RailSafe

SAFE Notice 2025 286

ZKL LINE BLOCKAGE SYSTEM - PHASE A TRIAL

On Monday, 18 August 2025

This SAFE Notice details the requirements for Phase A Trial of the ZKL Line Blockage System Trial between Otford – Coalcliff and Coniston in accordance with the requirements outlined in this SAFE Notice.

The use of the ZKL for the trial must only be used by Protection Officers trained in its use.

The Trial must only be conducted in accordance with the attached DRAFT Network Rule and Draft Network Procedure.

The Trial must only be conducted in accordance with the approved Routine Network Maintenance Plan (RNWPP).

The trial must only be undertaken at the following areas:

Otford to Coalcliff

- WG 697 D signal to WG 658 D signal on the Down Illawarra line
- WG 660 U signal to WG 699 U signal on the Up Illawarra line
- WG 656 D signal to End of Terminal Line on the Down Refuge Siding/Perway Siding
- WG 654 D signal to End of Terminal Line on the Eastern Coal Loop Siding/Perway Siding

Coniston

- WG 121 D signal to WG 111 D signal on the Down Illawarra line/Down Port Kembla Branch line
- WG 114 U signal to WG 125 U signal on the Up Port Kembla Branch line /Up Illawarra line
- W 120 signal to WG 125 U signal on the Up North Fork/Up Illawarra line
- WG 112 D signal to WG 125 U signal on the Illawarra Main line/Up Illawarra line.

Note: The ZKL Line Blockage System must not be used to protect workers or equipment in the danger zone.

Appropriate Worksite Protection as assessed by a Protection Officer must be in place for activities in the Danger Zone.

work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

Purpose

To prescribe the rules for working in the Danger Zone using controlled absolute signals at **STOP** in conjunction with an approved track-circuit occupancy device.

Note

This method of working must be used:

- where Advanced Train Running Information Control System (ATRICS) is not available, and
- only at defined locations, and
- only with an approved track-circuit occupancy device specified in a safe work instruction XXXX.

Principle

This method excludes rail traffic from a defined portion of track for a specified period.

The Protection Officer must correctly define the nominated worksite location.

The Signaller must identify all protecting signals and points to exclude rail traffic from the nominated worksite location.

Note

If the safety assessment shows that a work on track authority is necessary, work must be carried out using:

- *NWT 302 Local Possession Authority,* or
- *NWT 304 Track Occupancy Authority*, or
- *NWT 306 Track Work Authority*.

work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

This method may be used if a Protection Officer has assessed that the work to be performed will not:

- involve multiple worksites, or
- require a work on track authority, or
- break the track, or
- alter track geometry or structure.

This method may be used to exclude rail traffic for work:

- not requiring tools, or
- using tools which can be easily and immediately removed from the track by one person and are:
  - light, non-powered hand tools, or
  - light, battery powered tools or devices, or
  - light, powered hand tools.

Authorisation

Signallers may authorise this method of protection where rail traffic can be excluded from a portion of track.

This method must not be authorised if the proposed worksite location is within the limits of:

- a Local Possession Authority, or
- a Track Occupancy Authority, or
- the protection arrangements for a Track Work Authority.

If this proposed method requires more than one Signaller to exclude rail traffic from a portion of track, the affected Signallers must confer to make sure that all routes allowing entry are protected.

Each Signaller must use *NRF Protecting using an absolute signal and track-circuit occupancy device* form to record the protection details.

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work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

Protection Officer

At all times there must be a nominated Protection Officer for this method.

The Protection Officer must:

- be the only person to tell workers about:
  - the locations of safe places, and
  - the safety measures in place, and
  - the extent of the area protected.
- be the only person to speak to the Signallers about safety arrangements, and
- make sure that the protection is in place before work starts.

When requesting this method of protection, the Protection Officer must identify the line name and define the nominated worksite location as being:

- from one signal to another signal, or
- from a signal to the end of a terminal line.

If the nominated worksite location is on more than one line, the Protection Officer must define the nominated worksite location separately for each line.

Signals used to define the nominated worksite location must be associated with the specific lines and identified by their numbers.

Protection

Rail traffic must be excluded from the nominated worksite location by:

- at least two consecutive controlled absolute signals kept at **STOP** with blocking facilities applied, and placing an approved track-circuit occupancy device to prevent all protecting signals from clearing, or
- at least one controlled absolute signal kept at **STOP** with blocking facilities applied, and:
  - securing points to prevent access, and
  - placing an approved track-circuit occupancy device to prevent all protecting signals from clearing.

work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

> **Note**
>
> Unless this method is suspended or has been ended, rail traffic must not be authorised to enter the nominated worksite location.

Before allowing work to start, each Signaller must make sure and confirm with the Protection Officer that:

- all routes allowing entry into the nominated worksite location are protected, and
- there is no approaching rail traffic between the protection and the nominated worksite location, and
- the track-circuit occupancy device has been activated.

Signallers must not authorise unsignalled movements into the nominated worksite location.

Intermediate sidings

If an intermediate siding is occupied by rail traffic and movements from the siding could enter the nominated worksite location, the points for the siding must be secured by:

- the Protection Officer clipping and locking points, or
- the Signaller applying blocking facilities to points release controls.

If an intermediate siding is unoccupied:

- rail traffic must not be authorised to occupy the siding while this method of protection is in place, and
- protection against movements from the siding is not required.

work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

Temporarily suspending protection

Protection may be temporarily suspended to allow rail traffic movements over the nominated worksite location.

If the protection involves more than one Signaller, each Signaller must:

- agree to temporarily suspending protection, and
- record the temporary suspension of protection on *NRF Protecting using an absolute signal and track-circuit occupancy device* form.

Before temporarily suspending the protection, Signallers must make sure that:

- the Protection Officer's name, the nominated worksite location corresponds with details of the protection to be suspended, and
- the workers and their equipment are clear of the Danger Zone.

Warning

If the nominated worksite location is on more than one line, all workers and their equipment must be clear of the Danger Zone on all lines, before the protection is suspended.

The Protection Officer may ask to re-establish protection, if agreed to by the Signallers and there is no change of:

- the protection arrangements, and
- the nominated worksite location.

Responding to unreliable track-circuit occupancy device

If the track-circuit occupancy device fails, the protecting controlled absolute signals must remain at **STOP** with blocking facilities applied until:

- the Protection Officer:
  - deactivates all track-circuit occupancy devices, and
  - confirms all workers and equipment are clear of the Danger Zone on all lines, and
- the Signaller cancels or ends the protection.

work on track

NWT Protection using controlled absolute signals at STOP in conjunction with a track-circuit occupancy device

Warning

Protection must not be authroised if track-circuit occupancy devices fail during activation.

Ending protection

To end protection, the Protection Officer must tell the Signallers:

- their name, and
- the worksite location, and
- that workers and their equipment are clear of the Danger Zone, and
- that points that were secured are available for use.

The Signallers may end the protection after making sure that:

- the Protection Officer's name, the nominated worksite location corresponds with the protection details, and
- the track is clear.

Keeping records

Signallers and the Protection Officer must record, in permanent form, the protection details.

Related Documents

NPR *Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection*

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Introduction

Protecting using controlled absolute signals at **STOP** in conjunction with an approved track-circuit occupancy device for protection is a method of working in the Danger Zone by excluding rail traffic from a portion of track.

Requesting Protection

If this proposed method requires more than one Signaller to exclude rail traffic from a portion of track, the Protection Officer must speak with each Signaller.

Protection Officer

1. Tell the Signaller:
   - your name, and
   - your contact details, and
   - your Safeworking designation, and
   - the type of work, and
   - the intended duration of the work.
2. Identify the line by name and define the nominated worksite location as being:
   - from one signal to another signal, or
   - from a signal to the end of a terminal line.

   If the nominated worksite location is on more than one line, the Protection Officer must define the nominated worksite location separately for each line.

   Signals used to define the nominated worksite location must be associated with the specified lines and identified by their numbers.
3. Ask the Signaller to protect all routes allowing entry into the nominated worksite location by applying blocking facilities to exclude rail traffic.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Signaller

4. Confirm the protection details including:
    - the Protection Officer's name and contact details, and
    - the type of work, and
    - the duration of work, and
    - the line name, and
    - the nominated worksite location.
5. Use the nominated signals or end of terminal line provided by the Protection Officer to identify the nominated worksite location.
6. Identify if the protection requires more than one Signaller to exclude rail traffic.

Signaller

7. Make sure that for protecting assets and routes allowing entry to the nominated worksite under their control:
    - that blocking facilities have been applied to exclude rail traffic, and
    - that the last rail traffic to enter the nominated worksite location is identified and its location is known, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.
8. Tell the Protection Officer:
    - that blocking facilities have been applied, and
    - that the nominated worksite location is protected, and
    - the identification number of the last rail traffic to enter the nominated worksite location and its last known location, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Protection Officer

9. Confirm with the Signaller:
    - that all routes allowing entry into the nominated worksite location are correctly protected, and
    - the identification number of the last rail traffic to enter the nominated worksite location and its last known location, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.
10. Request permission to activate track-circuit occupancy devices to maintain all protecting signals at **STOP**.
11. Activate all track-circuit occupancy devices.

Authorising protection

Authorising Signaller

1. Once the Protection Officer has confirmed the assurances permit the Protection Officer to activate track-circuit occupancy devices.
2. Confirm with the Protection Officer that the track-circuit occupancy devices have been activated.
3. Check that the affected track-circuits are showing occupied, and:
    - confirm with the Protection Officer that the affected track-circuits are showing occupied, and
    - authorise protection.

Protection Officer

4. Before entering the Danger Zone confirm with the Signaller that all affected track-circuits are showing occupied and make sure that the protection is authorised.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Temporarily suspending protection

Protection may be temporarily suspended, if the nominated worksite location is required for rail traffic movements.

If the protection involves more than one Signaller, each Signaller must:

- agree to temporarily suspending protection, and
- record the temporary suspension of protection on *NRF Protecting using an absolute signal and track-circuit occupancy device* form.

Warning

If the nominated worksite location is on more than one line, all workers and their equipment must be clear of the Danger Zone on all lines, before the protection is suspended.

Signallers

1. Before temporarily suspending the protection, confirm with the Protection Officer:
   - their name, and
   - the nominated worksite location.
2. Request PO to deactivate affected track-circuit occupancy devices.

Protection Officer

3. Tell the Signaller:
   - your name, and
   - your nominated worksite location.
4. Before deactivating the affected track-circuit occupancy devices, make sure that:
   - workers and equipment are clear of the Danger Zone on all lines, and
   - it safe to do so, deactivate affected track-circuit occupancy devices.
5. Tell the Signaller:
   - when workers and equipment are clear of the Danger Zone on all lines, and
   - that affected track-circuit occupancy devices have been deactivated.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Signaller

6. Confirm with the Protection Officer that:
    - workers and equipment are clear of the Danger Zone on all lines, and
    - affected track-circuit occupancy devices have been deactivated.
7. Check that the affected track-circuits are showing unoccupied.
8. Suspend Protection.

Re-establishing protection

Protection Officer

1. Ask the Signaller to re-establish protection.
2. Tell the Signaller the nominated worksite location to be re-established.
3. Tell the Signaller there is no change to the nominated worksite location.

Signaller

4. Confirm with the Protection Officer:
    - the request to re-establish protection, and
    - that the nominated worksite location has not changed.
5. Before re-establishing protection make sure that for protecting assets and routes allowing entry to the nominated worksite under their control:
    - that blocking facilities have been applied to exclude rail traffic from the nominated worksite location, and
    - that the last rail traffic to enter the nominated worksite location is identified and its location is known, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

6. Tell the Protection Officer:
    - that blocking facilities have been applied, and
    - that the nominated worksite location is protected, and
    - the identification number of the last rail traffic to enter the nominated worksite location and its last known location, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.

Protection Officer

7. Confirm with the Signaller:
    - that all routes allowing entry into the nominated worksite location are correctly protected, and
    - the identification number of the last rail traffic to enter the nominated worksite location and its last known location, and
    - that there is no approaching rail traffic between protection and the nominated worksite location.
8. Request permission to activate track-circuit occupancy devices to maintain all protecting signals at **STOP.**
9. Activate all track-circuit occupancy devices.

Signaller

10. Once the Protection Officer has confirmed the assurances, permit the Officer to activate track-circuit occupancy devices.
11. Confirm with the Protection Officer that the track-circuit occupancy devices have been activated.
12. Check that the affected track-circuits are showing occupied, and:
    - confirm with the Protection Officer that the affected track-circuits are showing occupied, and
    - authorise protection.

Protection Officer

13. Before entering the Danger Zone, confirm with the Signaller that all affected track-circuits are showing occupied and make sure that the protection is authorised.

procedures

NPR Protecting using controlled absolute signals at STOP in conjunction with track-circuit occupancy device for protection

Ending Protection

Protection Officer

14. Tell the Signaller:
    - your name, and
    - the nominated worksite location, and
    - that workers and equipment are clear of the Danger Zone, and
    - that, if used, points that were secured are available for use, and
    - that all track-circuit occupancy devices have been deactivated.

Signaller

15. Before ending protection, confirm with the Protection Officer:
    - their name, and
    - the nominated worksite location, and
    - that workers and equipment are clear of the Danger Zone, and
    - that, if used, points that were secured are available for use, and
    - that all track-circuit occupancy devices have been deactivated.

Keeping Records

Signallers and Protection Officers must record, in permanent form, the protection details.

RailSafe

Protection using an absolute signal and track-circuit occupancy device – NRF

1. Request

Protection Officer details

name | contact no. | designation

Type of work: | Planned duration:

2. Worksite Location *(if completing this form for an adjacent line, enter the details of the adjacent line, not the line being worked on)*

On the ____ lines

☐ from ____ Sigs to ____ Sigs terminal line

3. **Protection to be used**

Signal/s at **STOP** with blocking facilities applied | Track-circuit occupancy device | Points secured *(cross out if not applicable)*

Protection is required from other Signallers at location/panel | location/panel

4. **Assurances**

All points of entry into the nominated worksite location are protected and blocking facilities applied ☐

The last rail traffic to pass the protection was ____ rail traffic ID. The last known location of rail traffic is ____ location

There is no approaching rail traffic between protection and worksite ☐

Track-circuit occupancy devices are activated ☐

Affected track-circuits showing occupied ☐

5. **Authorisation**

Authorised by Signaller

name | location/panel | ____ hr | / /

Notes

6 ☐ **Temporarily suspending protection**

PO name	PO name	PO name
Confirm worksite location ☐	Confirm worksite location ☐	Confirm worksite location ☐
Confirm workers and equipment are clear of the Danger Zone ☐	Confirm workers and equipment are clear of the Danger Zone ☐	Confirm workers and equipment are clear of the Danger Zone ☐
Confirm track-crcuit occupancy device is deactivated ☐	Confirm track-crcuit occupancy device is deactivated ☐	Confirm track-crcuit occupancy device is deactivated ☐
Protection suspended at ____ hr	Protection suspended at ____ hr	Protection suspended at ____ hr

7 ☐ **Re-establish protection assurances**

Confirm worksite location is identical ☐	Confirm worksite location is identical ☐	Confirm worksite location is identical ☐
All points of entry into affected portion of track are protected and blocking facilities applied ☐	All points of entry into affected portion of track are protected and blocking facilities applied ☐	All points of entry into affected portion of track are protected and blocking facilities applied ☐
The last rail traffic to pass the protection was ____ rail traffic ID	The last rail traffic to pass the protection was ____ rail traffic ID	The last rail traffic to pass the protection was ____ rail traffic ID
The last known location of rail traffic is ____ location	The last known location of rail traffic is ____ location	The last known location of rail traffic is ____ location
There is no approaching rail traffic between protection and worksite ☐	There is no approaching rail traffic between protection and worksite ☐	There is no approaching rail traffic between protection and worksite ☐
Track-circuit occupancy devices are activated ☐	Track-circuit occupancy devices are activated ☐	Track-circuit occupancy devices are activated ☐
Affected track-circuits showing occupied ☐	Affected track-circuits showing occupied ☐	Affected track-circuits showing occupied ☐
Protection re-established at ____ hr	Protection re-established at ____ hr	Protection re-established at ____ hr

8. **Ending**

PO name | Confirm worksite location ☐ | Confirm workers and equipment are clear of the Danger Zone ☐

Confirm track-crcuit occupancy device is deactivated ☐ | Ended at ____ hr / /

SYDNEY, 07 AUGUST 2025 **DIRECTOR NETWORK STANDARDS, SYSTEMS & QUALITY SYDNEY TRAINS**

Returned to Controlling Manager: Date: ..... Signed: .....

(Cut along this line and forward the detached receipt to your Controlling Manager)

To Controlling Manager: Date: ..... Signed: .....

Received SAFE Notice No. 286 – 2025 Date: ..... Signed: .....

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