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Technical Direction – TD 00001:2025

Issue date: 06 February 2025

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Title: Update to TS 03988:1.0 *Electric Auxiliary Power Supply and Battery System for Passenger Rolling Stock*

This technical direction is issued by the Asset Management Branch (AMB) as an update to TS 03988:1.0 *Electric Auxiliary Power Supply and Battery System for Passenger Rolling Stock*.

1 Background

TS 03988:1.0 was published on 22 February 2022.

TS 03989:1.0 *Electric Passenger Rolling Stock Onboard Main Power Supply System – 1500 V dc* was published on 18 May 2022.

Section 5.8 of TS 03988:1.0 which relates to EAPS redundancy contains content copied from the August 2015 version of TS 03989 (T HR RS 11001 ST at that time).

When TS 03989:1.0 was published in May 2022 the content that appeared on the 2015 version was changed.

The corresponding content in TS 03988:1.0 needs to be changed.

2 Amendment to TS 03988:1.0

Section 5.8 EAPS redundancy

Delete the following:

The EAPS system shall continue to operate seamlessly and normally through interruptions of input power from one of the OHW current collecting devices supplying the train for up to 15 seconds. Refer to the requirements of the onboard main power supply in T HR RS 11001 ST.

Note: Interruption of power from the OHW or main power supply includes interruption due to pantograph bounce lasting up to 3 seconds, and high speed circuit breaker trips that are successfully cleared and reset within 15 seconds.

Replace the deleted text with the following:

The EAPS system shall comply TS 03989 requirements related to onboard main power supply system requirements.

Electric multiple unit (EMU) passenger trains operating on the TfNSW metropolitan heavy rail network use two pantographs per 4 car unit. Each pantograph provides power to a set of traction and auxiliary power modules. In the event of an onboard main power supply power loss due to pantograph bounce, pantograph failure or damage, or a high-speed circuit breaker (HSCB) tripping only the connected traction modules are directly affected. The train may be able to continue passenger service to end of the service leg and return to the nearest maintenance centre using the remaining operating pantographs and traction modules.

For the auxiliary power supply, a high-tension electrical link provides a temporary power supply to the affected auxiliary power modules from an adjacent pantograph. Historically this was to negate the 240 V EAPS fed main lighting from flickering on and off due to excessive pantograph bounce.

This design feature is unnecessary if the supplier can demonstrate main lighting and emergency ventilation being maintained through other means whilst encountering pantograph bounce or HSCB tripping.

Authorisation:

Approved by	Director Fleet Engineering Asset Management Planning, Integration and Passenger
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