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	NETWORK RAIL - SIGNAL ENGINEERING Signal House LED Colour Light Signals – Aspect Module Voltage Tappings
Relevant Standard: NR/L3/SIG/11303/2M05 & NR/SMS/SG10	

Purpose

This Technical Instruction is required to inform staff of a problem with Signal House LED Colour Light Signals and the required actions to be taken.

Scope

This TI applies to all Signal House LED Colour Light Signals controlled by relay circuits

Background

An investigation into an incident involving a Signal House LED Colour Light Signal has revealed a potential Wrong Side Failure mode where the signal can be black but the lamp proving is maintained. The risk of this occurring is extremely low however it has been determined that if a power 'blip', i.e. short interruption in supply were to occur, followed by a slow rise in supply voltage back to nominal, it is possible for the signal aspect to be black but for lamp proving to be maintained. However, because of the way in which SSI and similar styles of interlockings work, e.g. Westlock and Smartlock, this type of failure is limited to areas controlled by relay circuits. To mitigate this risk for signal heads already commissioned NR/SIN/112 has been issued and describes an alteration to the transformer tappings and prevents a black aspect being displayed with the proving maintained.

Note: as a result of this problem being discovered, Product Acceptance for the Signal House LED Colour Light Signal is now restricted to SSI style control areas. In exceptional circumstances these signals may be installed on areas controlled by relay circuits but only if approval by the Technology Manger [Signalling] and the Route Asset Manager [S&T] is granted.

Abbreviations & Definitions

LED – Light Emitting Diode
 SSI – Solid State Interlocking
 TFM – Trackside Functional Module

Action Required

All Signal House LED Colour Light Signals controlled by relay circuits shall have the primary transformer tappings on the LED aspect modules set to the 0 – 121V positions irrespective of the supply voltage (see figure 1).

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Figure 1 – Aspect Module Tappings

Compliance Requirements

All new installations of Signal House LED signal heads must be adjusted to this setting before final commissioning.

Expiry Date

This Technical Instruction will be reviewed when the investigation has been concluded and any modifications that may be required to the LED aspect modules have been developed and tested.

Staff to be Briefed

Role	Responsible for Briefing
Head of Asset Management (S&T)	Author
Route Asset managers (S&T)	Head of Asset Management (S&T)
Signal & Telecoms Maintenance Engineer	Route Asset managers (S&T)
Section Manager (Signals)	Signal & Telecoms Maintenance Engineer
Signalling Technicians	Section Manager (Signals)
Signalling Support Staff	
Senior Programme Engineering Manager	Author

End



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