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भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India - Ministry of
Railways
Research, Designs & Standards
Organization, LUCKNOW - 226011
Dated 10.08.2011

No. EL/3.1.35/2 Electrical

Chief Electrical Engineers,

- Northern Railway, Baroda House, New Delhi-110 001
- East Central Railway, Hazipur – 844 101 (Bihar)
- Central Railway, 2nd floor, Parcel Office Bldg., Mumbai CST-400 001
- South Central Railway, Rail Nilyam, Secunderabad – 500 071.
- West Central Railway, Jabalpur-482001
- South East Central Railway, Bilaspur-495004
- South Eastern Railway, Garden Reach, Kolkata-700 043
- Eastern Railway, Fairlie Place, Kolkata- 700 001
- Chittaranjan Locomotive Works, Chittaranjan-713 331 (WB)

MODIFICATION SHEET NO. RDSO/2011/EL/MS/0401 Rev.'0' Date 10.08.11.

1.0 Title:

Modification Sheet for relaying of cables in HB-2 panel of three phase locomotives to avoid fire hazards.

2.0 Object:

Several cases of smoke emission and fire from HB-2 panel have been reported from zonal railways in recent past resulting in failure of locomotive on line. HB-2 panel houses the power contactors for auxiliary machines. Any incident of fire and smoke emission from HB-2 panel compromises the safety aspects of three phase locomotives which is undesirable. Hence the following modifications is required.

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

Detailed investigations revealed that the subject problem has got its roots in the existing laying and cable connection associated with the contactors 52.4/1 & 52.4/2 which are part of the load sharing arrangement for auxiliary machines.

In the existing arrangement as indicated in circuit diagram-1(copy enclosed), the contactor 52.4/1 and 52.4/2 rest side by side in the HB-2 panel. The contactor 52.4/1 has double (2 nos.) end sleeve cable connection of size 10 sq.mm. in each input terminal (Terminal nos. 1,3 & 5) and each output terminal (Terminal nos. 2,4 & 6). Similarly the contactor 52.4/2 has double (2 nos.) end sleeve cable connection of size 10 sq.mm. in each output terminal (Terminal nos. 2.4 & 6).

In the long run during operation of the locomotives, due to vibrations there is a distinct probability of the double end connections getting loose as the two cables ends duly sleeved and subsequently square crimped cannot be held properly with tightening jaws of the contactor terminal. This will cause in overheating at the terminals of the contactors 52.4/1 and 52.4/2.

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

To alleviate the problem, all double end sleeve cables of contactors 52.4/1 and 52.4/2 are to be shifted in screw type terminal blocks of M8 size (XH67S) as indicated in circuit diagram-2 (copy enclosed).

5.0 Application to class of locomotives:
WAG9, WAP5, WAP7, WAG9H.

6.0 Material Required Per Loco:
1) Cable: 4GKW, 10mm², 9m
2) Cable lug: 10/M8 (ABB ID no. EHP470026P0208), 9nos.

7.0 Material Rendered Surplus:
1) NIL

8.0 Reference:
CLW letter no nil dated 29.11.10.

9.0 Modification Drawing:
Attached.

10.0 Agency of Implementation:
CLW in all new locos, POH workshop during POH of locos and Loco Sheds holding 3-phase locomotives.

Encl: As above


(A.K. Goswami)
for Director General/Elect.

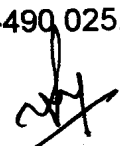
Copy to:-

1. **Secretary (Electric Traction),** Railway Board, Rail Bhavan, New Delhi-110 001
2. **Chief Electrical Loco Engineers,**

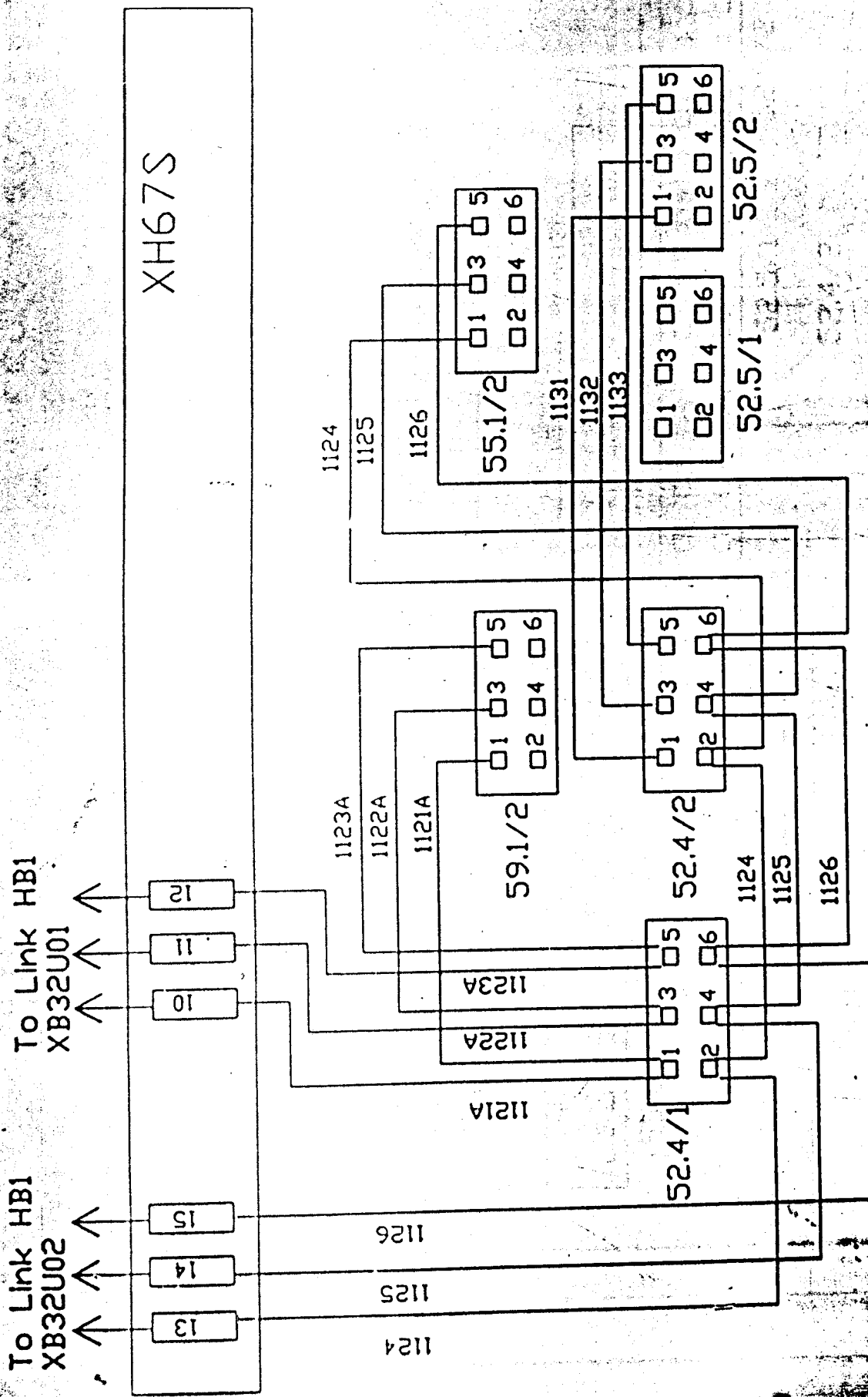
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- West Central Railway, Jabalpur-482001
- South East Central Railway, Bilaspur-495004
- South Eastern Railway, Garden Reach, Kolkata-700 043
- Eastern Railway, Fairlie Place, Kolkata- 700 001

3. **Sr. DEE (TRS), Electric Loco Sheds,**

- Central Railway, Ajni (Nagpur)-440008
 - East Central Railway, Gomoh-828 401
 - Northern Railway, Ghaziabad (UP)- 201001
 - South Central Railway, Lalaguda, Secunderabad – 500 017.
 - West Central Railway, Tughlakabad, New Delhi- 110 044.
 - South East Central Railway, BMY Complex, Bhilai, Durg-490 025.
 - South Eastern Railway, Tatanagar-831 002.
 - Eastern Railway, Howrah.
- Encl: As above


(A.K. Goswami)
for Director General/Elect.

Circuit diagram 1



Circuit diagram-2

