



Australian Government

Department of Education, Employment and Workplace Relations

RIIPRO203A Operate programmable logic control systems

Release: 1

RIIPRO203A Operate programmable logic control systems

Modification History

Not applicable.

Unit Descriptor

This unit covers the operation of programmable logic controllers (PLCs) in extractive industries. It includes the preparation for and the operation and monitoring of operations using programmable logic controllers (PLCs).

Application of the Unit

This unit is appropriate for those working in operational roles, at worksites within:

- Extractive industries

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for operations	1.1. Access, interpret and apply compliance documentation relevant to the operation of programmable logic controllers 1.2. Identify and apply the functions of the PLC in accordance with site procedures and instructions 1.3. Identify and locate the plant's equipment by name, number/code and function
2. Monitor and control operations	2.1. Carry out pre-start, start-up and shutdown of the plant completely or partially in the sequence necessary to avoid plant or equipment damage or injury to personnel 2.2. Monitor and control operations within the equipment limitations, maintaining plant efficiency and effectiveness 2.3. Act on or report monitoring systems and alarms 2.4. Recognise and respond to hazardous and emergency situations 2.5. Maintain, process and pass on records and reports

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the performance criteria in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to operate programmable logic controllers (PLCs):

- apply legislative, organisation and site requirements and procedures
- apply operational safety requirements
- access, interpret and apply technical information
- applying the plant operating procedures
- apply production and equipment records maintenance requirements
- apply diagnostic techniques
- apply keyboard skills
- use relevant hand tools
- work wearing personal protective equipment

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to operate programmable logic controllers (PLCs):

- site hazard identification and response procedures
- site risk control procedures
- site and equipment health and safety procedures
- site environmental requirements and constraints
- site quality requirements
- site communication procedures
- site product characteristics
- site operational procedures
- process control pre-start, start-up, operating and shutdown procedures and techniques
- plant components functions, characteristics, technical capability and limitations
- process control breakdown procedures
- plant isolation procedures
- process control system corrective procedures
- site record keeping requirements
- site confine space work procedures
- site personal protective equipment requirements
- contaminant identification

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for the operation of programmable logic controllers (PLCs) • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the operation of programmable logic controllers (PLCs) • working with others to undertake and complete the operation of programmable logic controllers (PLCs) that meets all of the required outcomes • consistent timely completion of the operation of programmable logic controllers (PLCs) that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.

	• Aboriginal people and other people from a non English speaking background may have second language issues. • Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances. • Where applicable, physical resources should include equipment modified for people with disabilities. • Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the operation of programmable logic controllers (PLCs)
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:	• legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Functions of the PLC may include:	• control levels • densities • torque • pressures • sequence of operations • alarms • production records • motor amps • interlocks
Pre-start and start-up procedures may include:	• walk around check of the plant • instrument and control lever checks • reporting defects and damage • follow prescribed start-up sequence • confirm plant is operational
Shutdown procedures may include:	• following prescribed shutdown sequence • securing equipment
Monitoring may be by:	• computer screen • dials and gauges • lights • closed circuit TV • alarms
Control may be made by:	• keyboard input • switches and buttons • dials and gauges

Hazardous and emergency situations may include:	• confined spaces • working alone • personal injury • unplanned shutdown • environmental • chemical • fire • electrical • dust • noise
--	--

Unit Sector(s)

Processing (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.