Australian Government

Department of Education, Employment and Workplace Relations

ICTNPL4111A Develop provisioning of telecommunications building works project

Release: 1

ICTNPL4111A Develop provisioning of telecommunications building works project

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to develop provisioning of building services. It involves gathering information on the role of power and building services, equipment and infrastructure deployments, building standards, building services capacity and building works programs to evaluate allowable types of building services. Building services may be power systems, air conditioning, fire safety services, energy use and alarm systems within each technology. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Application of the Unit

Application of the unit	Technical officers or engineers from private and public organisations apply the skills and knowledge in this unit. They combine technical design skills with organisational skills to apply planning principles for provisioning of the various building projects and technologies within a telecommunications network to meet future customer demands. Technical officers or engineers may be responsible for small projects or parts of larger projects, and for the operational and engineering of the telecommunications network in general.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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. Scope the project	1.1. Prepare for given work according to ***relevant legislation***, ***codes***, ***regulations and standards***, including occupational health and safety (OHS) processes and procedures 1.2. Determine the main role power and ***building services*** perform in a ***network facility*** and note their effect on the ***reliability*** and ***performance*** of the network performance 1.3. Assess the ***provisioning*** process required to identify, plan and implement power and building services for equipment deployment plans
2. Assess equipment and infrastructure deployments	2.1. Evaluate the available capacity from power and cooling plant to support the effect on floor loading, power and heat load from equipment deployments 2.2. Determine the different levels of reliability performance standards applicable to the specific equipment deployment needs 2.3. Develop a process to plan or implement a power and building services upgrade that is compatible to the network equipment requirements 2.4. Assess the options available to manage capacity growth in a facility and the effect of potential single points of failure in an end-to-end power and building services system
3. Develop building works programs	3.1. Develop short and long term works programs for building projects that include minor upgrades to large installations 3.2. Determine triggers that may require a power and building services capacity or reliability upgrade 3.3. Prioritise ***projects*** based on customer demand and business needs
4. Assess provisioning of building services	4.1. Assess the possible effect on the current and future use of a building or space when provisioning power and building services 4.2. Produce ***cost estimates*** including ***constraints*** for the provisioning of a power and building services upgrade

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to liaise with internal and external personnel on technical and operational matters
- literacy skills to read and interpret technical documentation and write technical reports in required formats
- numeracy skills to:
  - calculate floor loading, power and heat load data
  - interpret results
  - evaluate different types of technical data
- planning and organisational skills to plan, prioritise and monitor own work
- problem solving and contingency management skills to adapt requirements to particular building facilities
- research skills to interrogate databases and investigate different building services
- technical skills to:
  - apply precautions and required action to minimise, control or eliminate single points of failure in an end-to-end power and building services system
  - estimate floor loading, power and heat loads
  - select and manage capacity growth in a facility

Required knowledge

- detailed knowledge and information required to assess the capacity and suitability of available power and building services
- overview knowledge of:
  - correlation between building service systems to network equipment requirements
  - different levels of reliability performance standards, applicable to the specific equipment deployment needs
  - information required to assess the effect on floor loading, power and heat load from equipment deployments
  - main regulatory standards
  - role of power and building services, capacity and standards
  - source budget cost estimates
  - specific short and long term works programs
- typical issues and challenges that occur in telecommunications building service systems and how these may be addressed
- upgrade knowledge of both power and building services

Evidence Guide

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	Evidence of the ability to: • assess the capacity and suitability of available power and building services for telecommunications building works • develop a process to implement a power and building services upgrade • develop short and long term works projects for equipment and infrastructure deployments • produce cost estimates for provisioning.
Context of and specific resources for assessment	Assessment must ensure: • building facilities where a telecommunications network project may be conducted • relevant regulatory, organisational procedures and documentation, and equipment documentation that impact on work.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct observation of the candidate developing short and long term works programs for building projects • review of cost estimates prepared by the candidate • review of report prepared by the candidate outlining constraints of provisioning power and building services upgrade • oral or written questioning to assess knowledge of power and building services and equipment and infrastructure deployments.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTNPL4110A Evaluate the planning requirements for provisioning a telecommunications building facility.

EVIDENCE GUIDE	
	Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Where applicable, physical resources should include equipment modified for people with special needs.

Range Statement

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 legislation, ***codes***, ***regulations and standards*** may include:	• Australian Communications Industry Forum (ACIF) standards and codes • Australian Communications and Media Authority (ACMA) technical standards • acts on noise and dust pollution • ARPANSA electromagnetic radiation (EMR) standard • Australian building codes and regulations • Australian standards • electricity supply codes

RANGE STATEMENT	
	• enterprise standards • environmental protection • equipment standards, intrinsically safe lightning protection, site engineering standard • fire regulations • hazardous situation • heritage legislation • international standards • local government building codes • OHS • Radcoms Act • Telecoms Act • traffic authorities.

RANGE STATEMENT	
Building services may relate to:	• air conditioning • alarm systems • fire safety • power sources.

Network facility may include:	• buildings
	• cabinets
	• containers
	• huts
	• network plant and equipment:
	  • air conditioning plant
	  • cabling room and main frame
	  • computer facility
	  • exchange equipment:
	  • switching
	  • transmission
	  • power:
	  • battery room
	  • no-break power plant
	  • power room
	• shelters.

Reliability may include:	• access rate over time • bandwidth over time • end-to-end performance over time • power supply over time.
Performance may include:	• bandwidth • broadband access • fault clearance rate • grade of service (GoS) • quality of service (QoS) • service delivery • upload and download rate.
Provisioning may relate to:	• reliable adequate service • reliable infrastructure • reliable performance.
Projects may include:	• construction works • design work • feasibilities • upgrades.

RANGE STATEMENT	
Cost estimates may include:	• labour • material • refurbishment • service equipment • upgrade work.
Constraints may include:	• external obligations • physical space • timing.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units		

Competency field

Competency field	Network planning