Engineering Manual

General

CRN GM 006

ENGINEERING WAIVERS

Version 1.1

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Approved by:	Committee of Principal Engineers
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Document control

Revision	Date of Approval	Summary of change
1.0	November, 2012	First Issue
1.1	October, 2015	See Summary of changes below

Summary of changes from previous version

Section	Summary of change
5.1	Included of reference to “Concessions”; Included reference to discipline standards for waivers
6	Corrected reference errors

Contents

1 Introduction

CRN engineering standards include mandatory requirements. Likewise CRN's Train Operating Conditions (TOC) Manual includes approved locomotive and vehicle operations on the Country Regional Network (CRN). Deviation from a standard requirement detailed in these documents is only permitted with the written waiver authorisation from the relevant Principal Engineer.

In the first instance every effort should be made to comply with the engineering standards. A waiver is a last resort when compliance to the standards is not possible or unrealistic to achieve.

2 Purpose

This manual sets out the requirements for the requisition, assessment and authorisation of engineering standards waivers to CRN engineering standards. It applies to all engineering disciplines. It also establishes similar requirements for TOC waivers for the variation of train operating conditions.

This procedure applies to designers, constructors and maintainers of CRN assets, operators of rolling stock who request access to CRN tracks and to CRN staff involved in assessing waiver requests.

The purpose of this manual is to specify:

- minimum information to be supplied in a request for a waiver
- factors to be taken into account by the Principal Engineers when assessing a waiver request
- the form of advice returned to the requestor
- the requirements for record keeping.

3 References

3.1 Australian and International Standards

Nil

3.2 CRN documents

CRN GM 001 - Engineering Standards System Manual

3.3 Other documents

Nil

4 Terms and definitions

ALARP	as low as reasonably practical
Authorising officer	the JHR CRN Principal Engineer or delegate authorising or rejecting a waiver request
Assessor	a JHR CRN person with engineering authority who is responsible for evaluating and making recommendations on the waiver request

Principal Engineer	person recognised as having responsibility for assuring technical integrity of a particular class of assets (e.g. Principal Civil Engineer being responsible for assuring technical integrity of civil infrastructure) (from CRN Engineering Manual CRN GM 001*)*
Engineering authority	the authority to make and approve engineering decisions
Engineering standards	the types of engineering technical documents listed in CRN GM 001
Engineering standards waiver	a written authority issued by a Principal Engineer or an authorised representative that allows a particular design, operation or asset condition to deviate from a JHR CRN engineering standard subject to given conditions. Waivers may be temporary or permanent.
Requestor	a person who identifies an existing or proposed item that does not or will not comply with CRN engineering standards, Train Operating Conditions or standard designs

5 Requirements

5.1 General

Engineering Waivers may be:

Temporary –permits non-compliance of an asset, process, operation or vehicle with the requirements of a specified CRN Engineering standard for a specified time period.

Permanent (also known as a **Concession**)- permits non-compliance of an asset or vehicle with the requirements of a specified CRN Engineering standard for the life of that asset or vehicle.

Waivers, whether temporary or permanent, must meet the following criteria:.

1. The granting of the waiver does not adversely impact on the JHR CRN risk profile. In this respect a risk assessment of the waiver is to be undertaken and any required controls for treatment of the risk are to be implemented as conditions for granting of the waiver.
2. An expiry date is specified for temporary waivers.
3. When a permanent waiver is approved, this shall be clearly identified on the published approval
4. The responsibility for implementing the conditions of a waiver is clearly specified. This includes the responsibility of assuring compliance on expiration of the specified time period of a waiver.
5. A register of waivers is maintained by the Principal Engineers.
6. Where considered necessary by a Principal Engineer a separate register of Permanent Engineering Waivers may by maintained and published.

The detailed processes for engineering standards waivers are specified within the engineering standards documents of each discipline area.

The discipline specific processes are:

Rolling Stock	CRN RM 003 “Train Operating Conditions Waiver Process”
Signallling	CRN SP 049 “Signal Engineering Waivers”
Civil	CRN CM 002 “Engineering Waivers”

The specific discipline process must meet the following requirements.

5.2 Process

The process for a waiver request generally follows the path in Figure 1.

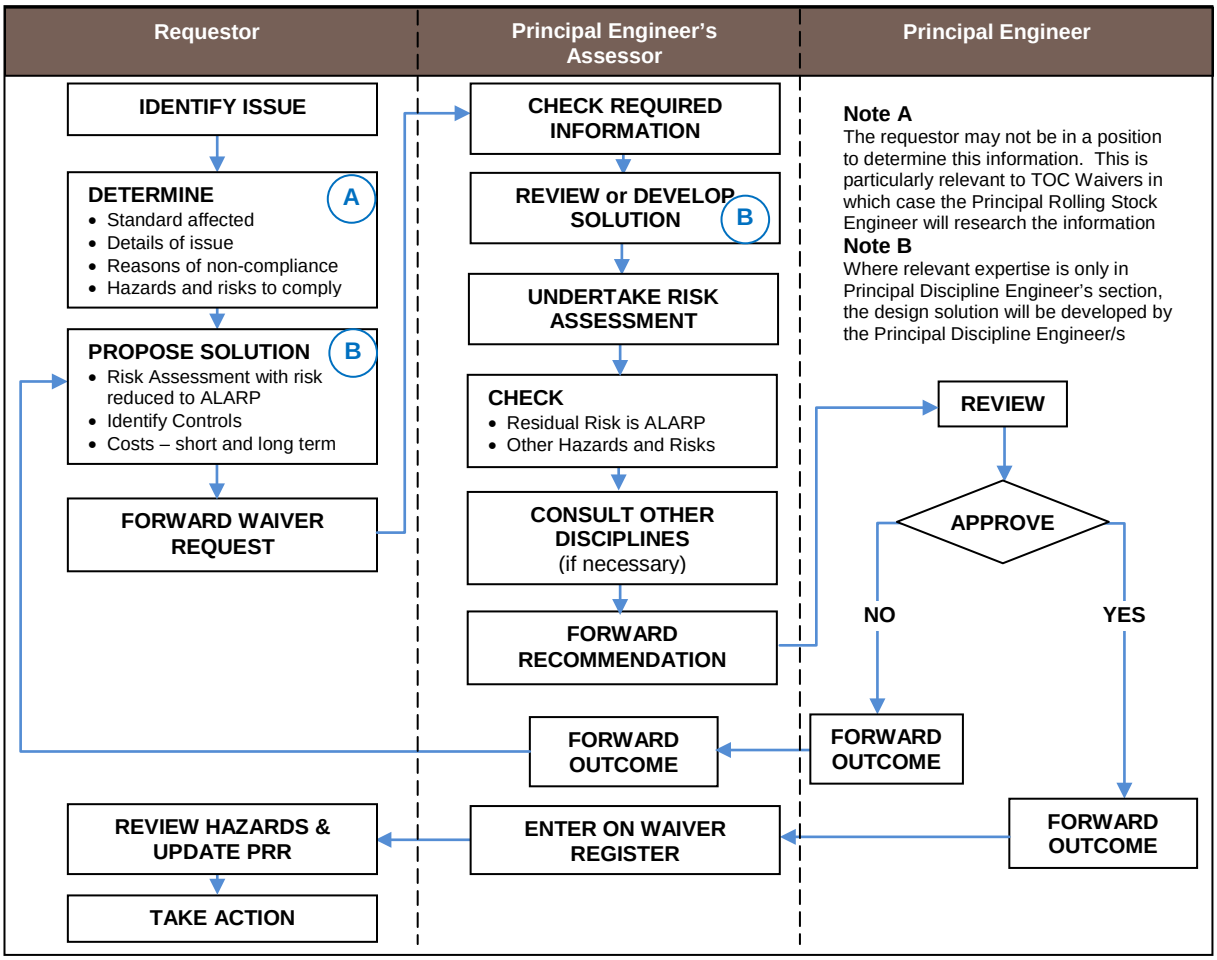

Figure 1 – Typical path of Waiver request

5.3 Waiver request

Waivers requests are submitted to the appropriate discipline head or delegate. The type of information required is listed below:

- Location – could be a specific site, track section, line or all or the CRN
- Requestor details – name, contact etc.
- Discipline
- Waiver request details – CRN standard , including Section or clause
- Waiver type requested – permanent or temporary (including start and end dates)
- Details of the situation - Background and nature of the proposed non-conformance, Specific requirements in the standard that cannot be met, Reasons that the relevant standard cannot be met, such as practicality, access, timing.
- Cost implications (short, medium and long term) to JHR CRN due to non-compliance including ongoing maintenance
- Proposed alternative / solution

- Risk assessment — including Hazards, Risk controls to bring risk level to ALARP, Factors which bear on the risk both positive and negative, Non-risk related implications of the non-compliance that may affect reliability, maintenance requirements, durability, track access etc.
- Other information - include competencies or engineering authorities for any relevant technical assessments provided in the waiver application.

The requestor shall provide as a minimum sufficient detail to enable the reviewer to understand the circumstances of the request and the implications of the non-conformance. Waivers which do not provide sufficient information may be rejected.

Any technical aspects of the waiver submission shall be developed by a person with the relevant technical competence or engineering authority in the case of an engineering design.

Further information may be requested by the assessor.

5.4 Principal Engineer response

Each discipline shall maintain a standards waiver register. Upon receiving a formal waiver request, it shall be responded to within a reasonable time.

The assessor shall consider the proposed risk controls and cost implications of non-compliance and consult other JHR CRN authorities as necessary when determining the waiver application.

The outcome of the assessment of the waiver request shall be formally advised to the requestor. A waiver approval shall include information defining what has been approved including any relevant controls required. Other affected parties shall also be advised.

Further information may also be provided to the requester as to the reasons for the waiver rejection. Alternatively the assessor may request amendments to the waiver or further information during the waiver review process.

If approved, a Waiver Approval Notice will be issued. It will contain the following information:

- Registry Number (Supplied by discipline head office)
- Variation: (Title of Proposed Waiver / Variation)
- Relevant standard: (Number of standard against which a waiver is sought)
- Clause or section: (Relevant clause(s) or section(s) of above standard)
- Use approved for: (Name of Company, Division, Section or External party seeking waiver)
- District: (Area in which waiver will apply)
- Discipline (Civil, Signals or Rolling Stock)
- Location - Geographical location and/or JHR CRN location reference where the waiver is to apply
- Start Date
- Permanent (Yes or No - if Temporary include End Date.)
- Variation Details (Details of waiver sought)
- Controls - Controls to be put in place to address risks normally controlled by the standard and by whom
- Attachments if required

5.5 Records

Principal Engineers shall maintain records of all approved waivers. The record needs to contain copies of the request, assessment, risk assessment, determination, issued waiver, any supporting documentation and communication regarding the waiver.

Records may be electronic.

5.6 Review of waivers

A regular review of waivers (at least annually) by each discipline should incorporate:

- a review of all current waivers to determine status and risk including consideration of required changes to controls or rebuilding of assets where risks are unacceptable.
- withdrawal of all waivers no longer required.

6 Cross discipline waivers

There are situations where a waiver is proposed that affects more than one of the engineering disciplines. This occurs when interfaces between the disciplines are involved. Current recognised interfaces are detailed in Appendix 1.

Where a waiver is proposed involving an interface, it is the responsibility of the Principal Discipline Engineer who is nominated as the Lead Discipline in Appendix 1 to co-ordinate the responses from the other disciplines involved and maintain the complete waiver record (including the approvals/rejections from the other disciplines). In addition each Principal Discipline Engineer will maintain a detailed record of their investigation and response to the Lead Discipline Engineer.

Appendix 1 Interfaces

Requirement	Ref Standard	Interface	Lead Standard	Lead discipline	Remarks
Rolling Stock Outline Requirements					
Standard Rolling Stock Outlines	CRN RS 008 TOC Manual	Authorised outlines	CRN CS 215	PCE	Not to be altered without PCE approval
	CRN RS 006	Allowable infringements for rubber tyres on road/rail vehicles	CRN CS 215	PCE	Not to be altered without PCE approval
Special Load Outline Conditions	CRN RS 008	Vehicles that exceed the rolling stock outlines for a particular route may be permitted to travel under special conditions	CRN CS 215	PCE	Not to be altered without PCE approval
Rolling Stock and Loading Infringements	CRN RS 008	Approval requirements	CRN CS 215	PCE	Not to be altered without PCE approval
Platform clearances	CRN RS 008	Refer CRN CS 215	CRN CS 215	PCE	Not to be altered without PCE approval
Track and axle load limit requirements					
Axle Load Limits	CRN RS 008	Wheel and axle loading and axle spacing limits	CRN CS 200	PRSE	Current limits meet CRN Track requirements - Not to be altered without PCE approval
P/D ratio	CRN RS 008	Maximum allowable P/D ratios for operation	CRN RS 008	PRSE	Current P/D ratio limits meet CRN Track requirements - Not to be altered without PCE approval
P2 force	CRN RS 008	P2 force limits	CRN RS 008	PRSE	Current limits meet CRN Track requirements - Not to be altered without PCE approval
Vehicle test requirements - Track related					
Twist test requirements	CRN RS 008	Twist replicates track condition	CRN CM 203	PRSE	To be worse than E1 Base Operating Condition - Not to be altered without PCE approval
Vehicle/bogie operating clearance requirements	CRN RS 008	Curve radius 70m test – actual minimum in service 100m – 90m in yards but not an issue	CRN CS 210	PRSE	Expected curve radius in CRN Not to be altered without PCE approval

Requirement	Ref Standard	Interface	Lead Standard	Lead discipline	Remarks
Vehicle/vehicle operating clearance requirements	CRN RS 008	100m radius curve, 120m reverse curve without transition 300m radius vertical curve (convex and concave)	CRN CS 210	PRSE	Expected curve radius in CRN - Not to be altered without PCE approval
Vehicle body roll and lateral displacement limit requirements	CRN RS 008	superelevation applied to the vehicle represents a cant deficiency of 160 mm or a lateral acceleration of 0.1g acting on the vehicle at its centre of gravity.	CRN CS 210	PRSE	Design Cant deficiency to match expected CRN requirements - Not to be altered without PCE approval
Ride Performance Requirements	CRN RS 008	Base ride performance requirements The pitch and bounce performance requirements	CRN CS 215	PRSE	Transit Space allowances - Not to be altered without PCE approval
Traction performance requirements	CRN RS 008	Traction performance acceptance criteria		PRSE	Traction effects on rails - Not to be altered without PCE approval
Vehicle curve stability requirements	CRN RS 008 CRNRS 010	Curve stability tests		PRSE	
Wheel profiles	CRN RS 008		CRN CS 220	PRSE	Current profiles match design rail profiles - Not to be altered without PCE approval
Vehicle test requirements - Signals related					
Signal visibility requirements	CRN RS 008	direct line of sight to dwarf or ground signalling equipment and high or gantry signalling equipment		PRSE	Not to be altered without PSE approval
Train Detection	CRN RS 008	See CRN SD 026		PSE	
Signal interference	CRN RS 008	See CRN SD 026		PSE	
Train braking requirements	CRN RS 008	See CRN SD 026 Use of advisory speed signs for train braking within the required signal spacing.		PSE	
Interference tests	CRN RS 008	See CRN SD 026		PSE	