Queensland Government

RAIL SAFETY REGULATION SAFETY ALERT

NOTICE TO ACCREDITED RAIL TRANSPORT OPERATORS

THIS ADVICE IS EFFECTIVE IMMEDIATELY

04/12 – Isolation of train protection systems

Background

The *Transport (Rail Safety) Act 2010* (the Act) provides that, so far as is reasonably practicable, rail safety is not affected by the carrying out of prescribed railway operations.

When a rail transport operator (RTO) gains accreditation to enable it to carry out railway operations, the RTO must have, and implement, a safety management system (SMS). An SMS describes the systems used to fulfil the RTO's responsibilities and includes the maintenance and safe operation of locomotives. All rail safety workers, including train drivers and those responsible for maintenance of rolling stock have a duty to comply with the SMS.

Recently, there have been incidents where locomotives have been operated with train protection systems isolated in contravention of the railway's SMS. In one case, confusion about respective responsibilities compounded the situation.

A breakdown or failure of an SMS may lead to a breach of an RTO's duty to ensure rail safety.

Section 24 of the Act provides that an RTO must ensure, so far as is reasonably practicable, that rail safety is not affected by the carrying out of the railway operators prescribed railway operations, which includes the operation or movement of rolling stock on a railway track. Upon conviction, penalties for a breach of section 24 of the Act include imprisonment for up to three years or a fine of up to $200,000.

Train protection systems

A train protection system is a railway technical installation to ensure safe operation in the event of human failure. In Queensland this can include Automatic Train Protection (ATP), Station Protection and Vigilance Systems. A brief overview regarding the use and limitation of each system follows.

Automatic Train Protection

ATP refers to a form of train protection system installed in some trains to help prevent collisions or derailments through a driver's failure to observe a signal or speed restriction.

The ATP system uses a target speed indication and audible warnings to alert the train driver if they are likely to exceed a speed profile that will cause the train to pass a red (danger) signal or exceed a speed restriction. The system takes into account the speed and position of the train relative to the end of its 'movement authority'. Where fitted, ATP is designed to provide messages and audible warnings to alert train drivers to the actions they should take to correct a deteriorating situation. The system will apply the train brakes if the driver fails to respond to these warnings.

ATP is separate to, and independent of, other forms of train protection that may be fitted.

The ATP system can be isolated if the system fails for some reason. If isolated, the ATP will no longer supervise the limit of authority, current speed limit, or 'roll-away'. The Station Protection and Vigilance Systems are unaffected by the isolation of the ATP and, therefore, should be fully functional.

Station Protection

Station Protection is a system of magnets located at various locations on sections of track which are read by passing trains. The magnets are also located on the approach signal of a station. When a locomotive passes over these magnets an alarm sounds for a maximum of three seconds and a light illuminates regardless of whether of not the driver presses the acknowledgement button. If the acknowledgement button is not depressed the train brakes will apply.

Vigilance System

The Vigilance System, also referred to as a 'dead-man's' system, is a safety device that operates in case of incapacitation of the train driver for any reason. The Vigilance System functions by providing alerts to which the driver must respond. Periodically, a visual and audible warning alert is given by the system. If the train driver fails to acknowledge the warning a brake application is made.

The Vigilance System is not infallible and should not be taken to indicate that the driver is vigilant in the true sense of the word. This is because the Vigilance System does not measure driver alertness, but merely requires the mechanical and/or instinctive response of the driver to press a button. It has been shown that such driver responses can occur without conscious input by a driver. Accordingly, the Vigilance System is generally used with other train protection systems.

Isolation of train protection systems

In developing an operation plan with the network manager, the rolling stock operator jointly develops an interface risk management plan which outlines the risks and controls to be managed. For RTO's operating locomotives fitted with train protection systems, this will include the circumstances where the train protection system can be isolated.

In general, a lead locomotive must not depart a maintenance depot with any of the train protection systems isolated. If a train protection system fails, then agreed additional controls such as a second safe-working qualified driver and a set maximum time without this additional control, should be agreed and in place. The network train controller must be advised of the isolation of the train protection system, in order to monitor the, higher than agreed, risk situation.

Action

Rail Transport Operators are requested to initiate the following actions urgently:

> **Affected Rail Transport Operators should review their Safety Management System to ensure they have systems in place to manage the isolation of train protection systems and ensure their staff are aware of and comply with those systems.**

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