

Rail Safety Worker Competency Assessment for Signalling Contractors Staff




Engineering Instruction

Rail Commissioner

SG4-DOC-002026

DOCUMENT CONTROL

Document Status

DOCUMENT OWNER: UNIT MANAGER, SIGNAL AND CONTROL SYSTEM ENGINEERING			
Action	Name and Position	Signature	Date
Prepared By:	Name: Gary Penfold Title: Principal Signal Engineer		26/10/2018
Reviewed By:	Name: Nilesh Patel Title: Senior Signal Engineer		12/11/2018
Approved By:	Name: Mayank Jain Title: Unit Manager, Signal and Control System Engineering		19/11/2018
Document Review Schedule:		This document is due for review as required	

Document Amendment Record

REVISION	CHANGE DESCRIPTION	DATE	PREPARED	REVIEWED	APPROVED
1	First release	October 2018	G. Penfold	N. Patel	M. Jain

TABLE OF CONTENTS

1. Introduction	4
2. Purpose.....	4
3. Scope	4
3.1. Rail Safety Worker and Competency – Statement of Competency	4
3.2. Evidence.....	5
4. Related Documents	5
5. References.....	5
6. Acronyms	5
7. Definitions	5
8. Role Classifications - Design.....	6
8.1. Design, Check and Review	6
8.1.1. Minimum Competency Requirements	6
8.1.2. Underpinning Knowledge	6
9. Role Classifications - Construction	7
9.1. Installation, Construction and Inspection.....	7
9.1.1. Minimum Competency Requirements	7
9.1.2. Underpinning Knowledge	7
10. Role Classifications - Testing.....	8
10.1. Testing, Inspection and Commissioning.....	8
10.1.1. Minimum competency Requirements.....	8
10.1.2. Underpinning Knowledge	8
11. Assessment.....	9
11.1. Assessor.....	9
11.2. Approver.....	9
APPENDIX A Employment Record	10
APPENDIX B Work Experience	11
APPENDIX C Education and Qualifications	12

1. Introduction

Department of Planning, Transport and Infrastructure [DPTI] recognises together with the Rail Commissioner [RCom] that there is a need to ensure competency for all personnel working with and/or on the Adelaide Metropolitan Passenger Rail Network [AMPRN] signalling assets. It is therefore incumbent on DPTI to make assessment of the competency of any contractor or consultant engaged to work on the AMPRN.

2. Purpose

The criteria to for all contractors and consultants require all individuals to be enrolled as part of the Rail Industry Workers Scheme [RIW].

In certain circumstances where individuals are yet to complete the registration or do not have the relevant local experience, DPTI Signal Engineering may consider competence applications on a case by case basis, dependent on experience and the task to be undertaken.

The intent of this document is to illustrate the procedure for DPTI Assessment of Signal Engineering Competency for Rail Safety Workers to undertake rail safety work on the AMPRN and should be read in conjunction with PR-AM-GE1170.

This procedure aligns with Rail Safety National Law [South Australia] Act 2012 requirements with respect to undertaking rail safety tasks within the AMPRN. Rail safety work is defined as alterations to rail infrastructure and all works associated with the change. The task definitions are described as the following categories:

- Installation and/or construction
- Repair
- Modification
- Design
- Maintenance
- Monitoring
- Upgrading
- Inspection, and
- Testing and Commissioning

3. Scope

This document prescribes the requirements for the assessment of signalling contractors' competency and applies to all signalling disciplines and all levels of competency within them. All individuals are required to develop and demonstrate achievement of the competencies and proficiency levels to undertake the specified role classification.

3.1. Rail Safety Worker and Competency – Statement of Competency

Each contractor and/or consultant is responsible for maintaining each individual's registration in order that they may work within the AMPRN. The candidate or company representative shall select the role classification within the Online platform, once selected the requirements identified will now appear against the candidate's profile.

The candidate or company representative then downloads the DPTI Statement of Competency [SoC] from the DPTI webpage, Rail Engineering Standards section and, aided by their supervisor/manager, completes a self-assessment for their particular skill set. On completion of the SoC the candidate or company representative shall upload to the Online platform, together with all evidence to satisfy each category selected for assessment.

3.2. Evidence

The candidate shall provide evidence commensurate to the selected role classification. The evidence shall, as a minimum, include the following requirement:

- Employment Record [Appendix A]
- Work Experience Log [Appendix B]
- Education and Qualifications Record [Appendix C]
- Education, Qualification and Industry Membership Certification

4. Related Documents

DOCUMENT NAME	DOCUMENT NUMBER
Assessment of Engineering Competency For Rail Safety Workers	PR-AM-GE-1170
Employment Record (Appendix A)	KNet # 13122637
Work Experience Record (Appendix B)	KNet # 13122638
Work Experience (Appendix B)	KNet # 13122639
Education and Qualifications (Appendix C)	KNet # 13122640
DPTI ConstructionSoC	KNet # 13173056
DPTI Design SoC	KNet # 13173057
DPTI Test SoC	KNet # 13173055

5. References

- *National Rail Safety Law National Regulations 2012*

6. Acronyms

ACRONYM	FULL NAME
TIC	Tester-In-Charge
SoC	Statement of Competency
AMPRN	Adelaide Metropolitan Passenger Rail Network
DPTI	Department of Planning, Transport and Infrastructure
RSW	Rail Safety Worker

7. Definitions

TERM	DEFINITION
AD	Assistant Designer
D	Designer
C/R	Checker/Independent Reviewer
CA	Construction/Installation Assistant
CE	Construction/Installation Engineer
CS	Construction Lead/Supervisor/Manager
AT	Assistant Tester
T	Tester
ST	TIC, Principles Tester, Function Tester

8. Role Classifications - Design

8.1. Design, Check and Review

Persons undertaking the following design elements shall adhere to the competency requirements in the realms of Design, Check, Verify and Approval for:

- Interlocking Circuits;
- Data;
- Lineside Circuits;
- Mechanical Layouts;
- Power Supply Systems [including calculations];
- Interface Systems;
- Communications;
- Principles; Knowledge; Domain; Product; Information; Communication

8.1.1. Minimum Competency Requirements

The aim is to structure an inclusive, open system for anybody with sufficient knowledge and experience to complete work with safeguards to protect against the lack of local, domain specific knowledge.

TABLE 1 – SIGNALLING DESIGN COMPETENCY MATRIX

Route/Domain Knowledge		Underpinning Knowledge											
		0			1			2			3		
		AD	D	C/R	AD	D	C/R	AD	D	C/R	AD	D	C/R
Competency Level	0	✓ #1	✓ #1	x	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2
	1	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2
	2	x	✓ #1	✓ #2	x	✓ #1	✓ #2	x	✓ #1	✓ #3	x	✓	✓ #3
	3	x	x	x	x	x	x	x	✓ #3	✓	x	✓	✓

- 0 - No certified knowledge
1 - Limited understanding (typically < 5 years)
2 - Working (typically 5 to 10 years)
3 - Significant experience (typically > 10 years)
#1 - Candidate may conduct design under mentorship, mentor has route/domain knowledge level of 2 or higher.
#2 - Candidate may conduct review if mentor has route/domain knowledge level of 2 or higher.
#3 - Candidate may conduct review if mentor has underpinning knowledge level of 3.

8.1.2. Underpinning Knowledge

The case of signaling competency underpinning knowledge can be defined as understanding, interpreting and applying signalling practices, methods and principles to the select function or role classification.

9. Role Classifications - Construction

9.1. Installation, Construction and Inspection

Persons undertaking the following construction elements shall adhere to the competency requirements in the realms of Installation, Construction and Inspection for:

- Cable Route Installation [Pits & Conduits];
- Equipment Locations [SER, CER, PER, & Locations] Construct, Install & Fit Out;
- Cable Installation;
- Signal Installation [Foundations & Structures];
- Points Machines [Including all associated ancillary connections];
- Power Supply Systems;
- Axle Counter Head;
- Level Crossings [Road & Pedestrian];
- Internal and External Wiring;
- Communications Systems;

9.1.1. Minimum Competency Requirements

The aim is to structure an inclusive, open system for anybody with sufficient knowledge and experience to complete work with safeguards to protect against the lack of local, domain specific knowledge.

TABLE 2 – SIGNALLING INSTALLATION, CONSTRUCTION & INSPECTION COMPETENCY MATRIX

Route/Domain Knowledge		Underpinning Knowledge											
		0			1			2			3		
		CA	CE	CS	CA	CE	CS	CA	CE	CS	CA	CE	CS
Competency Level	0	✓ #1	✓ #1	x	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2
	1	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2
	2	x	✓ #1	✓ #2	x	✓ #1	✓ #2	x	✓ #1	✓ #3	x	✓ #3	✓ #3
	3	x	x	x	x	x	x	x	✓ #3	✓	x	✓	✓

- 0 - No certified knowledge
- 1 - Limited understanding (typically < 5 years)
- 2 - Working (typically 5 to 10 years)
- 3 - Significant experience (typically > 10 years)
- #1 - Candidate may conduct specified task under mentorship, mentor has route/domain knowledge level of 1 or higher.
- #2 - Candidate may conduct specified task if mentor has route/domain knowledge level of 2 or higher.
- #3 - Candidate may conduct specified task if mentor has underpinning knowledge level of 3.

9.1.2. Underpinning Knowledge

The case of signaling competency underpinning knowledge can be defined as understanding, interpreting and applying best signalling construction practices and methods to the select function or role classification.

10. Role Classifications - Testing

10.1. Testing, Inspection and Commissioning

Persons undertaking the following Testing, Inspection and Commissioning elements shall adhere to the competency requirements in the realms of Testing, Inspection and Commissioning for:

- Interlocking Circuits;
- Data;
- Lineside Circuits;
- Mechanical Layouts;
- Power Supply Systems;
- Interface Systems;
- Communications;
- Construction;
- Principles; Knowledge; Domain; Product; Information; Communication

10.1.1. Minimum competency Requirements

The aim is to structure an inclusive, open system for anybody with sufficient knowledge and experience to complete work with safeguards to protect against the lack of local, domain specific knowledge.

TABLE 3 – TESTING, INSPECTION AND COMMISSIONING COMPETENCY MATRIX

Route/Domain Knowledge		Underpinning Knowledge											
		0			1			2			3		
		AT	T	ST	AT	T	ST	AT	T	ST	AT	T	ST
Competency Level	0	✓ #1	✓ #1	✓ #3	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2
	1	✓ #1	✓ #1	✓ #3	✓ #1	✓ #1	✓ #2	✓ #1	✓ #1	✓ #2	✓	✓ #1	✓ #2
	2	x	x	✓ #2	x	✓ #1	✓ #2	x	✓ #1	✓ #3	x	✓	✓ #3
	3	x	x	x	x	x	x	x	✓ #3	✓	x	✓	✓

- 0- No certified knowledge
- 1 - Limited understanding (typically < 5 years)
- 2 - Working (typically 5 to 10 years)
- 3 - Significant experience (typically > 10 years)
- #1 - Candidate may conduct specified task under mentorship, mentor has route/domain knowledge level of 2 or higher.
- #2 - Candidate may conduct specified task if mentor has route/domain knowledge level of 2 or higher.
- #3 - Candidate may conduct review if mentor has underpinning knowledge level of 3.

10.1.2. Underpinning Knowledge

The case of signaling competency underpinning knowledge can be defined as understanding, interpreting and applying best practice for test & commissioning management, principles testing and function testing methods of signaling installations for selected functions or role classifications.

11. Assessment

11.1. Assessor

Assessment of all competency applications will be undertaken by DPTI Signal Engineering, so that people can be assessed and competence determined in a consistent manner. The Assessor will use an audit mechanism that establishes and maintains consistency across all assessments.

The assessors will seek scalable evidence that reflects the range and complexity of the work being undertaken to ensure the candidate has the required breadth of knowledge and the experience and expertise to enable them to conduct a function in a competent manner.

The assessor will make an assessment against the prescribed criteria using the RSW evidence to ensure all DPTI requirements are met. The assessor may, if deemed necessary, use an oral interview to clarify any gaps within the evidence provided. On completion of the assessment the assessor will make the decision, if satisfied, and will complete the final SoC and sign off.

11.2. Approver

The assessor will forward the completed SoC to the DPTI approver. The approver shall make the final decision on acceptance of the candidate competency and ensure the correct process has been followed. On completion the approver signs the final SoC at the considered and agreed level assessed for the candidate.

APPENDIX A Employment Record

[DOCS AND FILES-#13122637-Appendix A](#)

Employment Record

EMPLOYMENT RECORD		
Name: Joe Bloggs	IRSE Membership No: 00012345 – RIW No: 00nnnnnnnn	Page No:
Dates From/To:	Company/Department/Appointment:	Job Description/Responsibilities

EMPLOYMENT RECORD		
Name: Joe Bloggs	IRSE Membership No: 00012345 – RIW No: 00nnnnnnnn	Page No:
Dates From/To:	Company/Department/Appointment:	Job Description/Responsibilities

3-1988 9-1990	British Aerospace (Dynamics) Calibration and Maintenance	Technician Reporting to C&M Engineering Supervisor	Responsible for calibration of digital/analogue multimeters and other test equipment calibration.

APPENDIX B Work Experience

[DOCS AND FILES-#13122638-Appendix B1](#)

[DOCS AND FILES-#13122639-Appendix B2](#)

WORK EXPERIENCE RECORD							
Name:		IRSE Membership No: 00012345 – RIW No: 00nnnnnnnn				Page No.	
This work experience record sheet provides the basis for demonstrating that the nominated person is suitably experienced							
Verification							
Ref No.	Name	Position	Organisation	IRSE/RIW No.	Signature	Initials	Date
1							
2							
3							
4							
5							
6							
7							

WORK EXPERIENCE					
Name:		IRSE Membership No: 00012345 – RIW No: 00nnnnnnnn			Page No.
Dates From – To:	Employer – Client:	Description	Equipment Types	Verification Signature – Position or Licence No:	Observations (Assessment/Follow-up/Licence Category Cross reference)

WORK EXPERIENCE					
Name:		IRSE Membership No: 00012345 – RIW No: 00nnnnnnnn			Page No.
Dates From – To:	Employer – Client:	Description	Equipment Types	Verification Signature – Position or Licence No:	Observations (Assessment/Follow-up/Licence Category Cross reference)

APPENDIX C Education and Qualifications

[DOCS AND FILES-#13122640-Appendix C](#)

Education and Qualifications	
Name:	IRSE Membership/Licence No: 00012345 – RIW No: 00nnnnnnnn

Date From/To:	Establishment	Course & Results	Verified