

**Ministry of Railways**  
**Research, Designs & Standards Organisation**  
**Manak Nagar, Lucknow - 226 011**

No. EL/3.2.61

Dt. 22-05-1998

**SPECIAL MAINTENANCE INSTRUCTIONS NO. RDSO/ELRS/204**  
**REMEDIAL MEASURES TO MAIN PROBLEMS OF VCB TYPE 20CB OF**  
**GEC ALSTHOM MAKE**

**1.0 OBJECT**

1.1 Railways have reported the following problems on VCB type 20CB.

- (i) Breakage of WSI make Insulators.
- (ii) Air leakage from magnet valve, relay valy etc.
- (iii) Puncturing of main air pipe.
- (iv) Auxiliary contact overheating.
- (v) Ineffectiveness of air dryer.
- (vi) Breakage of operating red and its pin loosening.
- (vii) Flashover inside the cradle cover components due to water entry from cradle cover

1.2 In order to overcome these problems, Railways are advised to follow the instructions as under.

**2.0 INSTRUCTIONS**

- (i) Problem of breakage of insulators both vertical as well as horizontal of the GEC make Vacuum Circuit Breakers were mainly on WSI make insulators used breakers from Sl. No. 2313/L since Sept. '96' supplied by M/s GEC/ 32 Nos. breakers with WSI insulators have been supplied to the Railways. Use of WSI insulators by M/s. GES has been stopped as the same are found to be weaker in strength. M/s. GEC will replace all the breakers provided with WSI insulators. Railways may contact M/s GEC for these replacements (Ref. clause 9 of the minutes of Co-ordination meeting hold in july '97').
- (ii) Use of imported rubber compenents cut - in from VCB serial number 1390/L (Jan '96') by M/s GEC. All the rubber components, which can be procured from M/s. GEC, are required to be replaced during AOH.
- (iii)
  - (a). Use of linger length of main and centrol air pipes introduced by M/s. GEC (by increasing 02 turns to obtain higher creepage path). Railways are required to change the existing main and centrol air pipes with inoreased length (Ref. GEC Drg. No. LSB-89) during AOH.
  - (b) Use of thicker Silicon rubber grommets cut-in from VCB Sl. No. 3441/2 (Jan '97')
- (iv) Use of wish-bone type Auxiliary Switch introduced by M/s. GEC. Railways are required to change the existing retatory type of switch by fish-bone type of auxiliary switch in a time-bound programme.

- (v) Railways to ensure that the air dryer for VCB is mounted vertically and is provided between pressu switch (QPDJ) and VCB. Air dryer required to be maintained as per RDSO SMI/137.
- (vi) Existing operating red made from Permeated has be replaced by Fibber Re-informed Plastic (FRP) red from VCB Sl.No. 2034/L (Jun '96'). by M/s. GEC. The pin at the bottom of the operating red for operation of the auxiliary switch has been bonded to the red so that the same would not become loose during service. Material of operating lever has also been chanced to FRP. For replacement requirements. Ring ∠fibber are requested to use the ∠reinforced plastic (FRP).
- (vii) Implement RDSO SMI No. RDSO/ELRS/SMI/161 (Rev. 1) and Modification Sheet No. RDSO/WAM4/209.

### 3.0 **REFERENCE**

Minutes of the co-ordination meeting held between Railways and M/s. GEC in July '97' and circulated vi RDSO's letter No. EL/3.2.61 dtd. 18-19.08.97.

### 4.0 **INSTRUCTION DRAWING**

Nil

### 5.0 **APPLICATION TO CLASS OF LOCOMOTIVE**

All locomotives/EMUs fitted with GEC make VCB type 20 CB.

### 6.0 **AGENCY OF IMPLEMENTATION**

Sheds/Shops having locos/EMUs fitted with GEC make VCBs.