



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226011
Tele/Fax : 2465713 & 42224 (Rly)
e-mail : dse1rdso@gmail.com

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



No. EL/ 2.2.9/10

Dated: 09/04/2019

Principal Chief Electrical Engineers,

1. Central Railway, Mumbai, CST-400 001.
2. East Central Railway, Hazipur-844101.
3. East Coast Railway, Chandrashekharpur, Bhubaneswar-751016.
4. Eastern Railway, Fairlie Place, Calcutta-700001.
5. North Central Railway, Subedarganj, Allahabad- 211033.
6. Northern Railway, Baroda House, New Delhi-110001.
7. North Eastern Railway, Gorakhpur-273 001.
8. South Central Railway, Secunderabad-500 071.
9. South East Central Railway, Bilaspur-495004.
10. South Eastern Railway, Garden Reach, Calcutta-700 043.
11. Southern Railway, Park Town, Chennai-600 003.
12. West Central Railway, Jabalpur-482001.
13. Western Railway, Church gate, Mumbai-400 020.
14. Chittaranjan Locomotive Works, Chittaranjan, Burdwan-713 331

Sub: Minutes of Meeting for Performance review meeting of ESMON held at ELS/Ghaziabad/NR on 04/04/2019 with OEMs of ESMON & Railways.

Ref: This office letter of even no. dated 20.03.2019.

Reference above, find enclosed herewith the copy of subject Minutes of Meeting for your information & further necessary action, please.



(Sudhir Ranjan)

Encl: As above

for Director General Std. /Electrical

Copy to:

- (i) Secretary (Electrical), Railway Board, Rail Bhavan, New Delhi-110001
- (ii) M/s Autometers Alliance limited, C-63, Sector-57 Noida-200 307
- (iii) M/s Laxven Systems, Plot No. 188/A, Lane-1, Phase-II, Sector-III, IDA Cherlapally, Hyderabad-500 051
- (iv) M/s Medha Servo Drives Ltd., P4/5-8, I.D.A. Nacharam, Hyderabad-500 076


(Sudhir Ranjan)

Encl: As above

for Director General Std. /Electrical

**Minutes of meeting
For Performance Review Meeting
Of
ESMON
At Electric Loco Shed/Ghaziabad/Northern Railway on 04/04/2019
with OEMs of ESMON & Railways**

Members Present

RDSO

(S/Shri)

1. Om Prakash Kesari, PEDSE
2. Sudhir Ranjan, EDSE(System)
3. Arvind Pandey, DDSE(System)
4. Girish Meena, SSE(System)

Railways

(S/Shri)

1. Manish Kumar Sinha, Sr.DEE/ELS/GZB/NR
2. Kamal Kant Rastogi, DEE/ELS/GZB/NR
3. Mohd. Shueb Romi, ADEE/RS/GZB/NR
4. Mushtaq Hussain, ADEE/RS/CNB/NCR
5. T.Nageswara Rao, ADEE/ELS/LGD/SCR
6. J.Radhakishan Rao, SSE/ELS/LGD/SCR
7. S.P. Anuragi, SSE/ELS/CNB/NCR
8. Sushil Kumar, SSE/ELS/LDH/NR
9. Manish Kumar, SSE/ELS/GZB/NR
10. Kaushal Kumar Yadav, SSE/ELS/CNB/NCR
11. Madan Pal Singh, SSE/ELS/KJGY/NR
12. Sourabh Goswami, SSE/ELS/BSL/CR
13. Ajay Richhariya, SSE/Tech/ELS/GZB/NR

FIRMS

(S/Shri)

1. R.K.Singhal, M/s AAL
2. D.K.Maharana, M/s AAL
3. Manish Goel, M/s AAL
4. Aditya Sharma, M/s AAL
5. K.N.Anjaneyulu, M/s Laxven
6. Rammilan Nishal, M/s Medha
7. Pramit Kumar Gupta, M/s Medha

In line with MOM dated 09.01.2019, a meeting was convened at ELS/GZB/NR on 04.04.2019 to discuss the performance of ESMON & compliance of decisions taken in earlier meeting on 09.01.2019, and reliability issues as reported by SCR .

The brief summary of discussions is as under:-

At the outset, PEDSE welcomed all the members for attending the meeting. EDSE (System) requested OEMs & Railways to furnish compliance of each item, discussed during the meeting on 09.01.2019.

1. RDSO presented the on line failure statistics for the last two quarters i.e. Oct'18 to Dec'18 and Jan'19 to Mar'19 of various make of ESMONs which had led to punctuality loss of train. There were only 7 failures which included 3 (transient failures), 1(PG failure), 2 (Mother Board & connector failure) and 1 (Stepper Motor failure). There were no design failures.

2. Compliance of MOM dated 09.01.2019

Item No.	Description	Compliance Status
2.2	M/s AAL stated that most of the card failures are of CPU card failures which are due to non -replacement of battery in 3 years & non-uploading of modified firmware. M/s AAL informed that	Only 18 units were modified since last MOM & still 250 units have to be provided with modified firmware. M/s AAL has to ensure the uploading of modified

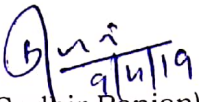
	firmware has been modified in 279 units & 268 units are yet to be modified by sheds. The firmware in balance units shall be modified by end of Feb'19. Railways stated that the CPU card failures have not been observed after uploading of modified firmware.	firmware in balance 250 units by end of Apr'2019. Railways shall furnish the status of uploading of modified firmware to RDSO.
2.3	Railways stated that M/s AAL has yet not submitted the maintenance manual for TELPRO-EL (Metallic) model of ESMON in some sheds. M/s AAL confirmed that they will provide the maintenance manual to concerned sheds within a week time.	Complied. As per Railways, firm has provided soft copies of Maintenance manual.
2.4	NR raised the issue of testing of healthiness of speed sensors. M/s AAL stated that the Railways may depute the personnel at their premises for the purpose & Railways may develop the test bench accordingly for testing of sensors alone.	As per M/s AAL, its not possible to test the standalone speed sensor(s) which was contrary to M/s AAL statement in meeting dated 09.01.2019 wherein it was stated by them that they are testing the speed sensor alone while received in their stores. However, it was decided that OEMs shall develop the facility for testing of standalone Speed Sensors and Railway representative(s) shall visit the OEMs work for the purpose and develop the facility at Shed accordingly.
2.5	The problem of stepper motor is only in old models of M/s AAL ESMONs. Railway stated that the previous measures taken by M/s AAL to curb the failures of Stepper Motors i.e. use of current limiting adopter & lubrication of motor gears with soft grease during AOH are not able to curb the problem completely, sheds have informed that still few cases of failure of Stepper motors are taking place. M/s AAL stated that for reliable working of ESMON system, the stepper motor shall be replaced in IOH. However, Railways pointed out that firm should give details and reasons for its replacement since earlier no such condition was laid down by the firm.	It was decided that stepper motor of ESMON supplied prior to year 2013 shall be replaced by Railways during IOH.
5.3	M/s AAL stated that to curb the failures of Power Supply Card, Railways shall ensure the replacement of Capacitors in Power Supply Cards which are 6 years old.	Railways expressed their inability to replace the capacitors in power supply card due to requirement of fine soldering otherwise will lead to tracking of other circuits. Railways may send the Power supply card to M/s AAL works for replacement of capacitor or alternatively, may be done in sheds by OEMs expert.
5.4	Firms stated that the Railways are not following the Railway Board's letter no. 98/Elect(G)/138/6 dated 29.05.06 for	Being complied and being done to the extent possible.

	replacement of unserviceable over aged ESMONs to improve the reliability of ESMONs. Railways are requested to strictly follow the aforesaid RB letter to improve the reliability of ESMONs.	
5.5	Only M/s AAL has provided the chart for energy calibration to RDSO. Other OEMs are advised to furnish the same & point wise compliance to the last MOM within a week time.	Chart for energy calibration has been provided by M/s AAL & M/s Laxven. Other firm i.e. M/s Medha has not provided the same. M/s Medha shall furnish the chart for energy calibration within a week time.
7.	OEMs stated that there is no segregation of warranty failures/out of warranty failures & over-aged failures instead Railways are reporting the combined failures leading to projection of high FRPCPY of their make of ESMON. To address the issue, RDSO suggested to have a standard failure reporting format for reporting of defects including warranty & out of warranty failures. The standard failure reporting will help in analysis more accurately. The failure reporting format was discussed & finalized with OEMs/Railways and enclosed for implementation by Railways.	Complied.
9.	OEMs were advised to develop a regular mechanism for collecting the performance of their equipments by periodically visiting the sheds. Further, the feasibility of incorporating the retrieval of failure log through on line server may also be explored by OEMs.	Action has not yet been taken by firms. It needs to be expedited in order to ensure timely reporting investigation & follow-up action for improvement in the reliability.

3. The representative(s) from OEMs are not coming fully prepared for the meeting. Intimation of meeting was given well in advance and firms are advised to send representative(s) who is aware of failures & action plan to have fruitful & meaningful discussion.
4. No major design change has taken place in ESMON since its inception on Indian Railways. OEMs shall explore new designs of ESMON to make it more user friendly, reliable and ergonomically better.
5. Problem areas are already identified. OEMs need to go into detail of design and make required changes to overcome repeated transient problems.
6. The possibility of separating out the various cards of ESMON from the unit and provision of LCD having digital & analog display of speed was also discussed. OEMs were advised to study the requirement & shall furnish the proposal to RDSO by May'19 for initiating further action.
7. Possibility of removal of external CF card in Master unit of ESMON was also discussed. OEMs were advised to explore possibility of providing internal memory of having recording facility for at least 90 days in-place of external

CF card as CF cards have reliability as well as interchangeability issue especially with M/s Medha make ESMON.

8. ELS/GZB suggested that card level testing facility is required to be setup at sheds so that healthy cards may not be replaced by new card for transient nature of failures.
9. The issue of taking speed inputs from TM speed sensors instead of Pulse Generator (PG) in 3-phase electric locos was discussed. The purpose of tapping speed signals from TM speed sensors is to eliminate the requirement of PG which will improve the reliability of ESMON by avoiding the failures of ESMONs caused due to PG defects. All the OEMs were advised to submit the scheme for taking speed inputs from TM speed sensors instead of Pulse Generator (PG) in 3-phase electric locos. RDSO will examine the various schemes & will advise further course of action.


(Sudhir Ranjan)
EDSE(System)

Encl.: Nil

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