Annual report of health and safety on Britain's railways 2023 to 2024

Docklands Light Railway

Over the past year, the team has continued to monitor the change management process applied by Keolis Amey Docklands for the testing and introduction of new trains, as well as the maintenance challenges of the current end-of-life fleet. The introduction of a further new fleet is currently behind schedule, due to issues surrounding performance which were identified during testing. Nevertheless, both the operator and manufacturer have worked well with us to provide assurance so that testing can continue.

Case study 2: Alstom software

Background

MTR Elizabeth line (MTR) currently operates a fleet of 70 class 345 units, which are leased to Transport for London, sub-leased to MTR Elizabeth line and maintained by Alstom as the Entity in Charge of Maintenance (ECM). The fleet operates over 3 separate signalling systems: AWS / TPWS on traditional 3 and 4 aspect colour light signalling, Communications Based Train Control (CBTC) utilising Automatic Train Operation (ATO), and a level 2 ETCS overlay system between Ealing Broadway, Heathrow Airport Terminals 4 & 5 and West Drayton.

The trains were introduced into passenger service in 2017 but did not begin operations on ETCS fitted lines until 2020. Through the compatibility process required to introduce the class 345 trains, a total of 84 TSI (Technical Specifications of Interoperability) non-conformances were

identified on the ETCS system.

The ETCS system had various maintenance upgrades, along with upgrades of the TCMS (Train Control Management System) to support full functionality of the Class 345 and for it to be fully compliant to the TSI and remove the 84 non-conformances.

On 6 May 2020 we granted Authorisation to place into Service for the ETCS enabled class 345s with stipulations to achieve the completion (of the non-conformances) by 31 March 2024.

In the period between authorisation and full integration onto the Network, the Class 345 has been subject to several in service incidents.

Approach to resolution

ORR engaged with MTR requiring them to undertake a root and branch review of software specification and application, in order to demonstrate that the software used on the Class 345 did not give rise to risk.

Consultants were jointly engaged by MTR and RfL as the operator and owner of the Class 345 to undertake an audit. This resulted in various workstreams to improve software integrity, conducted alongside the work to resolve the TSI non-conformances.

Conclusion

MTR has assessed all current ETCS non-conformances and are satisfied that the current live list either have no significant impact on MTR's operations or are controlled via existing mitigation measures to as low as reasonably practicable and represent a tolerable risk to MTR's operations.

ORR, MTR and Alstom have collaborated well together to agree a timely solution.

- ← Previous London Underground Limited (LUL)
- → Next Trams and light rail