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No. EL/3.2.10.Gen Date: 11.09.2015

Chief Electrical Engineers,

1. Central Railway, Mumbai CST- 400 001.
2. Western Railway, Churchgate, Mumbai–400 020
3. West Central Railway, Jabalpur-482001
4. Eastern Railway, Fairlie Place, Calcutta- 700 001
5. East Cost Railway, Chandrashekharpur, Bhubaneshwar- 751 016.
6. East Central Railway, Hazipur-844101 (Bihar)
7. South Eastern Railway, Garden Reach,Calcutta-700 043
8. Southern Railway, Park Town, Chennai-600 003
9. South Central Railway, Rail Nilayam, Secunderabad –500 071
10. South East Central Railway, Bilaspur-495004
11. Northern Railway, Baroda House, New Delhi-110 001
12. North Central Railway, Subedarganj, Allahabad-211 033.
13. Chitranjan Locomotive works, chitranjan-713 331 (WB)

SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2015/EL/SMI/0284(REV. '0')

1.0 Title:

Review of setting of Relay Q20 to reduce the traction motor flashing cases.

2.0 Brief History:

For prevention of TM from over voltage, Q20 relay is provided in the power circuit of locomotive, the settings of this relay have been defined in the maintenance manual of CLW which are being reproduced as below:

Pick up	865V
Drop out	740V

The nominal voltage rating of Hitachi TM (HS 15250A) has been specified as 750 V, whereas the Q20 relay pickup voltage is 865V which is higher than the traction motor voltage rating.

On experimental basis, ELS/MGS has reduced the settings of Q20 to 750V in WAP-4 locomotives and found that flashing cases of TM have been reduced substantially. East Central Railway has proposed this item for discussion in 37th MSG meeting held on 24th & 25th July, 2015 at Shimla (Umbala Division), Northern Railway. The item was discussed and deliberated in detail during MSG meeting and it has been decided to revise the Q20 Relay pick up setting as 790V instead of 865V and drop out setting as 700V instead of 740V.

3.0 Modified Instructions:

3.1.1 The existing and revised settings of Q20 Relay shall be as follows:

Operation	Existing Setting	Revised Setting
Pick up	865V	790V
Drop out	740V	700V

3.1.2 In conventional electric locomotives equipped with Microprocessor Based Control and Fault Diagnostic System (MPCS), Q20 relay functionality is provided as a soft relay. The Q20 revised settings shall be implemented through MPCS.

3.1.3 In conventional electric locomotives not equipped with Microprocessor Based Control and Fault Diagnostic System (MPCS), Q20 relay is provided in physical form. The Q20 revised settings shall be implemented by changing the relay settings.

4.0 Application to the Class of Locomotives:

25 KV AC conventional electric locomotives.

5.0 Agency of Implementation:

All Electric Loco Sheds and POH Workshops.

6.0 Periodicity of Implementation:

Minor schedule inspections/TOH (Earlier AOH)/IOH and POH overhauling schedules/any other unscheduled maintenance.

7.0 Reference:

As per recommendation of 37th MSG held at Shimla (Umbala , Division), Northern Railway on 24th & 25th July 2015 for new item number 2 proposed by East Central Railway (circulated vide letter number EL/2.1.8 dated 27.8.2015).

(P.K. Saraswat)
for Director General (Elect.)

Enclosures: Nil

Copy to: As per standard Mailing List No. EL-M-4.2.3-19 (latest revision).

(P.K. Saraswat)
for Director General (Elect.)