6. M/s. ABB Limited, Survey No 88/3, 88/4. Basavanhalli Kasaba Hobli,  
Nelamangala Taluk, Bangalore 562123.  
- for kind information and necessary action please.

Encl: As above

*30/7/2019*  
(Aseem Kumar)  
for Director General/Elect.  
*dc*

Minutes of Performance Review Meeting of 180 kVA Static Converter held at RDSO  
on 19.07.2019.

Present: As per list enclosed.

1. At the outset DSE/Pn/RDSO welcomed all the participants from railways and industries for the meeting on 180 KVA Static converter at RDSO. DSE/Pn mentioned that firms have been taken AMC from last two years and the overall FRPCPY of SIV in last two years ie 2017-18 and 2018-19 have been about 10 % less than the previous years. But still line failures are not acceptable. Zonal railways and firms have to put endeavor to reduce it to less than 10 % in coming years.

Railways should monitor the work of AMCs. They were also requested to share their experiences of maintenance of SIV's on AMC basis.

FRPCPY of M/s. AAL has slightly increased in 2018-19 wrt to 2017-18 . They have entered into AMC very late in 2018-19 . We hope in 2019-20 they will reduce FRPCPY drastically.

M/s. Siemens, Hind & ABB showed reduction in FRPCPY. M/s Medha's FRPCPY is slightly higher but about 15% less from 2016-17.

Zonal railways are requested to provide feedback of AMC to RDSO within a month in the format enclosed in annexure.

2. Performance review:-

Discussions were held on progress of modifications and failure analysis presented by RDSO based on the data taken from the sheds which are as follows:-

2.1	M/s. AAL make	
SN	Subject	Action to be taken by firm & Railways/ Remarks
a)	Cooling Fans:	<ol style="list-style-type: none"><li>1. NR reported that they have included provision of modified cooling fan as an additional item in their AMC. All other railways may examine and take suitable decision as per their needs.</li><li>2. It is decided that the bearing of modified Havells's cooling fan will be replaced within a service period of 03 years and to be replaced in any schedule if fallen due earlier to 3 years period.</li></ol>
b)	MCU cards	<ol style="list-style-type: none"><li>1. Railways reported that many repaired MCU cards failed on variation of OHE voltage from 16 KV to 18 KV. ELS/BSL reported that during AMC firm used older MCU cards. Further it is also reported that the investigation reports are not being shared by firm.</li></ol>



		2. Firms are advised to investigate the MCU cards before repair, and the root cause analysis report is to be shared to Shed as well as RDSO.
c)	GDU card:	<ol style="list-style-type: none"> <li>1. Firm has agreed to repair/ rehabilitate failed GDU cards of inverter and battery charger during AMC.</li> <li>2. Firm stated that the investigation report of failed cards shall be submitted within one month, and first lot of 50 cards will be repaired and sent to Railways.</li> <li>3. Firm stated that about 250 cards will be repaired/ rehabilitate by 15.12.2019.</li> <li>4. Loco Shed advised that before replacing the cards the Quality of cards are to be ensured as many repaired / rehabilitated cards are failing within a short span of time.</li> <li>5. It was decided in last meeting that the repair/ rehabilitation of failed GDU cards of inverter as well as battery charger will be done in phased manner in SIVs under AMC and will be completed within six months, but railways reported that firm has failed to do it.</li> </ol>
d)	Replacement of Door gasket	1. Sheds reported that the damaged door gaskets are not being replaced by firm. In the AMC it is stated that the gasket on door is to be checked in every schedule and to be replaced on conditional basis. Firm to take action accordingly.

2.2	M/s Siemens	
SN	Item	Decisions/ Target
a)	Indigenized Battery charger:	1. Railways reported that the failures in Indigenized Battery charger still persist. The problem of Voltage dip persists. In some cases battery charging voltages shows 104V – 105 V and loco battery is not properly charged and battery became dried up. In previous meeting firm had been advised to advise their service engineers to verify the voltage setting in every unit during schedule inspection during AMC attention. Firm apprised that this exercise is going on. Zonal railways should monitor and give feedback.
b)	Cooling Fans:	<ol style="list-style-type: none"> <li>1. Firm stated that the cooling fan bearing in AMC awarded locos will be replaced as per service period ie 04 years or before.</li> <li>2. ELS/BL stated that training is needed on</li> </ol>



		the process of bearing replacement. Firm stated that a training CD on the process of bearing replacement has been circulated to all sheds.
c)	Cable and WAGO connector	Sheds reported that there are problem in cable rubbing with equipment body, hence there are earth faults and also problem in WAGO connector. Firm is advised to look into all the cable connection and WAGO connector in every schedule equipment under AMC.
d)	Other points	<ol style="list-style-type: none"> <li>1. ELS/ED, ELS/LDH, ELS/BL ELS/BSL reported on the failures of ELR. And it shows external failure. M/s. Siemens is advised to look into the matter and take action. Feed back is to be intimated to RDSO.</li> <li>2. Shed reported failures' joint reports are not being made by firm which is not acceptable. Firm to take action.</li> </ol>
2.3	M/s. Medha Servo Drive	
SN	Item	Decisions/ Target
a)	TDC-IF Card:	Loco sheds reported that even after modification of TDC_IF card, the failures of TDC_IF card still persists. Firm stated that the problem has been solved and modified card will be fitted. The modification details are to be shared with RDSO.
b)	dv/dt capacitors	The failures of dv/dt capacitors still persist as reported by Railways. OEM stated that they are replacing capacitors and this will be completed within 15.09.2019.

2.4	M/s. Hind	
SN	Item	Decisions/ Target
a)	QCON timer card, EAU (Energy absorption unit) :	Firm apprised that modification in very few locos are left which will be done on availability of locos
b)	Cooling fan	<ol style="list-style-type: none"> <li>1. ELS/ BZA investigated on over temperature of SIV of M/s. Hind Rectifier and it is found that the sufficient cooling air is not available in inverter section (IGBT). In one phase strength of air is less. Hence over temperature shows in crow bar and snubber section. Firm is being advised to visit ELS/BZA within a month and solve the matter and take action. Feed- back to be given to RDSO.</li> <li>2. ZR's reported that firm is not changing bearings as per schedule in units under AMCs. Firm to take action.</li> </ol>

*JK*

2.5	M/s ABB	
SN	Item	Decisions/ Target
a)	GDU card	1. ELS/BZA reported that there are three failures of GDU card communication. It advised to visit ELS/BZA within a month to investigate on GDU card communication problem and share the joint report with RDSO.
b)	Cooling fan:	1. Some Railways reported that cooling fan bearing number is not available. The bearing number has already been circulated vide MOM at CNB meeting dated 27.09.2018. It is advised to replace the cooling fan bearing as per schedule.

3.0 Other points noted during meeting:

- 3.1 ELS/ED reported that after AMC failures of M/s AAL make SIV increased. ELS/ED submitted comparison chart between failures of AMC and non AMCs of SIV.
- 3.2 Firms reported that Sheds are not following the clauses of AMC as mentioned in SMI no 291. Railways are adding additional clauses. It is reiterated again that for review of the clauses in SMI no 291, Railways and firm's are advised to submit the changes desired by them to RDSO, so that it can be reviewed and improved further.
- 3.3 All firms requested railways to keep the electronics cards in proper manner, ie cards are to be kept in original packing, to be kept in dry place and to be kept in air conditioned room having dust and dirt proof, Hand book on handling and storage of electronic cards of electric locomotive by CAMTECH may be referred.

The Meeting concluded with vote of thanks to chair.



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**Annexure**

**Table**

**FAILURES COMPARISON BETWEEN AMC AND NON AMC SIV**

i	ii	iii		iv		v	vi	vii	viii	
Name of the shed	Name of the firm	Date of AMC		population		Failures of units under AMCs before execution of AMC	Failures of units under AMCs after execution of AMC for col. v & vi	Period in years taken for analysis take same period	FRPCPY in units under AMC	
		LOA	Execution	Total	AMC awarded				Before AMC	After AMC
	AAL									
	Siemens									
	Hind									
	Medha									
	ABB									

(B) List of participants:-

SN	Name (S/Shri)	Designation	Railway
1	Aseem Kumar	DSE/Pn	RDSO
2	P.K.Sarawat	DSE/TM	RDSO
3	N.R.Sharma	SSE/D	RDSO
4	R.Dasgupta	SSE/I	RDSO
5.	J.K.Saxena	SS/I	RDSO
6	Ankit Singh	Dy CEE	NR
7	Chiyadri Vamsi	DEE/TRS/AJJ	SR
8	Arun Kumar	ADEE/NR	NR
9	Tanuj Kr. Sharma	AEE/TRS/BL	WR
10	Deepak Kumar	AEE/TRS/MGS	ECR
11	M. K. Singh	SSE/ELS/MGS	ECR
12	Amal Sebastian	AEE/ELS/ED	SR
13	K.M.Sumesh	SSE/ELS/ED	SR
14	Mithilesh Chaudhary	SSE/ELS/AJJ	SR
15	Sourabh Goswami	SEE/TRS/BSL	CR
16	Mohan Chaudhary	SSE/TRS/BSL	CR
17	S.R. Senapati	SEE/TRS/JHS	NCR
18	Ambuj Sharma	SSE/TRS/CNB	NCR
19	Pawan Kumar Giri	SEE/TRS/BL	WR
20	Saurabh Sinha	SSE/TRS/BRCY	WR
21	Somenath Das	SSE/TRS/HWH	ER
22	Ram Avtar Pal	SSE/TRS/ET	WCR
23	P.C. Sahu	SSE/TRS/NKJ	WCR
24	Vinay Kumar	SSE/TRS/ET	WCR
25	Somenath Banerjee	SSE/ELS/BNDM	SER
26	Atanu Karmakar	SSE/ELS/SRC	SER
27	Ashwani Kumar	SSE/TRS/LDH	NR
28	Amarnath M	SSE/ TRS/KZJ	SCR
29	S.K.Yadav	SSE/ELS/HWH	ER
30	Sumit Wahi		AAL
31	Ankur Tiwari		AAL
32	Sudhanshu Pal		AAL
33	Rajesh Srivastava		Siemens



34	Manu Garg		Siemens
35	V.K.L. Swamy		Medha Servo Drive
36	A.N V. Rao		Medha Servo Drive
37	Ch. Jaya kumar		Medha Servo Drive
38	Mohit Sharma		ABB
39	Priyank Khare		ABB
40	Arvind Panday		ABB
41	Deepak Aher		Hind Rectifier
42	P.S.Patel		Hind Rectifier

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