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(भारत सरकार) GOVERNMENT OF INDIA  
(रेल मंत्रालय) MINISTRY OF RAILWAYS  
(रेलवे बोर्ड) RAILWAY BOARD

No.2018/Sig/31/11-RE Matters/1

New Delhi, Dtd. 5<sup>th</sup> February, 2019

**Director General**  
**RDSO**  
**Lucknow**

**Sub:** Special Requirement of Signaling in 25 KV AC RE Area- Maximum permissible length of Direct Feed of Signals in case of LED lamps.

**Ref:** LED Signal aspect RDSO Specification No. RDSO/SPN/153/2004(Rev.3) and Item No. 1152 of 82<sup>nd</sup> SSC dtd. 05.05.2013

As per IRSEM Pt. II Para 22.7.3, maximum permitted length of direct feed of signals in case of LED lamps has attracted Board's attention. It is found that the issue has been studied by RDSO in separate cases. Summary of the two cases are reproduced below:

**Case 1 (SECR - RDSO Letter No. STS/E/EI-LED dtd. 10.08.2009)**

'As per Cl. 6.1.10 of RDSO Spn. No. RDSO/SPN/153/2004/Rev.3 (Draft) for LED signals lighting units, LED Signals are designed not to light up to 60V.

60V immunity in case of LED signals is not the inherent immunity of LEDs. This immunity is acquired through electronic circuit and hence may vary due to ageing/failure of components as LED/LED clusters may light at lower voltage.

Minimum AC voltage which may light up the LED clusters of LED Signals in worst case if the circuit to ensure lighting above 60V is faulty due to malfunctioning, of failure of components/bypassed etc., is being ascertained from vendors of LED Signals.

In view of the above presently, no change in Para 22.7.3 and 22.7.4 of SEM Pt. II is recommended.'

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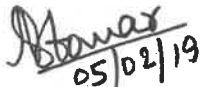
**Case 2 (82<sup>nd</sup> SSC Item No. 1152)**

The issue discussed in the agenda item no. 1152 for specification of LED Signals and summarized as - *"The issue of direct feeding distance of LED Signals were deliberated. After discussion, it was agreed not to do any changes for direct feeding of LED signals and follow Para 22.7.3 of SEM part II for LED signals also."*

From the above, it is deduced that the immunity for direct feeding of LED aspect of specification No. RDSO/SPN/153/2004/Rev.3 is dependent on the electronic components and associated circuitry.

RDSO may, therefore, examine the feasibility of making the immunity of LED signal aspects not vulnerable to component failures and if the same is feasible, it should be certified by an ISA.

This has the approval of DG(S&T).

  
05/02/19  
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