Enforceable Voluntary Undertaking

Made pursuant to Division 6, Section 251 of the Rail Safety National Law.

The commitments in this Enforceable Voluntary Undertaking are offered to the Office of the National Rail Safety Regulator by Arc Infrastructure Pty Ltd (ABN 42 094 721 301)

22 June 2022

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1 Introduction

(a) Arc Infrastructure Pty Ltd (**Arc**) holds accreditation as a rail infrastructure manager (**RIM**) in accordance with the Rail Safety National Law (Western Australia) (**RSNL**).

(b) As a RIM, Arc is the manager of Western Australia's rail freight network, a railway that stretches approximately 5,100 kilometres across the south-west of the state.

(c) Arc employs over 400 employees, as well as a significant team of contractors, in order to run a safe, reliable and efficient rail network.

(d) Arc's responsibilities include providing network access to train operators, the management of train operations and the ongoing maintenance of the network.

(e) Arc is committed to working with the rail industry, its customers, partners and communities to find new opportunities that will support and strengthen the safe operation of the rail network and the benefits it delivers to Western Australia.

2 Purpose

(a) The purpose of this Enforceable Voluntary Undertaking (**EVU**) is to document Arc's proposed undertakings in accordance with section 251 of the RSNL in connection with an incident that occurred at Jumperkine, Avon Valley, Western Australia on 24 December 2019 (**Incident**), to demonstrate that Arc is committed to addressing factors that could be considered to be causal or contributory to the Incident.

(b) The commitments within this EVU are offered to the Office of the National Rail Safety Regulator (**ONRSR**) as an alternative to the conduct of litigation associated with prosecution.

(c) The proposal is submitted in acknowledgement of the seriousness of the Incident. Arc has always prided itself on the highest standards of safety, and will continue its commitment to those standards in the future. To that end, Arc will continue to make it its priority to work with both ONRSR and the industry to ensure that key learnings are identified and shared openly.

(d) The offering of this EVU does not constitute an admission of guilt in respect of the alleged contraventions of the RSNL to which this EVU relates.

(e) As such, without making any admissions as to liability, Arc commits to the undertakings set out herein to address certain matters raised by ONRSR, including matters raised in the Prosecution Notice. These undertakings have been developed to address Arc's alleged role in the Incident and to ensure that sound, safety focused decision making continues to occur, and that the procedures, training and structures put in place ensure that decision making is strengthened even further.

(f) Arc's undertakings are set out in Appendix 1.

3 Details of alleged contravention

(a) ONRSR has undertaken a compliance investigation into the Incident.

(b) Arc has cooperated fully with the ONRSR investigation of the Incident.

(c) ONRSR has formed a view that Arc has contravened the following sections of the RSNL in relation to the Incident:

(1) Section 59; and

(2) Section 60.

4 Background

4.1 Incident Overview

(a) At approximately 0200 hours on 24 December 2019, Pacific National service 7MP5 passed 12LA signal at danger and subsequently collided with the rear of stationary Watco service 2K66. The location of the incident was kilometre 41, Up Main Line, Jumperkine Station, Eastern Goldfields Railway Line, Avon Valley.

(b) Following the collision, and after unsuccessfully trying to contact the driver of service 7MP5 and the Pacific National Network Operations Centre, Network Control requested the driver of service 3PM4, who was approaching in the opposite direction, to proceed and attempt to get the attention of the driver of service 7MP5 when he passed.

(c) At the time of the Incident, Arc had the management and control of the railway and was an accredited RIM for the purposes of the RSNL as it applies in the State of Western Australia.

4.2 Incident Response and Continual Improvement

Safety remains at the highest priority for Arc. Arc is committed to the ongoing safety of its people, customers and the community in and around its rail network.

Following the Incident, Arc undertook the following actions:

(a) immediately engaged the Crisis Management Team to respond to and manage the Incident;

(b) informed the Board of the Incident and provided it with regular updates;

(c) commenced an Incident Cause Analysis Method investigation into the Incident undertaken by an independent third party (Safety Wise Solutions Pty Ltd);

(d) introduced Work Directive for Rail Traffic working in the Avon Valley (NC-WD-EAS-004) in February 2020. The directive was introduced in an effort to introduce further mitigating controls in the event of a Signal Passed at Danger (**SPAD**) in the location of the Avon Valley by establishing a greater degree of

separation between a train that has passed its limit of authority and the stopped train ahead;

(e) developed an emergency response checklist for use by Network Control;

(f) issued safety directive document ID W103 200 024 Rev 1.0 in relation to Network Safeworking Rules and Procedures Rule 6001, and the responsibilities of rail traffic crew and Network Controllers in the event of an overrun of authority. This directive was subsequently withdrawn following the formal amendment of Rule 6001 as detailed in undertaking 1 of Appendix 1;

(g) established the Zero Collisions strategic project. The objective of the project is to promote and develop initiatives to ensure the necessary segregation between rail traffic. The project considers the potential impact on rail traffic segregation of driver behaviour, network controller decisions, communications, signalling, training, work environment and the like. Through an improved understanding of the underlying data and causal factors that contribute to overruns of authority, the project is ultimately seeking to ensure continued safeworking on the Arc network;

(h) established a SPAD Working Group comprising senior representatives from Arc and above rail operators (**AROs**). One of the actions of the Working Group was to undertake a series of risk assessments focused on driver only operations, long end leading operations and two driver operations; and

(i) introduced SPAD Awareness Week in November 2021, in partnership with AROs, for the purpose of raising awareness of and to reduce the number of SPADs that occur on the network and across the industry.

5 Undertakings

5.1 **Overview**

(a) The undertakings set out in this EVU have been developed in consultation with the Arc Executive Team and company Board, Health Safety and Environment Committee, Zero Collisions Project Team, Network Rules Committee and SPAD Working Group. Collectively, these groups comprise senior management and subject matter experts, both from across the Arc organisation and that of the AROs that operate services on the Arc network.

(b) The undertakings documented within this EVU have been developed with a specific focus on four key areas:

(1) Arc's Network Safeworking Rules;

(2) Training and Competence;

(3) Situational Awareness; and

(4) Industry Collaboration.

(c) As further set out in Appendix 1, several of the undertakings included in this EVU have already been completed and, by 30 June 2023, the balance of the undertakings will have been delivered.

(d) Arc is confident that the achievement of these objectives will provide confidence to Arc, ONRSR and users of the Arc network that issues identified under the alleged contraventions of RSNL have been adequately addressed.

5.2 Undertakings

The undertakings to be provided by Arc are detailed in Appendix 1 of this EVU.

5.3 EVU Governance

(a) This EVU comes into operation on the date upon which ONRSR formally accepts it.

(b) Arc's delivery of the EVU will be managed as a core component of its Zero Collisions project mentioned above. The project is lead by Arc's Head of Operations and Customer Management, sponsored by a representative of the Arc Executive Team and ultimately reports to the CEO.

(c) Progress against project deliverables for the Zero Collisions project, including the undertakings set out in this EVU, will also be governed by Arc's Health, Safety and Environment Committee, chaired by the CEO and including all Arc executives on the Committee, and will be reported to the Board.

(d) Arc is committed to providing ONRSR with updates on the performance of this EVU and will report against its progress on matters set out in this EVU to ONRSR on an agreed basis.

(e) Arc will provide suitable evidence to ONRSR to confirm completion of defined activities set out in the undertakings.

(f) Arc will discuss with ONRSR an appropriate means to confirm the closure of the undertakings contained in this EVU. Arc will ensure that all resource costs associated with this EVU will be appropriately tracked.

(g) A final report to close out this EVU will be provided by Arc to ONRSR within 3 months of the date of the final milestone of this EVU.

5.4 Cost of EVU implementation

The approximate cost of implementing this EVU is summarised in the table below. The costs set out below include both upfront and ongoing costs (over a 5 year period) and are fully budgeted.

Undertaking	Cost
1. The amendment of existing Rule 6001 (Overrun Limit of Authority) – emergency response	$15,000
2. Introduction of Training Course TLIF0008 'Apply Safety Critical Communications in a Rail Environment'	$630,000
3. Introduction of a SPAD specific audible alarm	$50,000
4. The amendment of existing Rule 6001 (Overrun Limit of Authority) – at risk	$15,000

5. Develop a dedicated simulation training centre	$650,000	
6. Appointment of a dedicated fulltime Network Control Technical Trainer and Assessor	$750,000	
7. Establishment of SPAD Working Group	$105,000	
Total EVU Cost	**$2,215,000**	

Appendix 1 – Undertakings

	Objective	Undertaking	Delivery Method	Completion Date
1.	Network Controller is required to declare an emergency situation where rail traffic has exceeded its limit of authority.	Arc will, by the completion date, amend existing Rule 6001 (Overrun of Limit of Authority) and provide ongoing training to its Network Controllers to mandate that where rail traffic has exceeded its limit of authority, an emergency situation is to be declared.	**Action** In February 2020 Arc amended Rule 6001 (Overrun of Limit of Authority). Section 3 of Rule 6001 was amended to require that Network Controllers are to make an emergency radio call in circumstances where a train has overrun its limit of authority. **Associated Training** The change to rule 6001 was communicated to existing safeworkers (e.g. Network Controllers, RRV operators, RTC etc.) via safety directive, and moving forward will form part of the Network Rules training for all safeworking personnel. **Safety Outcome** The change to rule 6001 has the effect of requiring the Network Controller to make an emergency radio call where other rail traffic or track workers may be in conflict with the rail traffic that has exceeded its limit of authority. In the event rail traffic crew fail to make an emergency call in relation to an actual or predicted overrun of limit of authority, the Network Controller is	February 2020

			required to make an emergency call, ensuring that other rail traffic or track workers in conflict or at risk are alerted as soon as possible.	
2.	Network Controller is required to make an emergency radio call to all rail traffic on the rail corridor following the declaration of an emergency situation where rail traffic has exceeded its limit of authority.	Arc will, by the completion date, introduce training course TLIF0008 'Apply Safety Critical Communications in a Rail Environment' to mandate that where rail traffic has exceeded its limit of authority and following declaration of an emergency situation, the Network Controller must make an emergency radio call to all rail traffic on the rail corridor.	**Action** Training Course TLIF0008 'Apply Safety Critical Communications in a Rail Environment' was introduced by Arc on 21 August 2020. The TLIF0008 training includes a requirement on Network Controllers to make an emergency radio call to all rail traffic on the rail corridor following the declaration of an emergency situation where rail traffic has exceeded its limit of authority. **Training** Upon its introduction, the TLIF0008 training was delivered to, and completed by, all Arc Network Controllers by 21 August 2020. Moving forward, all new Arc Network Controllers receive TLIF0008 training as part of their initial training. On 9 September 2020 Arc extended the delivery of this training to Arc Protection Officer track access permit (**TAP**) holders. Train the trainer sessions were completed with AROs by 28 August 2020 with all relevant training material provided to the AROs. Critical Communications Training and related refresher training is linked to a TAP. When safeworking refresher training is undertaken in accordance with TAP requirements, Critical Communications knowledge is also assessed (currently every 2 years).	21 August 2020

		Safety Outcome The introduction of TLIF0008 training ensures that a Network Controller is required to make an emergency radio call to all rail traffic on the rail corridor following the declaration of an emergency situation where rail traffic has exceeded its limit of authority. More broadly, TLIF0008 training is designed to ensure clearer communications in the event of an emergency for all network users and therefore increase overall network safety. This training is delivered to Network Controllers, Arc field personnel and is provided to all persons responsible for safe working on the rail network.	

3.	Improve SPAD notification systems	Arc will, by the completion date, introduce a SPAD specific audible alarm within its train control system.	**Action** Arc is working with Hitachi (the owner of Arc's Phoenix train control system) to install a SPAD specific audible alarm within Arc's train control system. This SPAD specific alarm will differentiate SPADs from other TCS alerts. A SPAD specific alarm is also included in the design for Arc's new train control system (STC) to be delivered in Q2 2023, ensuring this functionality will be maintained moving forward. **Training** Upon installation of the SPAD specific audible alarm, Arc's Network Controllers will be provided with a safety alert detailing the changes made to the Phoenix TCS for notification and discussion purposes. **Safety Outcome** The installation of a SPAD specific audible alarm will assist in alerting the Network Controller of a SPAD event. Arc also intends to share the details of this change with other RIMs who, like Arc, have not previously had a SPAD specific alarm installed within their train control system.	September 2022

| 4. | Improve Arc's systems and procedures in relation to determining whether other rail traffic is considered to be "at risk" in relation to Rule 6001 (Overrun of Limit of Authority). | Arc will, by the completion date, amend existing Rule 6001 (Overrun of Limit of Authority) to remove ambiguity around determining whether other rail traffic is considered to be "at risk", and will provide ongoing training to its Network Controllers in respect of the updated Rule. | **Action**

Arc proposes to review and update Rule 6001 (Overrun of Limit of Authority).

In the event of rail traffic overrunning its limit of authority, section 3.2 of Rule 6001 requires the Network Controller to arrange to stop other rail traffic movements that could be "at risk".

Arc proposes to update Rule 6001 to remove the requirement placed upon the Network Controller to make the subjective determination of whether or not rail traffic is "at risk".

The change to the rule will require the Network Controller to advise all rail traffic at, or approaching, the location of the overrun event to stop immediately.

Training

The change to Rule 6001 will be communicated to existing safeworkers (e.g. Network Controllers, RRV operators, RTC etc.) via safety directive, and thereafter will form part of the Network Rules training for all safeworking personnel.

Safety Outcome

The change to Rule 6001 has the effect of removing the requirement on the Network Controller to make an assessment as to whether or not other rail traffic would be considered to be "at risk".

In the event a train has overrun its authority, all rail traffic at, or approaching, the location of the overrun event will be required | September 2022 |

			to stop immediately preventing other rail traffic from encountering potential risks arising from the overrun event.	

| 5. | Improve Arc's training systems and procedures with respect to Arc's Rule 6001 (Overrun of Limit of Authority) | Arc will, by the completion date, develop a dedicated training facility allowing for rail safety simulation/scenario based training and assessment. | **Action**

Upon the introduction of the STC system to replace Phoenix and TOS train control systems, Arc intends to develop a dedicated training facility located at Canning Vale, Western Australia. The facility will allow Arc Network Controllers to undertake simulation or scenario based training and assessment, including emergency incident response training and assessment.

Training

All Arc Network Controllers will be required to undertake a minimum of one day of simulation based training each year. Arc is committed to resourcing its Network Controller pool at a level that facilitates the release of Controllers from the roster to undertake this ongoing training.

Safety Outcome

With respect to Rule 6001 and Arc's systems and procedures more generally, the introduction of simulation training, will assist in demonstrating the Network Controller's understanding of relevant systems and procedures, and that the Network Controller could competently apply such systems and procedures to particular scenarios (including emergency incident response). | June 2023 |

| 6. | Network Controller Training and Assessment | Arc will, by the completion date, appoint a dedicated, full-time Network Control Technical Trainer and Assessor. | **Action**

On 4 January 2022, Arc appointed a Network Control Technical Trainer and Assessor, who's role is to provide quality, relevant, and practical training that provides and maintains the required level of qualification and competence for Arc's Network Controllers.

The key duties for the Network Control Technical Trainer and Assessor are:

• Maintain the Arc Network Safeworking Rules and Procedures training and assessment content for Network Controllers;

• Delivery of training for Network Safeworking Rules and Procedures, Safety Critical Communications and other modules as required;

• Conduct all Network Controller assessments and clear Network Controllers onto relevant control boards;

• Work with Arc's broader training team to review and develop Network Controller training competencies;

• Deliver on the job assessments to verify competency in the role of Network Controller, including in the area of Safety Critical Communications;

• Maintain accurate records of attendance and assessment;

• In line with the development of the Canning Vale training facility (see item 5 above), develop and conduct simulation training on current and new Network | 4 January 2022 |

		Controllers to verify and maintain competency in the role of Network Controller. **Safety Outcome** The creation of this role is critical to support the improvements that Arc is making to the training program for its Network Controllers (as set out in items 1 to 5 above), and our broader focus on ensuring that our people are well trained and competent. The Technical Trainer and Assessor will be supported by our learning and development team to ensure that all training attendance and assessment is recorded in our Student Management System and Learning Management System. This will provide increased visibility of reassessment dates for ongoing desk based and simulation training.	

| 7. | Industry Collaboration | Arc will, by the completion date, establish a SPAD Working Group. | **Action**

In November 2020, Arc established a SPAD Working Group as a sub-group within the previously established Above Rail Operator Forum. The Working Group comprises senior operational representatives from Arc and each of the AROs that operate on the Arc network.

The purpose of the SPAD Working Group is to establish a collaborative forum between Arc and ARO's to:
• understand the underlying factors that may contribute to a limit of authority breach, potentially including train driver operating model (i.e. single or two driver operation), fatigue related to time of day or shift length, signal or other asset failure, location and so on;
• investigate causes and risk areas associated with breaches of limits of authority; and
• identify appropriate mitigations.

Safety Outcome

One of the first actions of the Working Group was to undertake a series of risk assessments focused on driver only operations, long end leading operations and two driver operations.

The Working Group was also responsible for developing SPAD Awareness Week.

Moving forward, the Working Group will provide a forum for ongoing engagement between industry members on initiatives to reduce the occurrence of SPADs on the network and to share key learnings across industry.

As part of SPAD Awareness Week 2022, Arc intends to invite members of the SPAD Working Group and other RIMs to | November 2020 |

| | | | participate in a training forum during which participants will be invited to share details any improvements they are making to Network Controller and Rail Traffic Crew training, with a specific focus on SPAD prevention. | |