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

No. EL/4.2.15

Dated 25.10.2013

MODIFICATION SHEET NO. RDSO/2012/EL/MS/0421 Rev '1'

1. Title:

Modification of loco control circuit forLSDBR lamp to avoid wrong indication ofworking of AC MVRF in MPCS fitted Electric Locomotives.

2. Object:

To reproduce logic of LSDBR circuit correctly, and to avoid wrong indication of working of AC MVRF in MPCS fitted Electric Locomotives.

Signaling lamp (LSDBR) for DBR is provided on the driver's desk for indicating working of MVRF in conventional as well as MPCS fitted locos. In conventional locomotives LSDBR extinguishes only if QVRF picks up a once MVRF creates adequate air flow, thereby ensuring cooling of DBR unit beyond 5th notch. i.e. on all other occasions, LSDBR glows. In existing MPCS fitted locomotives. It glows when MP is put on '0' position and extinguishes when MP is put on "P' position which is wrong this logic has to be ensured in locomotives fitted with MPCS, also.

Electric Loco Shed BNDM/SER observed this LSDBR problem in newly received MPCS fitted locomotives with AC MVRF. On the basis of aforesaid observation, it is concluded that in case AC MVRF fails beyond 5th notch,, LSDBR remains in extinguished condition , however auto regression takes place upto 5th notch. ELS/BNDM has observed that in the event of failure of MVRF above 5th notch, LSDBR glows, auto-regression takes place upto 5th notch and again LSDBR extinguishes." Same observations were reported by ELS, CNB , GMO ,BZA, etc.

Electric Loco Shed BNDM/SER observed in Rev-'0' of this MS, still there is a scope for wrong indication. While AC MVRF stops working at higher notch (above 5) , LSDBR will not get feed through QVRF's NC interlock as GR 0-5 interlock is open and there is indication of defects in MVRF.

3. Existing Arrangement:

In MPCS loco, LSDBR extinguishes, the moment MP is put on P because of incorrect realization of existing logic. Existing circuit is displayed at drawing no. SKEL-4886 Alt-1 where LSDBR lamp is controlled by MPCS output no. O-42 and wire no. 234 and control input I-73 with QVRF pressure switch. Even in the event of failure of MVRF above 5th notch, LSDBR glows, auto-regression takes place upto 5th notch and again LSDBR extinguishes.

4. Modified Arrangement:

To overcome the above problem, LSDBR lamp is now being directly controlled and gets the feed from wire no. 700, interlocks of QVRF and 0-5 interlock of SMGR as in conventional locomotives. It is a hardwired circuit without any software logic. as shown in modified control circuit as per drawing No. SKEL- 4886 Alt-1. In this circuit LSDBR lamp always glows through wire no. 234, 0-5 interlock of SMGR and NC interlock directly. Whenever QVRF picks up, NO closes and disconnects wire no. 234 from wire no. 700 and feed to LSDBR discontinues, extinguishing LSDBR. After 5th notch of SMGR, if QVRF doesn't pick up because of any defect in MVRF or inadequate air flow, feed to the LSDBR ceases, extinguishing the same. This will be correct indication to locomotive crew about function of MVRF as available in non-MPCS fitted locomotives.

5. Work to be carried out:

As per modified arrangement , wire no. 234 of LSDBR lamp should be removed from output O-42 side and connect to NC inter lock of QVRF pressure switch as shown in modified control circuit as per drawing No. SKEL- 4886 alt-1. Following work has to be carried out in this Rev-'1':

i) Common terminal of QVRF to be connected to 700 cables directly.
ii) NC terminal of QVRF to be connected to LSDBR.
iii) NO terminal of QVRF to be connected to I-73 (Cable No. 157).

6. Application to class of locomotive:

All 25 kV AC MPCS fitted tap changer electric locomotives.

7. Material Required:

Nil

8. Material Rendered Surplus:

NIL

9. Reference:

ELS/TRS/BNDM's letter no. TRS/BNDM/T/27/588 dated 27.02.2013.

10. Modification Drawings:

SKEL-4886 Alt-1

11. Periodicity of implementation:

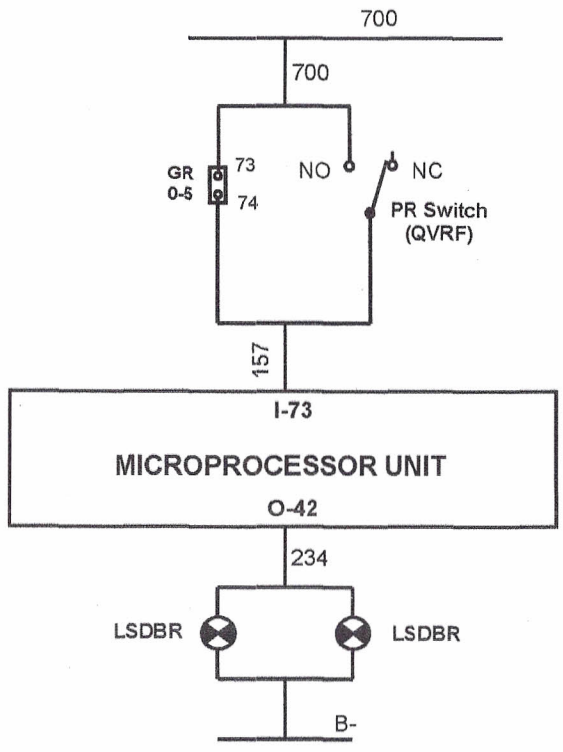
a. Whenever the locomotives arrive the shed for maintenance.
b. During manufacturing of locomotives at CLW/BHEL etc.

12. Agency of Implementation:

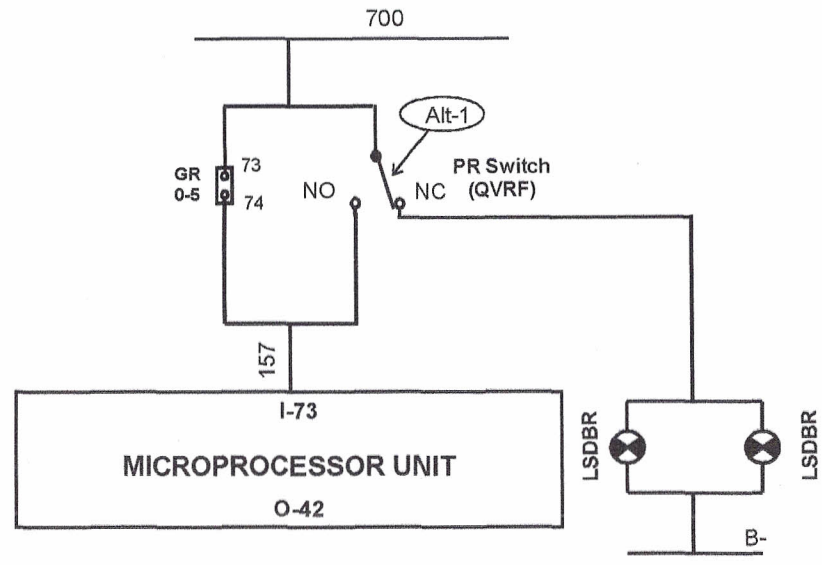
CLW
POH workshops
Electric loco sheds.

13. Distribution:
As per enclosed list

(Ganesh)
for Director General/Elect.



Existing Circuit



Modified Circuit

REF.	PART NO.	DESCRIPTION	DETAIL DRG. NO.	NO./LOCO	HALT.	SPEC.

REF. RDSO/2013/EL/MS/0421 Rev. '1'		SCALE	APPD. BY	25-10-13 (FOR DG)	

Schematic diagram for LSDBR circuit in MPCS fitted locos.

FIRST ISSUED 15.02.2013

SUPERSEDES

SUPEREDED BY

RDSO. ELECT. DTE.

SKEL-4886 Alt '1'

STATUS	ALT.	REF. NO.	DESCRIPTION	APPD. BY	DATE
	1	Ms0421	QVRF I/L position changed		25-10-13

Dt.	25-10-13
D	MS
C	SK
T	