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सत्यमेव जयते

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India - Ministry of Railways
Research, Designs & Standards Organization,

LUCKNOW – 226011

No. EL /3.1.14

Dated 08.01.2016

The Chief Electrical Engineer,
- Central Railway, Mumbai; CST-400 001.
- Northern Railway, Baroda House, New Delhi-110001.
- North Central Railway, Block A2, Subedar Ganj, Allahabad-
- Eastern Railway, Fairlie Place, Kolkata -700 001.
- East Central Railway, Hazipur-844101.
- East Coast Railway, Chandrashekharpur, Bhubaneshwar-751016
- Southern Railway, Park Town, Chennai-600 003.
- South Central Railway, Secunderabad-500 371.
- South Eastern Railway, Garden Reach, Kolkata -700 043.
- South East Central Railway, Bilaspur-495004
- Western Railway, Churchgate, Mumbai-400 020.
- West Central Railway, Jabalpur-482001.
- Chittaranjan Locomotive Works, Chittaranjan-713331 (WB)

Sub.:- Modification in Vigilance Control Device in Tap changer Electric locomotives.
Ref.:- MOM of XXXVII MSG circulated vide letter no EL/2.1.8 dated 27.08.2015.

As per the decision taken in regard to item no. 12 of the minutes of 37th MSG meeting held on 24th & 25th July 2015, a modification sheet no. RDSO/2015/EL/MS/0444 (Rev '0') is prepared after getting comments/ suggestions from zonal Railways and enclosed herewith.

It is requested to implement modification as per details mentioned in aforesaid modification sheet. Modification sheet is attached along with this letter.

Encl: As above

(Suresh Kumar)
For Director General Electrical

Copy to:
Secretary (Electric Traction),
Railway Board, Rail Bhawan, New Delhi-110001

For kind information Please

Encl: As above

(Suresh Kumar)
For Director General Std./Electrical

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सत्यमेव जयते

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लखनऊ – 226011
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LUCKNOW - 226011

No. EL/3.1.14

Dated 08 /01/2016

Chief Electrical Engineers,

1. Central Railway, Mumbai CST- 400 001.
2. Eastern Railway, Fairlie Place, Calcutta- 700 001
3. Northern Railway, Baroda House, New Delhi-110 001
4. Southern Railway, Park Town, Chennai-600 003
5. South Central Railway, Rail Nilayam, Secunderabad –500 071
6. South Eastern Railway, Garden Reach,Calcutta-700 043
7. Western Railway, Churchgate, Mumbai–400 020
8. East Cost Railway, Chandrashekharpur, Bhubaneshwar- 751 016.
9. North Central Railway, Hasting Road, Allahabad-211 001.
10. East Central Railway, Hazipur-844101 (Bihar)
11. South Western Railway, Hubli-580023
12. West Central Railway, Jabalpur-482001
13. South East Central Railway, Bilaspur-495004

Modification Sheet No. RDSO/2015/EL/MS/0444 (Rev. '0')

1.0 **Title:**

Modification in Vigilance Control Device in tap changer electric locomotives for:

i) VCD activation through BL key in place of 110 V direct battery supply.

ii) Removal of VCD acknowledgement by horn.

2.0 **Object:**

2.1 At present the 110 Volt DC power supply is fed directly through battery for activation of VCD in tap changer electric locomotives.

a. In multiple loco operation, battery remains on in both the locos. Due to this, 110 V battery supply remains available in VCD main unit in both locos, even though VCD in rear locomotive remains in suppress mode. As the supply of VCD through battery is always available in both locos, any failure in VCD in rear loco, which is in suppressed mode, results in brake application in both the locomotives.

b. A case study of failure in ELS/ET/WCR, base multi-loco 23109 + 23734 revealed that VCD main unit of trailing loco 23734 was malfunctioning and caused failure of the locomotive. After analysis it was observed that due to malfunctioning of VCD of rear loco, QVCD relay got energized and subsequently IP valve got de-energized which led to drop in BP pressure & resulted in application of brakes in both the locos.

c. In order to avoid reoccurrence of such incidences, there is need of modification in 110V DC feeding circuit to VCD.

2.2 Vigilance cycle gets reset by any one of the following action to be taken by LP/ALP:

a) Notch up/Notch down by master controller or EEC;

b) Brake applications through A9 or SA9;

c) Application of sander;

d) Pressing VCD acknowledgement push button by ALP;

e) Pressing of foot paddle switch by loco pilot;

f) Operation of first shunting notch i.e. MPS-1

Some time it is observed that loco pilot frequently acknowledges the VCD through horns which results in premature failure of horn pressure switch. To avoid the failure of horn pressure switch, a modification is required to remove the VCD acknowledgment through horns.

2.3 The above issues have been deliberated in XXXVII MSG meeting held at SHIMLA (UMB DIVISION), NORTHERN RAILWAY on 24th & 25th JULY' 2015 and it has been decided to issue modification sheet to address the above problems. Based on decision taken in regard to item no. 12 of the XXXVII MSG (MOM circulated vide RDSO's letter EL/2.1.8 dated 27.08.15). Modification sheet is being issued for VCD circuit of tap changer locomotives.

3.0 **Existing Arrangement with cross-references of respective design document:**

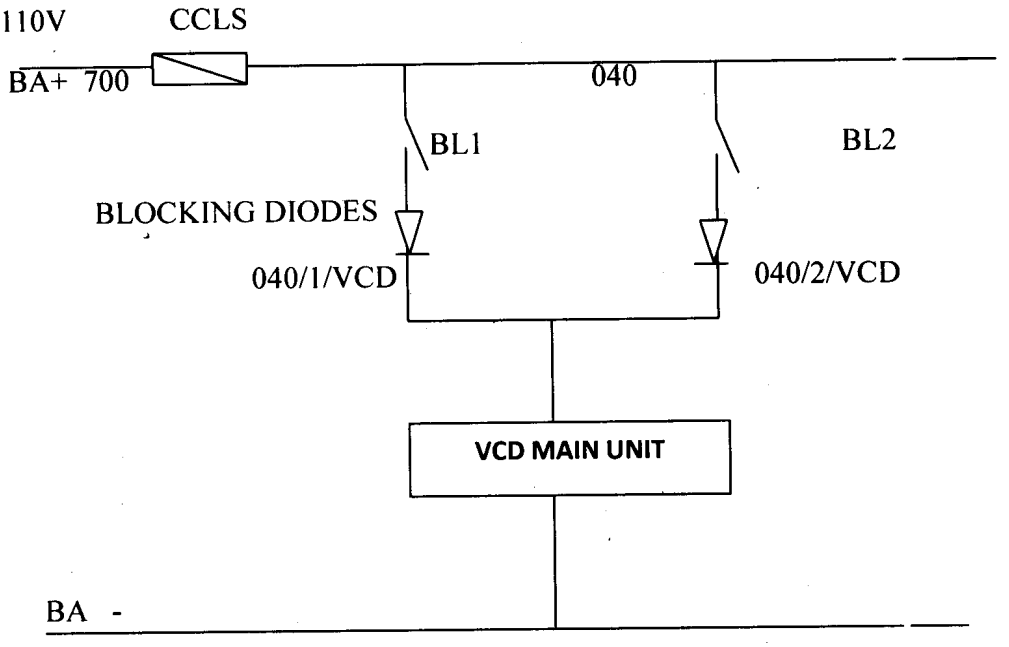
3.1 Presently 110 Volt DC power supply to VCD main unit is provided direct from battery as per VCD specification no. RDSO/2008/El/SPEC/0025, Rev-5.

3.2 At present vigilance cycle gets reset by pressing horn as well.

4.0 **Modified Arrangement to replace existing arrangement as given above in 3.0:**

4.1 **Activation of VCD through BL key:**

To activate VCD main unit, supply will be fed through BL key in Vigilance Control Device as shown below. This modification will prevent energizing of VCD of rear loco.



Note: Cable no 003 to be removed from terminal no. L of VCD TB

4.2 **Removal of provision for acknowledgement of VCD by pressing horn.**

Remove the cable no. 22J and 22K for deactivation of horn pressure switch from VCD 40 pin terminal board.

5.0 **Application to class of locomotives**:

All tap changer electric locomotives fitted with VCD as per RDSO specification no. RDSO/2008/El/SPEC/0025, Rev-5.

6.0 **Material Required**:

Blocking Diodes - 2nos. /loco (as per specification no.CLW/ES/SK-1/D-1)

Cable with crimped lug at both end- 3 nos.

7.0 **Material Rendered Surplus**:

Nil

8.0 **Reference**:

- Item no-12 of MSG minutes issued vide RDSO's letter no EL/2.1.8 dated 27.08.15.
- Railway Board letter no. 2015/Elect (TRS)/138/5 dated 20.08.2015 regarding decision on items of 37th MSG.

9.0 **Modification Drawing**:

Nil

10.0 **Additional information**:

The suitable instruction as follows may be posted in locomotive cab for information of LP/ALP.

This loco has been modified for disability functionality of VCD cycle reset through horn.

11.0 **Agency of Implementation**:

All Electric Loco Sheds holding tap changer electric locomotive fitted with VCD as per RDSO specification no. RDSO/2008/El/SPEC/0025, Rev-5.

8/1/16

(Suresh Kumar)
for Director General/Elect.

Copy to:-

1. Secretary (Electric Traction), Railway Board, Rail Bhavan, New Delhi-110 001
2. Sr. DEE (TRS), Electric Loco Sheds,

8/1/16

(Suresh Kumar)
for Director General/Elect.

O/C