

Engineering, Design and Project Management Identification of Competence Procedure

EGP-01-03

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1 Introduction

1.1 Purpose

The purpose of this procedure is to ensure that ARTC meets its regulatory obligations and accreditation requirements by having in place an engineering, design and project management competence assessment process.

1.2 Scope

This procedure outlines required competencies, assessments and recording for ARTC's engineering, design, and project management roles. This document should be read in conjunction with [RLS-PR-003 Protocol for Entering the ARTC Rail Corridor](#) and [PEO-GL-001 Business Rules for Working in ARTC Rail Corridor](#).

1.3 Procedure Owner and Contact

Head of Engineering Standards owns this procedure.

Please direct all enquiries to: Standards@artc.com.au

1.4 Definitions

The following terms and acronyms are used within this document:

| Term or acronym | Description |
|--|---|
| ARTC Assessor | ARTC approved person to review RSW evidence of a matrix role as required and approve in the Rail Industry Worker (RIW) Program if competent. |
| MPM (Major Periodic Maintenance) | Is generally characterised as cyclical/planned activity that maintains the level of routine inspections and reduces the level of reactive or corrective maintenance. These activities can also give rise to the renewal of the original useful life of an asset. |
| Rail Industry Worker (RIW) Program | The Rail Industry Worker (RIW) Program is owned by the Australasian Railway Association (ARA) and endorsed by ARTC. The RIW Program meets ARTC's regulatory requirements and compliance with RSNL. It provides visibility of Rail Safety Workers (RSW) moving between projects and employers, maintaining a single electronic record about each RSW's health, training, and competencies. |
| Rail Safety Worker (RSW) | A Competent Worker who has carried out, is carrying out, or is about to carry out, rail safety work. |
| RCRM (Routine Corrective Reactive Maintenance) | Is characterised as scheduled activities used to inspect or service asset condition on a routine basis. The characteristics extend to include reactive or corrective activities that are required as a result of the inspections or unscheduled discovery of defects. |

2 Competency Requirements

The competencies that apply to engineering, design and project management roles are set out in the below competence matrices.

[EGP0103F-03 Engineering and Design Competency Matrix](#)

[EGP0103F-04 Project Management Competency Matrix](#)

Matrix identifies minimum requirements. Compliance with these requirements does not mean competence across the entire network, or you meet specific requirements to undertake work. Local requirements may still be required.

2.1 Engineering and Design

Various disciplines are required for making design decisions and creating design for rail infrastructure. These disciplines are summarised below.

| Discipline | Description |
|-----------------------------|--|
| Structures Design | To engineer and design railway, road and pedestrian bridges and other significant structures. |
| Track Design | To engineer and design rail system upon which railroad cars or other vehicles run. |
| Geotechnical Design | To plan out in systemic, usually graphic form, earthworks and structures foundations. |
| Civil Design | To engineer and design civil works, including track formations, rail to road interfaces, environmental and drainage works. |
| Mechanical Design | To engineer and design mechanical and kinematic items used in railway systems, including rail vehicles, rail infrastructure mechanisms, pipework, and rail infrastructure thermal design. |
| Electrical Design | To engineer and design electrical systems for the railway system that are not associated with signalling systems. |
| ICT Design | To engineer and design Information and Communications Technology (ICT) systems in the rail industry by designing and modifying complex software systems and computer hardware, not associated with signalling systems. |
| System / Safety Engineering | Systems Engineering or Safety Engineering activities (including Safety Case development). |

Within these disciplines are the roles which are described below.

| Role | Description |
|--|---|
| Discipline Designer | Person who undertakes the discipline design. |
| Discipline Design Verifier/ Approver | Person who is independent of the Discipline Designer and acknowledges the discipline design meets the required specification and approves the design on behalf of their organisation. |
| Discipline Scoping/ Acceptance of Design | ARTC employee responsible for the approval of the disciplines project scope and accepts the disciplines design ensuring all requirements of the disciplines project scope are satisfactorily completed. |

2.2 Engineering Management - Infrastructure Construction/Maintenance Design

Construction is generally capital works which is the building or establishment of a new asset. Maintenance is generally Major Periodic Maintenance (MPM) and Routine Corrective Reactive Maintenance (RCRM) works related to keeping an asset in normal or expected operating condition.

Competency Requirements

The infrastructure construction/maintenance competence roles are linked to the size and complexity of the infrastructure task (major, medium and minor) and the roles are described below.

| Role | Description |
|--|---|
| Supervision of Major Construction | Person who efficiently manages the overall elements of construction in accordance with the design. A major construction can be considered a new or multidisciplinary design and generally a Complex Project. |
| Major Construction Verification | Person who through investigation, comparison with a standard or reference to the facts, tests or checks the accuracy of correctness of a major construction. |
| Supervision of Medium Construction | Person who efficiently manages the overall elements of construction in accordance with the design. A medium construction can be considered unique or multidisciplinary e.g. Asset Renewals and could be a Complex or a Simple Project. |
| Medium Construction Verification | Person who through investigation, comparison with a standard or reference to the facts, tests or checks the accuracy of correctness of a medium construction. |
| Supervision of Minor Construction/ Maintenance | Person who efficiently manages the overall elements of construction in accordance with the design. A minor construction is not considered unique but can be multidisciplinary e.g. RCRM or MPM projects and generally a Simple Project. |
| Minor Construction/ Maintenance Verification | Person who through investigation, comparison with a standard or reference to the facts, tests or checks the accuracy of correctness of a minor construction. |

2.3 Civil Engineering Representative (CER)

Refers to engineering staff with an authority for making engineering decisions within the scope of the ARTC Track and Civil Code of Practice that consider the science and standards that relate to the performance and condition of track infrastructure. The CER role is an internal ARTC role for track maintenance engineers.

The CER role may only be assessed by Manager Track and Civil Standards or delegate.

2.4 Independent Competent Person – Track Maintenance Vehicle (ICP-TMV)

ICP-TMV is an ARTC employee or an external contractor with rolling stock knowledge to carry out initial certification of Track Maintenance Vehicles or recurring (annual maintenance, modifications and post-incident) certifications for Track Maintenance Vehicles that are owned or accredited by ARTC.

2.5 Project Management

Project Management is the planning, monitoring, and control of all aspects of a project to achieve the project objectives on time and to the specified cost, quality and performance.

Generally, there are various roles utilised to achieve these Project Management outcomes and these are described below.

| Role | Description |
|------------------|--|
| Project Director | The project director is responsible for balancing the needs of the business, including technical, quality and operational requirements. The project director is a part of the steering committee with the following specific responsibilities: |

| | |
|-----------------------------|---|
| | <ul style="list-style-type: none"> • Approving project expenditure within approved budget and delegation and ratifying the selection of the approval authority with ARTC corporate management. • Monitoring project finance. • Constraining user and supplier excesses. • Ensuring that the project gives value for money. • Maintaining the project direction in accordance with the objectives |
| Senior Project Manager | The person who is responsible for the planning and monitoring, administration and control of a project works on larger and more complex projects. |
| Design Manager | Responsible for the engineering design scope and significant high level technical interface role between engineering and design disciplines on the project. |
| Project Manager | Responsible for the planning and monitoring, administration and control of a project works. |
| Project Engineer | The person who is responsible for a significant technical interface role between engineering and design disciplines on the project. The role at times can also perform some duties of a project manager. |
| Project Officer/ Technician | Responsible to support project schedule and resource planning, programming project objectives, identifying deliverables and technical support. |

3 Assessment of competence

This section defines evidence requirements for a RSW to be assessed by an ARTC EDPM Assessor for the role and the associated process for obtaining a competency in the Rail Industry Worker (RIW) Program.

All roles are required to be reassessed every Four (4) years from the award date to confirm currency of skills, knowledge and experience.

Costs associated with the assessment are between the applicant and the ARTC EDPM Assessor.

3.1 Record of relevant Experience (RORE) form

Relevant skills, knowledge and experience is to be documented and assessed as required by the relevant matrix on the [EGP0103F-02 RORE Form](#).

Below describes specific requirements for information requested in the RORE form.

3.1.1 Tertiary Qualifications

A true copy of the award which includes the name of the institution and the date when awarded.

3.1.2 Chartered Credential and Registrations

The application shall contain documentation of at least a chartered status, or a registration listed on the matrix, preference is you submit all those available at time of application.

These qualifications confirm the understanding of the Engineer of their responsibility to ensure they have the appropriate state-based registration for the works they are performing.

3.1.3 CV/Resume

The resume should include the following information:

- Contact information: Include name, contact number and email address.
- Experience and Employment Summary: List employment (including internships) in reverse chronological order with position title, name and location of employer, dates of employment by year, and accomplishments in each position.
- Education/Training Courses: Include full qualification title, completion date, and name of issuing institution.
- Recognition and Awards: Record any formal recognition or awards received that validate skills, knowledge, and experience.
- References: Include 2 to 3 referees who can verify skills, knowledge, and experience. Include the referee's name, title, organisation, email address and contact number.
- Attach any further documentation that supports your competence:
 - Information on previous designs undertaken, including their complexity and feedback received from clients on completed designs.
 - Assessments conducted by an external organisation on previous designs undertaken for this organisation.
 - Relevant memberships.

3.1.4 Assessment Approval

The ARTC EDPM Assessor (or the ARTC Standards Group regarding ARTC EDPM Assessor application assessments) will review the evidence provided for the role by the RSW to determine whether they are:

1. Competent to carry out role for ARTC.
The assessor will approve in the Rail Safety Worker (RIW) Program.
2. Not competent to carry out role for ARTC.
The assessor will advise the applicant and/or manager the RSW does not yet have the minimum required competencies.
3. Require a follow-up professional conversation may be requested.
An interview can be used when intellectual property cannot be shared to validate evidence or gaps have been identified.

4 Reassessment Approval

The reassessment process needs to occur every Four (4) years for the RSWs competency role to remain valid or when they change organisations.

Costs associated with the Reassessment are between the applicant and the ARTC EDPM Assessor.

4.1 Role Reassessment

This is achieved by uploading current evidence of continued experience in the chosen roles as per the RORE Form. The ARTC EDPM Assessor will perform the Reassessment as required.

4.2 ARTC EDPM Assessor Reassessment

ARTC EDPM Assessor submits a completed RORE form with current evidence of continued experience and a re-signed External Assessor Agreement. The ARTC Standards Group performs reassessments of ARTC EDPM Assessor role.

5 ARTC EDPM Assessors

ARTC EDPM assessors are approved by the ARTC Standards Group. Relevant skills, knowledge and experience is to be documented and assessed as required by the relevant matrix on the [EGP0103F-02 RORE Form](#) and signed External Assessor Agreement. If approved, they will be allowed to assess roles applied for in the Rail Industry Worker (RIW) Program (to add new roles refer 4.2). ARTC EDPM Assessors will be provided with an ARTC EDPM Assessor guideline and e-learning module.

ARTC EDPM Assessors can only independently assess EDPM roles when they have the corresponding current Subject Matter Expert (SME) job role identified in their RIW profile. If they are seeking to assess other roles, a SME with the corresponding Job role in their RIW profile needs to be engaged and identified in the applicants RORE form.

5.1 CV/Resume additional requirements

Additional CV/Resume requirements to [3.1.3](#):

Demonstrate current knowledge of the industry, industry practices, and the job or role against which competency is being assessed.

- Relevant work experience in the areas being assessed.
- Attendance at relevant professional development, training and education activities focusing on good practice in the relevant industry competencies.
- Relevant participation in professional/industry networks.

Demonstrate current knowledge and skill in conducting assessments in a range of contexts.

- Familiarity with the competency standards in the training package to be used by the candidate as a basis of assessment.
- Have conducted or reviewed an equivalent assessment in the previous 12 months.

Demonstrate the necessary interpersonal and communication skills required.

- Participate in one professional development activity with a group in the previous 12 months.