Australian Government

Department of Education, Employment and Workplace Relations

ICTNPL4110A Evaluate the planning requirements for provisioning a telecommunications building facility

Release: 1

ICTNPL4110A Evaluate the planning requirements for provisioning a telecommunications building facility

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to evaluate building service capability to meet present and future demands for a building facility housing telecommunications equipment. It involves gathering information and evaluating allowable types of building services, 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 assess the planning requirements 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 operation and engineering of the telecommunications network.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

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. Obtain building plans and specifications from planning section 1.3. Determine the type of ***facility*** and ***building services*** required to house telecommunications network equipment and plant to efficiently support the network 1.4. Determine the purpose of the main areas or rooms in the network building and note special requirements to support the safe operation of the facility 1.5. Verify who is responsible for the planning, provisioning, maintaining and operation of a facility
2. Evaluate the power requirements	2.1. Assess how the functions of the main power and building services support network equipment and the impact if building services are not provided correctly or fail 2.2. Produce a schematic diagram of the relationship of ***electrical components*** in an end-to-end power and building services system 2.3. Assess the different ***types of power sources*** likely to supply network equipment and determine the benefits or deficiencies 2.4. Determine how resiliency is built into the provisioning of a reliable power supply and how different levels of reliability can be achieved 2.5. Evaluate the impact of energy use and ***energy loads*** in the facility and determine how energy use can be minimised
3. Evaluate the requirements of air conditioning services	3.1. Assess the main ***types of air conditioning*** components or plant available and their suitability to the building requirements and draw a schematic diagram of the proposed layout 3.2. Determine how different equipment rack heat dissipation and size of a load can affect the cooling needs 3.3. Evaluate how the deployment of network equipment and other supporting infrastructure can affect the performance and loading of the installed air conditioner
4. Evaluate the	4.1. Assess the type, functions and components of ***fire***

ELEMENT	PERFORMANCE CRITERIA
requirements of fire safety services	***service protection systems*** for fire and smoke required in a network facility for the safety and protection of people and assets 4.2. Use the building plan to locate fire systems to be deployed to comply with fire regulations 4.3. Evaluate the effect equipment deployments may have on fire services and its ability to protect the site and maintain regulatory obligations

ELEMENT	PERFORMANCE CRITERIA
5. Evaluate requirements of alarm systems	5.1. Determine the level of alarming requirements from the building plan and specifications 5.2. Assess if basic monitoring is to be used with system or plant interrogation capabilities to produce an integrated alarm system for the facility 5.3. Determine where ***alarm systems*** are monitored and actioned and the personnel responsible 5.4. Evaluate what systems are used to connect power and building services output alarms and the software requirements needed to allow interrogation
6. Produce evaluation document	6.1. Assess the requirements for each of the building services needed to support the facility allowing for projection of future growth of the network and building expansion 6.2. Produce an evaluation document on the planning requirements for the proposed provisioning including identified services to support the building facility

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 interpret technical documentation and write reports in required formats
- 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 evaluate:
  - air conditioning systems
  - alarm systems
  - fire safety services
  - general energy use
  - impact of energy use in a facility
  - power supplies

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- detailed knowledge of:
  - alarm monitoring and hierarchy of responsibility
  - capacity of air conditioning system on a given load
  - different building services that are supported at a network site
- basic monitoring and plant interrogation capabilities
- complexities of various levels of alarming as applied to building facilities
- general types of facilities within building housing network equipment
- overview knowledge of:
  - different types of air conditioning components
  - different types of fire safety services
  - different types of power sources
  - equipment deployments on fire safety services
  - main energy loads associated in a facility
- regulatory obligations in relation to fire safety services
- software systems needed to allow alarm interrogation (outputs)

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:
	• evaluate facilities used for housing network equipment and how they may be used for provisioning
	• provide documentation that correctly associates responsibilities to planning, provisioning, maintenance and operation of a building facility
	• evaluate planning requirements for telecommunications building facilities including:
	  • correct provisioning of equipment for air conditioning systems and power supplies into building facilities
	  • energy use, alarm and fire safety services.

Context of and specific resources for assessment	Assessment must ensure: • building facilities where planning requirements for provisioning 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 undertaking an evaluation of a telecommunications building facility • review of evaluation report prepared by the candidate outlining the planning requirements for the proposed provisioning of identified services • oral or written questioning to assess knowledge of key building facilities, such as power supplies, fire safety, alarm and air conditioning systems.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

EVIDENCE GUIDE	
	• ICTNPL4111A Develop provisioning of telecommunications building works project. 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

RANGE STATEMENT	
	• Australian standards • electricity supply codes • 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	

Facility may relate to:	• buildings or shelters used to house:
	  • people:
	  • administration
	  • billing centres
	  • call centres
	  • engineering offices
	  • human resources
	  • network facility for equipment or plant:
	  • air conditioning plant
	  • cabling room and main frame
	  • computer facility
	  • exchange equipment (switching and transmission)
	  • power, no-break power plant and battery room
	• (Note: does not include towers, pipes and conduits).

Building services may relate to:	• air conditioning • alarm systems • fire safety • power sources.
Electrical components may include:	• battery load monitoring panel • busbars • diesel generator • exchange battery • exchange earth • fuses • mains converter • no-break power plant • power distribution cables • power monitoring panel • rectifier unit • solar panels • wind generators.

Types of power sources may relate to:	• electrical energy sources:
	  • diesel generator
	  • exchange battery
	  • mains converter
	  • mains power

RANGE STATEMENT	
	• no-break power plant • solar panels • wind generators • (Note: does not include a power utility company's external generation supply).
Energy loads may relate to:	• air conditioning • battery charger • cooling fans • lift motors • lighting • power outlets • pump motors • rectifier unit.
Types of air conditioning may include:	• air cooled • ducted • electric • freestanding • gas • water cooled.

Fire service protection systems may refer to:	• components:
	  • automatic notification system to fire authorities
	  • control panel
	  • fire alarm
	  • infra-red detectors
	  • smoke sensors
	  • sprinkler system
	  • warning activation system
	• functions:
	  • control
	  • detect
	  • manage
	  • suppress fire and smoke
	• system type:
	  • active
	  • passive.

Alarm systems may refer to:	• air conditioning alarm • components:

RANGE STATEMENT	
	• air conditioning alarm panel • biometric system • digital code • fire alarm panel • personal badge • radio frequency identification (RFID) • security alarm panel • fire exit alarms • intruder alarms • lift failure • power loading.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units		

Competency field

Competency field	Network planning