



INDEPENDENT  
TRANSPORT  
SAFETY  
REGULATOR

# Implementation of the NSW Government's response

## to the Final Report of the Special Commission of Inquiry into the Waterfall Rail Accident

Reporting period: April - June 2012

REPORT 30

**ITSR**

Safe transport for NSW

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The Hon. Gladys Berejiklian  
Minister for Transport  
Level 35 Governor Macquarie Tower  
1 Farrer Place  
Sydney NSW 2000

Dear Minister

I am pleased to provide the 30th quarterly report on the implementation of the NSW Government's response to the recommendations contained within the *Final Report of the Special Commission of Inquiry into the Waterfall Rail Accident*.

This report reflects implementation progress from 1 April to 30 June 2012.

At the close of this period, there are two open recommendations. The Independent Transport Safety Regulator (ITSR) reports publicly on open recommendations.

Recommendations that have been closed subject to implementation of an approved program or plan are monitored as part of ITSR's ongoing regulatory activities to ensure these are fully implemented.

Further information about the history and progress of the implementation of all recommendations can be found on the ITSR website. This information includes:

- copies of previous ITSR quarterly reports
- a document containing all 177 recommendations
- a summary of the 13 recommendations that have been closed subject to the implementation of an approved program or plan.

Yours sincerely

Len Neist

Chief Executive

## Summary of progress

The Independent Transport Safety Regulator (ITSR) is responsible for overseeing the implementation of the NSW Government's response to the recommendations contained within the *Final Report of the Special Commission of Inquiry into the Waterfall Rail Accident*.

This role includes verifying that recommendations have been effectively implemented or that an approved program or plan is in place for implementation. ITSR produces quarterly public reports on the progress of open recommendations.

At the end of the reporting period, the status of the 177 recommendations (including 127 recommendations and 50 sub-elements) was as follows:

- 2 remain open
- 13 are closed subject to the implementation of an approved program or plan
- 156 are closed and verified as fully implemented
- 1 is closed because it is no longer applicable
- 5 are rejected by the government and these were closed.

The methodology and taxonomy for the classification system used for the Waterfall recommendations are in Appendix 1 and 2 respectively.

The two open recommendations, which are outlined in further detail in Appendix 3, are:

- 32: RailCorp should progressively implement, within a reasonable time, level 2 automatic train protection (ATP). ATP systems provide automatic enforcement (slowing/braking) of authority (speed/location) if a train is behaving in an unauthorised way. Implementation will involve significant infrastructure change and is the subject of a major project.

The interim target date for the next milestone relating to this recommendation is 31 August 2012. This is when RailCorp will complete the installation of ATP equipment onboard a V set test train and to a section of track from Gosford to Wyong. The installation of the ATP equipment onboard a test train was completed in March 2012. All of the trackside cabinets between Gosford and Wyong have been installed and programming and commissioning of these cabinets is progressing well. This will enable the testing of both the onboard and trackside equipment, which will occur shortly after the completion of the trackside installation and commissioning.

The next major milestone for this project will be the fitting of trackside equipment to the section of track from Berowra to Wyong, which RailCorp expects to complete by the end of February 2013.

RailCorp has advised that the completion date of February 2013 is conditional upon RailCorp's contractor achieving European design certification (used to establish RailCorp Type Approval) for a key component of the trackside equipment which acts as the interface between the existing signalling system and the ATP system. A program for the resolution of this issue has been devised and presented to RailCorp by the contractor.

RailCorp has commenced work on the ATP installation design with work commencing on fitting the first OSCAR prototype to begin in the fourth quarter 2012.

Subject to the successful completion of these actions, RailCorp expects that the first OSCAR train fitted with ATP equipment, will be commissioned into passenger service and operate between Berowra and Wyong in 2014.

- 38: There must be compatibility of communications systems throughout the rail network. It is essential that all train drivers, train controllers, signallers, train guards and supervisors of trackside work gangs in NSW be able to communicate using the same technology.

Following extensive review by RailCorp and its delivery contractor, the schedule for completion of the DTRS (includes completion of the DTRS fixed network and fit out of the train cabs) has been revised to 30 April 2015. This is considered to be a credible and achievable target date. Accordingly, the target date for implementation of RailCorp's DTRS is 30 April 2015.

The installation of DTRS base stations for the fixed network continued to be progressed by RailCorp. Installation of DTRS base station sites includes a 21 day period for community feedback on proposed installations. This consultation has now been completed for 33 DTRS base station sites and 14 sites have entered the construction phase. The remainder of approximately 250 DTRS base station sites to complete the fixed network will progressively enter the community consultation phase throughout 2012.

As of 30 June 2012, five of these sites are complete and have been successfully connected to the completed core site at Homebush. Initial testing activities for the fixed network commenced in June 2012 with the DTRS test train successfully communicating with the base station sites in the test area during several test runs. The second core equipment site has now been handed over to the contractor for installation of the second DTRS core.

This statement provides implementation progress from 1 April to 30 June 2012.

## Progress on recommendations

### Recommendation 32

In August 2010, the NSW Government gave in-principle funding approval for the rollout of the three stages of RailCorp's ATP program and full funding approval for the implementation of stage 1 of the program. Expected completion dates for the three stages are:

- stage 1 – 2011 to 2017
- stage 2 – 2013 to 2018
- stage 3 – 2015 to 2021.

The system chosen to implement RailCorp's ATP program is the European Train Control System (ETCS). The rollout of this program will be in three stages. Stage 1 involves the supply of ATP equipment for RailCorp's OSCAR and Tangara train fleets and the installation of ATP equipment to 600 kilometres of the CityRail network. Stages 2 and 3 will involve the installation of ATP equipment across the rest of RailCorp's electrified network and onboard the Waratah and Millennium train fleets.

In February 2011 RailCorp awarded four separate supply contracts including ETCS supply and engineering services trackside and onboard, and through life support trackside and onboard. The onboard through life support contract commenced in the second quarter of 2012 and the trackside through life support contract is expected to commence in the third quarter of 2012.

The trackside contracts include the provision of lineside electronic units, balises, programming tools, engineering services and engineering support. The onboard contracts include the provision of driver machine interface equipment, European vital computer equipment, engineering services and engineering support. Furthermore, the supply contracts for stage 1 include a trial of the ETCS level 2 between Sutherland and Cronulla.

Level 1 ETCS involves the overlay of the coloured light signalling system to indicate authorities for trains to proceed on the network. Level 2 ETCS involves the overlay of the track circuits and interlockings to separate rail traffic. However, the coloured light signalling system may be removed and authorities for trains to proceed are transmitted via GSMR radio to an onboard computer.

The interim target date for the next milestone relating to this recommendation is 31 August 2012. This is when RailCorp will complete the installation of ATP equipment onboard a V set test train and to a section of track from Gosford to Wyong. The installation of the ATP equipment onboard a test train was completed in March 2012. All of the trackside cabinets between Gosford and Wyong have been installed and programming and commissioning of these cabinets is progressing well. This will enable the testing of both the onboard and trackside equipment, which will occur shortly after the completion of the trackside installation and commissioning.

The next major milestone for this project will be the fitting of trackside equipment to the section of track from Berowra to Wyong, which RailCorp expects to complete by the end of February 2013.

RailCorp has advised that the completion date of February 2013 is conditional upon RailCorp's contractor achieving European design certification (used to establish RailCorp Type Approval) for a key component of the trackside equipment which acts as the interface between the existing signalling system and the ATP system. A program for the resolution of this issue has been devised and presented to RailCorp by the contractor.

RailCorp has commenced work on the ATP installation design with work commencing on fitting the first OSCAR prototype to begin in the fourth quarter 2012.

Subject to the successful completion of these actions, RailCorp expects that the first OSCAR train fitted with ATP equipment, will be commissioned into passenger service and operate between Berowra and Wyong in 2014.

## **Recommendation 38**

This recommendation requires implementation of RailCorp's new digital train radio system (DTRS) and the development of a national communications standard by the Rail Industry Safety and Standards Board (RISSB).

The new DTRS currently being designed will enhance communication between trains and network control in an emergency as well as enable communication between other staff for rail operations on the RailCorp network.

It should be noted that all rail safety workers are currently able to communicate with each other but not using the same technology.

The Australasian Railway Association, in consultation with operators and rail safety regulators, developed a national approach on communications systems to ensure that agreed functionality and compatibility requirements were included in the national railway communications standard developed by RISSB. In December 2010, RISSB published the *Railway Communications Standard – AS7660* for implementation.

Following extensive review by RailCorp and its delivery contractor, the schedule for completion of the DTRS (includes completion of the DTRS fixed network and fit out of the train cabs) has been revised to 30 April 2015. This is considered to be a credible and achievable target date. Accordingly, the target date for implementation of RailCorp's DTRS is 30 April 2015.

The installation of DTRS base stations for the fixed network continued to be progressed by RailCorp. Installation of DTRS base station sites includes a 21 day period for community feedback on proposed installations. This consultation has now been completed for 33 DTRS base station sites and 14 sites have entered the construction phase. The remainder of approximately 250 DTRS base station sites to complete the fixed network will progressively enter the community consultation phase throughout 2012.

As of 30 June 2012, five of these sites are complete and have been successfully connected to the completed core site at Homebush. Initial testing activities for the fixed network commenced in June 2012 with the DTRS test train successfully communicating with the base station sites in the test area during several test runs. The second core equipment site has now been handed over to the contractor for installation of the second DTRS core.

# Methodology

This section outlines the processes ITSR has instituted to develop and monitor the implementation plan for the NSW Government's response to the *Final Report of the Special Commission of Inquiry into the Waterfall Rail Accident* (SCOI final report).

## Implementation plan

ITSR has reviewed the SCOI final report and determined action required to implement each recommendation in line with the government's response and which company or agency has responsibility for that action. These expectations then formed the basis for determining whether the response put forward by a company or agency is appropriate to meet the recommendation and/or satisfy the safety objective of the recommendation. Responsible agencies have assigned indicative timeframes for each safety action and ITSR will review the appropriateness of each. Timeframes agreed with responsible companies or agencies have, to the greatest extent possible, been made realistic and achievable. Details of the implementation plan for outstanding issues and progress against it may be found in Appendix 3.

## Classification system for recommendations

In order to provide a graduated view of progress against the implementation plan, ITSR has developed a classification system to indicate the relative status of each recommendation. The taxonomy for the classification system has been drawn from accepted international practice and is listed in Appendix 2.

The process for assigning status to a recommendation is as follows:

- Step 1** The government's response to the SCOI final report determined which recommendations were accepted. ITSR has articulated its expectations in regards to all remaining recommendations.
- Step 2** All accepted recommendations are assigned the status *open – await response*. These recommendations are then referred by ITSR to the relevant company or agency to prepare a response to the recommendation(s) and submit it to ITSR.
- Step 3** ITSR reviews the response and determines whether it is acceptable or not. If it is acceptable then the status of the recommendation is assigned either *open – acceptable response* or *open – acceptable alternative response*. A recommendation would be assigned an *open – acceptable alternative response* status when the intent of a recommendation will be met but will be implemented by alternative means. If the response is not acceptable then the recommendation is assigned the status of *open – response rejected by ITSR*. In this case, the company or agency is informed of the decision and requested to re-submit a revised response taking into account ITSR's concerns. This process continues until the response to the recommendation is accepted by ITSR.
- Step 4** ITSR monitors progress of all accepted responses to ensure a company or agency is meeting agreed implementation timeframes. This is done through both desktop reviews of reports received by agencies and in-field inspections to verify progress claimed.

**Step 5** Once a company or agency has completed a required action it will submit to ITSR a claim for closure of the recommendation. This application indicates that the company or agency believes it has completed the required action. The status of the recommendation is changed to *open – company claims closure*.

**Step 6** In most cases, ITSR will verify closure through an in-field compliance inspection or audit. Once verification has taken place the recommendation status is changed to indicate it is *closed – action verified*.

**Notes:**

- 1 Some recommendations may be verified by examination of documentation submitted by the agency that claims closure rather than through an in-field inspection. In these cases, recommendation status is indicated by *closed – action not verified*.
- 2 Some recommendations may be verified *closed – subject to the implementation of an approved program or plan*. In these cases, ITSR agrees to closure if the chief executive of the organisation has approved the program or plan and ITSR is of the view that it meets the government's response to the recommendation. This categorisation is used generally when implementation may take place over a prolonged period of time and/or capital expenditure is involved.

This process will continue until all recommendations are closed.

## Taxonomy for classification system

Status		Definition
Open	Await response	This status is automatically assigned to an accepted recommendation. Affected parties will be asked to submit their response for implementing the recommendation to ITSR.
Open	Response received	ITSR has received a response from an affected party and this response is under review by ITSR. It has not yet been accepted by ITSR.
Open	Acceptable response	ITSR agrees that the planned action, when completed, meets the recommendation.
Open	Acceptable alternative response	ITSR agrees that alternative action, when completed, satisfies the objective of the recommendation.
Open	Response rejected by ITSR	ITSR does not agree that the planned or alternate action meets the recommendation. The company or agency is advised of the rejection and requested to provide a revised response.
Open	Company claims closure	The company or agency claims that the planned or alternate action has been completed. The action has not yet been verified by ITSR. ITSR has not yet agreed that the item is closed.
Closed	Recommendation rejected	ITSR has determined through further analysis and review that the recommendation is not appropriate (i.e. will not achieve the desired safety outcomes) and has rejected the recommendation. It is therefore closed.
Closed	No longer applicable	The recommendation has been overtaken by events and action is no longer required. For example, a new technology has eliminated the reason for the recommendation, it has been superseded by other recommendations issued, or the operator affected has gone out of business.
Closed	Action verified	Completion of the planned or alternate action has been verified by ITSR through a compliance inspection or audit.
Closed	Action not verified	ITSR accepts that the planned or alternate action has been completed following a review of documentation submitted. Field verification is not necessary.
Closed	Subject to the implementation of the approved program or plan	A long term implementation plan has been approved. ITSR will monitor reported progress against the plan to ensure compliance with delivery schedule.

## Appendix 3

### Implementation plan: outstanding recommendations

The following section provides information only for recommendations that were closed in the last quarter or remain to be implemented. Those recommendations closed in previous quarters do not appear. A complete list of all recommendations is available on ITSR's website.

The government response and ITSR expectation sections of this table are the formal responses to the SCOI final report announced in February 2005.

Recommendation 32			
RailCorp should progressively implement, within a reasonable time, level 2 automatic train protection (ATP).			
Agency	Status	ITSR assessment	Target date
RailCorp	Open	Acceptable response	*31/08/2012

#### Government response

Requires further detailed review. The government supports the implementation of additional train protection systems. Implementation of level 2 ATP as detailed in the recommendation would involve the replacement of all line-side signalling on the RailCorp network with on-train control systems. In addition every intra- and inter-state train accessing the network would also need to be equipped with level 2 ATP technology.

RailCorp has already retained consultants to undertake evaluation and risk assessment regarding implementation of additional automatic train protection systems on the RailCorp network. RailCorp will work with the Australian Rail Track Corporation (ARTC) – which operates the interstate network – to develop, in conjunction with ITSR and interstate rail regulators, a national standard for an automatic train protection system.

RailCorp will also undertake a comprehensive review which will include a risk assessment, technical feasibility and cost benefit analysis of introducing level 1 ATP as well as level 2 ATP, as recommended by the Commission. Consistent with recommendation 34 any future options will need to be assessed by independent verification of acceptable risk.

#### ITSR expectation

A detailed technical review of available options. This is to be a project led by RailCorp. The major outcome of the project is to be a business implementation of ATP.

#### Status at 30 June 2012

The case to support a government decision concerning supply contracts awarded in February 2011 covers stage 1 implementation of the ATP program and involves:

- supply of ATP equipment for RailCorp's OSCAR and Tangara fleets
- installation of ATP equipment to 600 kilometres of the CityRail network
- a trial of ETCS level 2 between Sutherland and Cronulla.

\* This is an indicative timeframe which has been agreed to by the agency responsible and ITSR.

+ This indicates a slippage with a revised date.

# This indicates closure – subject to the implementation of an approved program or plan.

The interim target date for the next milestone relating to this recommendation is 31 August 2012. This is when RailCorp will complete the installation of ATP equipment onboard a V set test train and to a section of track from Gosford to Wyong. The installation of the ATP equipment onboard a test train was completed in March 2012. All of the trackside cabinets between Gosford and Wyong have been installed and programming and commissioning of these cabinets is progressing well. This will enable the testing of both the onboard and trackside equipment, which will occur shortly after the completion of the trackside installation and commissioning.

RailCorp expects trackside equipment to be fitted to the section of track from Berowra to Wyong by the end of February 2013.

RailCorp has advised that the completion date of February 2013 is conditional upon RailCorp's contractor achieving European design certification (used to establish RailCorp Type Approval) for a key component of the trackside equipment which acts as the interface between the existing signalling system and the ATP system. A program for the resolution of this issue has been devised and presented to RailCorp by the contractor.

RailCorp has commenced work on the ATP installation design with work commencing on fitting the first OSCAR prototype to begin in the fourth quarter 2012.

Subject to the successful completion of these actions, RailCorp expects that the first OSCAR train fitted with ATP equipment, will be commissioned into passenger service and operate between Berowra and Wyong in 2014.

Stages 2 and 3 are to be implemented between 2013 and 2021, following the awarding of further contracts.

While implementation of ETCS level 1 has commenced, a trial of level 2 ETCS is still to occur and be assessed. Accordingly, ITSR has deemed that the status of recommendation 32 continue to be classified as *open – acceptable response*.

Recommendation 38			
There must be compatibility of communications systems throughout the rail network. It is essential that all train drivers, train controllers, signallers, train guards and supervisors of trackside work gangs in New South Wales be able to communicate using the same technology.			
Agency	Status	ITSR assessment	Target date
ITSR	Open	Acceptable response	30/04/2015

### Government response

Supported and being implemented. The National Standing Committee on Transport endorsed the Australasian Railway Association (ARA) working with operators and regulators, including RailCorp and ITSR, to develop a national approach on communications systems, which has agreed minimum functionality requirements for train radio systems.

\* This is an indicative timeframe which has been agreed to by the agency responsible and ITSR.

+ This indicates a slippage with a revised date.

# This indicates closure – subject to the implementation of an approved program or plan.

RailCorp plans to implement a digital train radio system. An objective of this system is for it to be interoperable with existing analogue radio systems. Because of the technical complexities associated with achieving inter-operability, this has been a longer-term initiative and the first stage of its implementation will commence in 2005.

## **ITSR expectation**

ITSR to ensure functionality and compatibility requirements are included in the national standard currently under development by the ARA. ITSR to ensure RailCorp/ARTC radio functionality for next generation technology meets compatibility requirements.

## **Status at 30 June 2012**

This recommendation requires implementation of RailCorp's new digital train radio system (DTRS) and the development of a national communications standard by the Rail Industry Safety and Standards Board (RISSB).

In December 2010, RISSB published the *Railway Communications Standard – AS7660* for implementation, which contains agreed functionality and compatibility requirements for national railway communications. This was developed by the ARA in consultation with operators and rail safety regulators.

The new DTRS currently being designed will enhance communication between trains and network control in an emergency as well as enable communication between other staff for rail operations on the RailCorp network.

Following extensive review by RailCorp and its delivery contractor, the schedule for completion of the DTRS (includes completion of the DTRS fixed network and fit out of the train cabs) has been revised to 30 April 2015. This is considered to be a credible and achievable target date. Accordingly, the target date for implementation of RailCorp's DTRS is 30 April 2015.

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All rail safety workers are currently able to communicate with each other but not using the same technology.

Accordingly, ITSR has deemed that the status of recommendation 38 continue to be classified as *open – acceptable response*.

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