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C-D&D/T/21, Vol. -I **Date: 19.07.2023**

Sr. DEE/ELS
All Zonal Railways

Sub: Software of Energy Saving in Wag-9/9H class 3-Phase Loco GTO locomotive.
Ref: (i) RDSO letter no. EL/3.1.35.17 dated 30.09.2020.
(ii)This office letter no. C-D&D/T/21, Vol.-I, dated 02.03.2020.

1.0 RDSO vide ref.(i) had issued MS 0482 to implement Energy Saving scheme in three phase electric locomotive. In this following modification is to be done:

a. **Hardware Modification:** Wiring modification needs to be carried for re-distributed the loads among auxiliary converters in which ScTMB is removed from BUR-3 and added to BUR-2. For this output supply of BUR-2 needs to be taken before 52/1 contactor for which necessary modification in mechanical structure of BUR-2 Box needs to be done.

b. **Software Modification:** BUR contactor 52/1 and 52/5 have to be opened by software logic in loaded condition and the condition is mentioned in clause no. 4.5 RDSO MS 0482

2.0 CLW vide ref.(ii), has released a trial software version for energy saving scheme which has been validated in two GTO locos equipped with MICAS VCU at ELS/BIA/SECR since 2021. In this software, BUR2 output will switch off through software without any change in present wiring scheme, once locomotive will be standstill for 05 Minutes. It is to be noted that BUR1 output is already dependent on Oil temperature of transformer and will be switched off once oil temperature goes below 55 Deg Cel.

3.0 Hence for implementation of energy saving scheme in GTO locomotive, above software can be used without any hardware change. The details of the software can be obtained from the link below:
https://clw.indianrailways.gov.in/view_section.jsp?lang=0&id=0,295,329,493,495

Or

CLW website→Department →Electrical→C-D&D→Download LOCO Software for GTO MICAS VCU

4.0 If any of the locomotive is provided with cab-AC then it should be shifted to BUR-3 with the aforesaid software for working of cab-AC during energy saving scheme

Encl.: Reference as above

19/07/2023
Dy. CEE/D&D-I/CLW

Copy to:

CELE, All Zonal Railways	:	For kind information please.
Director/TPS, RDSO, Manaknagar, Lucknow- 226011	:	For kind information please.

19/07/2023
Dy. CEE/D&D-I/CLW

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RDSO/DESIGN/ CLW , CHITTRANJAN

No. RDSO/CLW/01/2023 Dt. 05.07.2023

DY. CEE /D&D-1
CLW/CRJ

Sub: RDSO modification sheet no. 0482.

Ref: (i) Director/Elect./TPS/RDSO's letter no. EL/11.5.5/21 Dt. 05.07.2023

Please find enclosed herewith the above reference letter no (i) received from RDSO/LKO for kind information and further necessary action please.

D.A. 01 Page

MITHILESH KUMAR (M. KUMAR)
Digitally signed by MITHILESH KUMAR
Date: 2023.07.05 12:10:27 +05'30'

Director(Design)/RDSO/CLW/Chittranjan

Copy to,

CEE/D&D/CLW – For information please.

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Sub: RDSO modification sheet no. 0482.

Ref: **(i)** This office letter no. EL/3.1.35/17 dated 30.09.2020.
(ii) JD/Design (RDSO)/CLW letter no. RDSO/CLW/01/2022 dated 28.09.2022.
(iii) This office note no. EL/11.5.5/21 dated 16.12.2022.
(iv) CLW letter no. C/D&D/T/24 (Part) dated 03.02.2023.
(v) CLW letter no. C-D&D/T/42, Vol.-1 dated 08.06.2023.

Vide reference (i) above, this office had issued MS-0482 for implementing Scheme for Energy Saving in 3-phase freight electric locomotives. Vide ref. (ii) above, CLW has examined the MS-0482 and proposed the alternate scheme by just switching off BUR-2 for implementation of Energy Saving scheme in 3-phase freight electric locomotives. In this regard, CLW proposal by just switching off BUR-2 was examined and comments/suggestion had been given on CLW alternate scheme to achieve energy saving and also advised to review the proposed scheme vide letter under reference (iii).

Further, propulsion manufacturer were advised by CLW to implement the subject scheme in future supplies from Mar'23 onwards vide letter under reference (iv). However, the subject modification has not been implemented by propulsion OEMs as they raised the issue to operate contactor 52/1 and 52/5 in loaded conditions and other concern also in hardware modification.

Further, CLW re-examined the aforesaid RDSO scheme (MS-0482) with propulsion OEMs and informed that operational advantage of energy saving as provided by RDSO scheme can be obtained by an updated scheme by CLW scheme without any hardware changes vide letter under reference (v) and also requested that CLW proposed scheme may be re-examined considering the points mentioned and feedback/ comments to be provided. The scheme stipulates that only BUR-2 will be switched off and in BUR-1 0Hz ventilation will be initiated whenever temperature goes below the threshold level. Hence, this scheme will conserve the similar energy as proposed in RDSO scheme (MS-0482).

In view of the above, it is advised that proposed modification may be carried out by modifying the software as per extant guideline of CLW for software modification without any hardware changes to achieve energy saving as per RDSO scheme (MS-0482). However, it is also advised to carry out shifting of Cab AC to BUR3, so that air-conditioning in cabs is not affected.

This is for kind information and necessary action.

Digitally Signed by Amit Kumar Saraf
Date: 05-07-2023 18:48:11
Reason: Approved

ED(Design)/RDSO/CLW