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

सत्यमेव जयते

No. EL/4.2.15

Dated 20.01.2014

Chief Electrical Engineer,

1. Central Railway, Mumbai CST-400 001.
2. Northern Railway, Baroda House , New Delhi-110 001.
3. North Central Railway, Allahabad- 211001.
4. Eastern Railway, Fairlie Place, Kolkata -700 001.
5. East Central Railway, Hazipur-844101.
6. East Coast Railway, Chandrashekharpur, Bhubaneshwar-751016.
7. Southern Railway, Park Town, Chennai-600 003.
8. South Central Railway, Secunderabad-500 371.
9. South Eastern Railway, Garden Reach, Kolkata -700 043.
10. South East Central Railway, Bilaspur-495004
11. Western Railway, Church gate , Mumbai-400 020.
12. West Central Railway, Jabalpur-482 001.
13. Chittaranjan locomotive works, Chittaranjan, West Bengal 713 331

<u>**MODIFICATION SHEET NO. RDSO/2014/EL/MS/0430   Rev '0'**</u>
<u>**Dated: 20.01.2014**</u>

1.0   Title:

Modification in loco control circuit for connections for Auto regression bypass (HPAR) switch in 25 kv ac electric tap changer locomotive working with microprocessor based control and fault diagnostic system (MPCS ver-2)

2.0   Object:

To follow standard positions for HPAR bypass switch for Auto Regression, i.e. Position 1 is for normal working and position 0 for bypassed/isolated condition.

3.0   Existing arrangement with cross references of respective design document:

During 36th MSG at IREEN, Railways reported operational problems because of different programmes followed for HPAR switch from other isolating switches used in locomotives.

In existing loco control circuit , position 1 of HPAR switch is for bypasses (auto-regression logic is isolated) and position 0 for normal working(auto-regression logic is active). This convention is different from those followed in all other

isolating switches. In all other switches, position 1 is for normal working and position 0 for bypassed/isolated condition. Sheds have been using different conventions. This is creating confusion among loco crews.

During the 36th MSG meeting it was also decided to keep the auto regression through Q20 relay independent from HPAR switch.

4.0 Modified arrangement to replace existing arrangement:

HQ51 is the switch, designated to bypass auto regression as per RDSO specification No. ELRS/SPEC/MPC-FDS/0001 Rev-2 Aug 2005. But in CLW's control circuit no. CLW.3W.15000.004 on sheet no. 15 of 21, this switch is designated as HPAR and hence, it recommended to read input at I-70 from HPAR in lieu of HQ51.

Standard positions for HPAR bypass switch for Auto Regression shall be as under:

HPAR at Position 1	Normal working, i.e. auto-regression logic is active
HPAR at Position 0	Bypassed, i.e. auto-regression logic is isolated

4.1 Work to be done:

Connection diagram is enclosed as Annexure A.
- Cable no. 700 shall be removed from terminal no. 1 of HPAR switch and shall be connected to terminal no. 2.
- Cable no. 200 shall be removed from terminal no. 3 of HPAR switch and shall be connected to terminal no. 4.

5.0 Application to Class of locomotives:

WAG-7, WAP-4, WAM4 & WAG5 class of 25 Kv AC conventional tap changer electric locomotives with microprocessor based control and fault diagnostic system (MPCS).

6.0 Material Required:

Nil

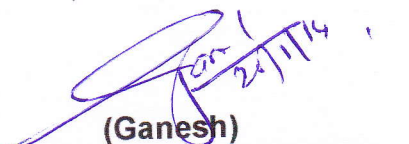## 7.0 Material Rendered Surplus: Nil

8.0 Modification Drawings:

Modified circuit given in Annexure-A

9.0 Agency of Implementation:

Electric loco sheds, MTR/POH workshops and CLW,BHEL,Jhansi

(Ganesh)
for Director General/Elect.

Encl: As above

Annexure-A

700

700

1   **0** **1**

3 HPAR

200

I - 70

MICROPROCESSOR UNIT

EXISITING ARRANGEMENT

700

700

2   **0** **1**

4   HPAR

200

I - 70

MICROPROCESSOR UNIT

MODIFIED ARRANGEMENT